



# MUHAMMAD MEDICAL COLLEGE



**CONSOLIDATED  
INTEGRATED CURRICULUM DOCUMENT  
MBBS PROGRAM  
2024-2025**

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<b>ABBREVIATIONS</b>	
<b>BCQs</b>	<b>Best Choice Questions</b>
<b>BST</b>	<b>Bedside Teaching</b>
<b>CBL</b>	<b>Case Based Learning</b>
<b>CC</b>	<b>Curriculum Committee</b>
<b>CR</b>	<b>Clinical Rotation</b>
<b>C-FRC</b>	<b>Clinical Skills Foundation Rotations</b>
<b>CPC</b>	<b>Clinical Pathological Conference</b>
<b>CQ</b>	<b>Class Quiz</b>
<b>CR</b>	<b>Class Representation</b>
<b>CME</b>	<b>Continuous Medical Education</b>
<b>DSE</b>	<b>Directed Self-Learning</b>
<b>HO</b>	<b>House Officers</b>
<b>HOD</b>	<b>Head of Department</b>
<b>HEC</b>	<b>Higher Education Commission</b>
<b>LGIT</b>	<b>Large Group Integrated Teaching</b>
<b>MIT</b>	<b>Modes of Information Transfer</b>
<b>OSPE</b>	<b>Objective Structured Practical Examination</b>
<b>OSCE</b>	<b>Objective Structured Clinical Examination</b>
<b>OSVE</b>	<b>Objective Structured Viva Examination</b>
<b>PBL</b>	<b>Problem Based Learning</b>
<b>PERLs</b>	<b>Professionalism, Ethics, Research Leadership Skills</b>
<b>PMP</b>	<b>Patient Management Problem</b>
<b>PSIL</b>	<b>Problem Solving Integrated Learning</b>
<b>PM&amp;DC</b>	<b>Pakistan Medical &amp; Dental Council</b>
<b>PW/Lab</b>	<b>Practical work</b>
<b>QEC</b>	<b>Quality Enhancement Cell</b>
<b>SS</b>	<b>Self Study</b>
<b>SL</b>	<b>Skills Lab</b>
<b>SGD</b>	<b>Small Group Discussion</b>
<b>SIM</b>	<b>Simulation</b>
<b>SEQs</b>	<b>Short Essay Questions</b>
<b>UHS</b>	<b>University of Health Sciences</b>
<b>TBL</b>	<b>Team Based Learning</b>
<b>WBT</b>	<b>Ward Based Teaching</b>
<b>WPBA</b>	<b>Work Placed Based Assessment</b>

## INTRODUCTION

Muhammad Medical College is located just outside Mirpurkhas (6 km from Zero point) on Hyderabad road. This is opposite Ratanabad Railway station near main bus stand. It spreads over 40 acres owned by Muhammad Foundation Trust for its projects. All necessary facilities including building, gas, electricity, telephone, e-mail. Internet, transport, accommodation, food and drink spots are available. Public transport operating along Hyderabad road provides frequent and regular access to the college. The college building is more than sufficient to the requirement and has all the necessary departments. Each department has its own museum, laboratory and tutorial room, which are well equipped and fascinating. All facilities are modern and up-to the mark. Students will get clinical training in nearby 500 bedded Muhammad Medical College Hospital. There are hostels for boys and girls onsite and in the city. A new large state of art 3 stories girls' hostel has just been established onsite

## **MISSION STATEMENT OF MMC & VISION OF ISU/MMC & LUMHS**

### **MISSION STATEMENT OF MOHAMMAD MEDICAL COLLEGE (MMC)**

Nurturing students' potential by providing them highest quality education thereby producing individuals with strong values, compassion, and professionalism, emphasizing community engagement particularly with marginalized segments of rural population, encouraging students to become empathetic and socially responsible professionals by training them in the best evidence- based practice, capable of contributing to advancements through research and innovation.

### **VISION OF MOHAMMAD MEDICAL COLLEGE (MMC)**

To be an internationally recognized Medical Education institution, famous for its ethical work, emphasizing the importance of integrity, honesty and moral principles, highlighting the University's commitment to serving the community and producing unbiased and empathetic educated people, encouraging them to engage in research, critical thinking, innovation and evidence- based best practices.

### **VISION OF LIAQUAT UNIVERSITY OF MEDICAL AND HEALTH SCIENCES (LUMHS)**

Liaquat University of Medical and Health Sciences (LUMHS) seek to be a top tier healthcare Institution, producing ingenious academic leaders, medical researchers, and health care advocates to serve global community.

## MBBS PROGRAM OUTCOME

**By the end of the Five years of MBBS** program at MUHAMMAD MEDICAL COLLEGE (aims to produce Medical graduates who are able to:

1. Recognize signs and symptoms of common illnesses in population of different ages from different settings, and provide cost effective treatment to alleviate suffering
2. Construct an integrated knowledge of organ, structure, function and its regulatory mechanism through integrated learning.
3. Generate competence in practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.
4. Exhibit ethical patient-centred care based on Integrity, humility, social accountability and high ethical values of this sacred profession
5. Become an exemplary citizen by observing medical ethics and fulfilling social and professional obligations, responding to national aspirations.
6. Formulate management plan by taking focused history, performing physical examination, derive clinical decision making and evaluating laboratory tests, imaging investigations to interpret the results of common health ailments.
7. Counsel on health promotion to improve the health of individuals, and families including marginalized population.
8. Demonstrating professional behaviors that embody lifelong learning, altruism, empathy and cultural sensitivity in the provision of healthcare services.
9. Engage in research activity aimed at improvement of quality of health care including behavior modification of individual and community for quality life.
10. Developing scientific temper by acquiring continuous educational experience for proficiency in profession and promoting healthy living of the individual and population at large by critically analyzing the situation.
11. Commit to lifelong learning to keep up to date with developments in clinical practice and trends in disease at population level by strong leadership and management skills.
12. Applying evidence based practices for protecting, maintaining and promoting the health of individuals, families and community.

**MUHAMMAD MEDICAL COLLEGE (MMC)**

**ALIGNMENT OF ISU/MMC VISION WITH MMC MISSION**

**ALIGNMENT OF ISU/MMC VISION & MMC MISSION AND MBBS PROGRAM OUTCOME**

**ALIGNMENT OF MBBS PROGRAM OUTCOME WITH KNOWLEDGE, ATTITUDES AND SKILLS**

<b>LUMHS VISION</b>	<b>ISU/MMC Vision</b>	<b>MMC Mission</b>		<b>Program Outcomes</b>	<b>Blooms Taxonomy</b>
<b>Top tier Healthcare Institution</b>	Internationally Recognized Institute	Highest quality education		1. Recognize signs and symptoms of common illnesses in population of different ages from different settings, and provide cost effective treatment to alleviate suffering 2. Construct an integrated knowledge of organ structure, function and its regulatory mechanisms through integrated learning 3. Generate competence in practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases	Cognitive, Affective, Psychomotor
<b>Producing Ingenious Leaders</b>	Famous for Ethical Work	Producing individuals with strong values		4. Exhibit ethical patient-centred care based on Integrity, humility, social accountability and high ethical values of this sacred profession	Cognitive, Affective, Psychomotor
	Importance of Integrity, Honesty, Moral Principles	Compassion	Professionalism	5. Become an exemplary citizens by observing medical ethics and fulfilling social and professional obligations, responding to national aspirations	Cognitive, Affective, Psychomotor
<b>To serve global Community</b>	Commitment to Serving the Community	Emphasizing community engagement	Marginalised segment of rural population	6. Formulate management plan by taking focused history, performing physical examination, derive clinical decision making and evaluating laboratory tests, imaging investigations to interpret the results of common health ailments. 7. Counsel on health promotion to improve the health of individuals, and families including marginalized population.	Cognitive, Affective, Psychomotor
	Producing Unbiased and Empathetic Educated People	Become Empathetic		8. Demonstrating professional behaviors that embody lifelong learning, altruism, empathy and cultural sensitivity in provision of health care service.	Cognitive, Affective, Psychomotor

<b>Medical Researchers</b>	Engaged in Research	Contributing to advancements through research		9. Engage in research activity aimed at improvement of quality of health care including behavior modification of individual and community for quality life.	Cognitive, Affective, Psychomotor
<b>Healthcare Advocates</b>	Critical Thinking	Socially responsible professionals		10. Developing scientific temper by acquiring continuous educational experience for proficiency in profession and promoting healthy living of the individual and population at large by critically analyzing the situation.	Cognitive, Affective, Psychomotor
	Innovation	Training	Innovation	11. Commit to lifelong learning to keep up to date with developments in clinical practice and trends in disease at population level by strong leadership and management skills.	Cognitive, Affective, Psychomotor
	Evidence Based Best Practices	Best Evidence Based Practice		12. Applying evidence-based practices for protecting, maintaining and promoting the health of individuals, families and community.	Cognitive, Affective, Psychomotor



## PREAMBLE

The word curriculum comes from the Latin word *curare*, which meaning "race course." It is, to put it simply, the study path. "Planned educational experience or activity" is the definition of it in medical education.

The idea of a curriculum is as fluid as societal transformations. Curriculum is understood narrowly to be nothing more than a list of subjects that need to be taught in a classroom. Broadly speaking, it encompasses people's whole educational journeys, both inside and outside of institutions. Numerous curriculum approaches exist, including problem-based, outcome-based, discipline-based, integrated, and apprenticeship programs.

Globally, the idea of the Integrated Medical Curriculum is gaining traction. With an integrated medical curriculum, students will receive clinical experience in addition to scientific information, allowing them to study the subject matter by theme rather than by specialty.

Dismantling the existing boundaries that exist between the clinical and basic sciences in the context of the Traditional Medical Curriculum is the aim of integration. Through the iterative and progressive development of concepts and their application, integration should support the retention of knowledge and the learning of skills.

In order to provide a more comprehensive understanding of how to teach and learn medicine, vertical integration should incorporate not only the basic and clinical sciences but also the socio-humanistic and population health sciences. "Education that is organized so that it cuts across subject matter lines, bringing various aspects of the curriculum into meaningful association to focus upon broad areas of study" is what is meant to be understood by an integrated curriculum.

The conventional medical curriculum suggests that before moving on to clinical sciences, students should first study basic and preclinical/biomedical sciences; however, this is not how patients present in real-world situations. This approach is frequently criticized for failing to show students how basic and biological sciences relate to clinical practice; instead, it is thought that students should be encouraged to think like doctors from the moment they enroll in medical school. Because basic science education is placed in the context of clinical and professional practice, students view it as being more meaningful and relevant. For this reason, integration is crucial to medical education.

Parts of both integrated and traditional curricula are applied in a learning environment in a hybrid medical curriculum.

More than 90% of schools and medical universities took part in a recent poll sponsored by PM&DC, and the majority (65%) still follows traditional or subject-based curricula with little to no horizontal or vertical integration. 25% of schools use an integrated curriculum, while the remaining 75% use a hybrid. The majority of proponents of the traditional, subject-based curriculum are open to switching to an integrated modular curriculum; however, they would want a grace period and university support.

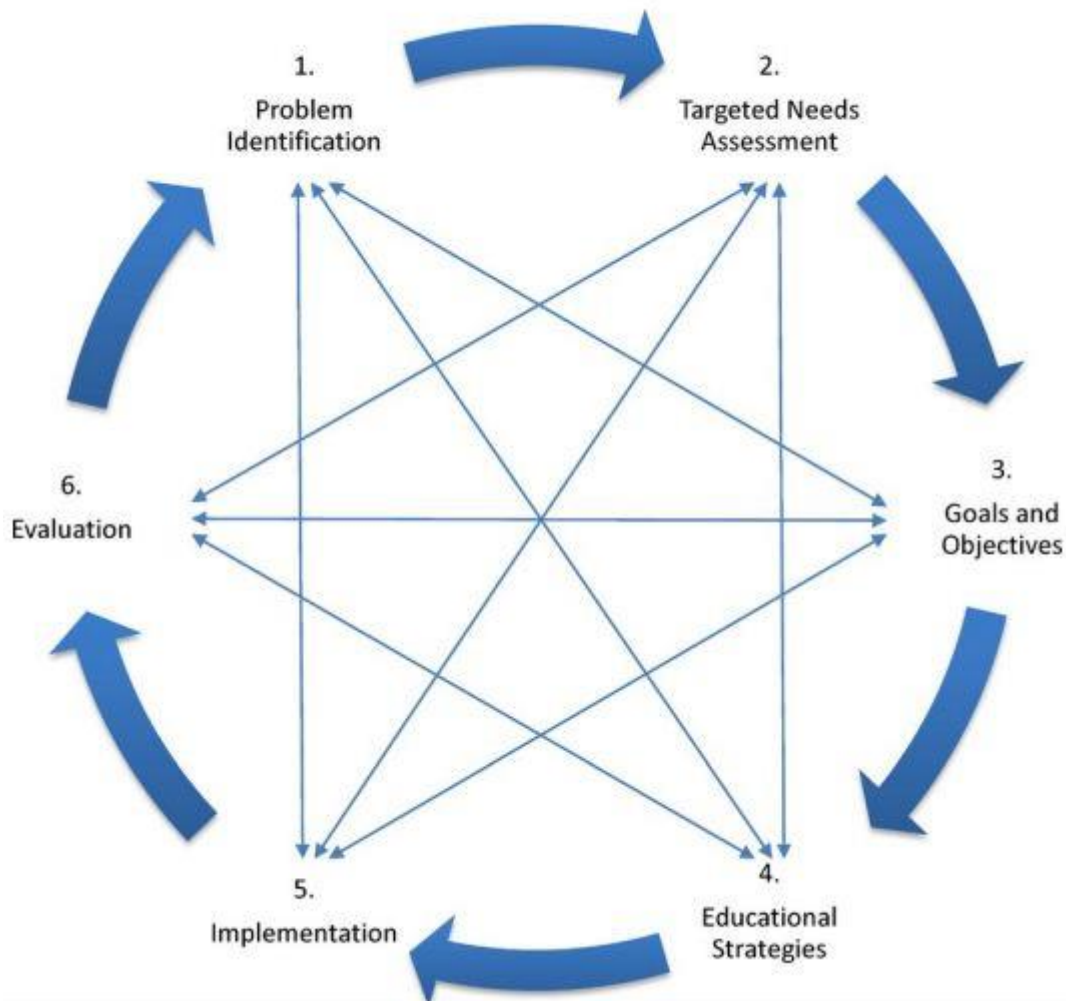
Based on data from multiple meta-analyses (1-4), senior medical educators' opinions from every province, and feedback from AJK, CAC is agreed that integrated curricula are more beneficial than traditional ones and are well-liked by faculty and students. The teaching innovation has been well-received by both faculty and students. Consequently, it is now appropriate to formally introduce integrated medical curriculum. It is suggested that medical and schools and universities transition to integrated curriculum, finishing the process by 2025 to ensure full implementation for the 2026 class.

Integration is now acknowledged as a crucial teaching tactic in the education of medical students. PMDC & LUMHS support ongoing curriculum revision by routinely reviewing and gathering input from stakeholders. A minimum level of integration in MBBS, known as correlation, has been included to this new curriculum. This curriculum improves health and avoids disease and is outcome-based, patient-centered, and relevant to the community. In cooperation with the MMC Department of Medical Education and the LUMHS Academic Directorate, the faculty of fundamental and clinical medical sciences has amended it.

## OPERATIONAL DEFINITIONS

1. **TRADITIONAL CURRICULUM:** Pakistan is among the countries where certain medical schools still use the old discipline-based curriculum. It is not until the third year of their medical degree that students are introduced to clinical instruction or patients. The curriculum for the first two years of medical school is entirely devoted to basic sciences. It is common practice to teach the first two years in a didactic, discipline-based manner. The earliest style of education is discipline-based curriculum, which makes no attempt to teach the fundamental sciences in a clinical setting.
2. **INTEGRATED CURRICULUM:** It is described as combining and arranging the various components to create a brand-new curriculum. When learning is provided within a framework and is organized into blocks or units that correspond to body systems, individual departments or subject areas make meaningful, holistic contributions to the development and delivery of learning. This is known as horizontal integration. Information from all of the curriculum phases is taught simultaneously in vertical integration, with an emphasis on major ideas or themes that are covered year-round and require knowledge revisited. Alongside the fundamental sciences, therapeutic skills are introduced early and developed.
3. **HYBRID CURRICULUM:** The program blends didactic course work with clinical rotations to provide students with the skills they need to become competent and good doctors. It includes both conventional teaching methods and some integration. It seems more practical for underdeveloped nations.

## OVERVIEW OF CURRICULUM DEVELOPMENT



A curriculum that adapts to changes in society is essential to students' positive development and progress. Therefore, in order to achieve the goal of developing an extraordinary education program, it is imperative that the curriculum be continuously assessed and updated through program assessments and rebuilding. The requirement for ongoing curriculum updates is well illustrated by the medical industry, since the concept of disease has changed throughout time. Previously, disease was thought to be a physical alteration in an organ; now, our concept of disease has evolved to encompass the complex relationship between social, psychological, and cultural elements and health.

The Sinai University is introducing a modular integrated undergraduate curriculum for its constituent and affiliated medical colleges in order to fulfill its mission of producing a seven-star physician with the generic competencies of "Skillful, Knowledgeable, Community Health Promoter, Critical Thinker, Professional, Scholar, Leader, and Role Model." These competences are further defined by a variety of enabling attributes that include attitude, knowledge, and abilities. The Kern's approach for developing medical curriculum serves as the foundation for both our curriculum development process and concept.

Encouraging students to think like doctors from the moment they enroll in medical school is the goal of the integrated modular curriculum. The vertical integration strategy broadens the idea of how to teach and study medicine by situating behavioral sciences and basic scientific education within the framework of clinical and professional practice. Content overlap across multiple subjects slows down the formation of concepts and makes people less eager to study. This needs to be reduced via an integrated strategy. An additional element that promotes the importance of information acquisition in formal undergraduate settings is the readiness of knowledge

availability. Core ideas and the "must know" principles for a student are given priority in these calibrations and refinements made possible by an integrated approach.

The curriculum is a complex synthesis of instructional methodologies, course material, learning objectives, learning experiences, evaluation, the learning environment, and each student's unique learning preferences, schedule, and work plan. The Muhammad Medical College (MMC) Curriculum Committee provides the curriculum's learning objectives. We plan our learning and teaching activities, which include lectures, skill labs, SGDs, CBLs, and student exposure to clinical settings, based on these learning objectives. Formative and summative evaluations are used to evaluate the students; internal exams receive 20% of the total weight, while university-conducted professional exams receive 80% of the weight.

## CURRICULAR COMMITTEE STRUCTURE

### **INTRODUCTION:**

Muhammad Medical College strives to create a supportive learning environment that supports student learning, encourages professionalism, and prepares students for lifelong self-directed learning in accordance with the Pakistan Medical & Council requirements.

### **PURPOSE:**

The Muhammad Medical College Curriculum Committee's goals are to:

1. Create, administer, and assess curriculum that meets PMDC criteria, reflects current medical knowledge and practice, and both.
2. To guarantee that the five-year MBBS program's learning objectives are met and are based on PMDC's seven-star doctor's ideology

### **RESPONSIBILITIES:**

The Curriculum Committee is in charge of three things. The PMDC's accreditation requirements and the Muhammad Medical College's overarching goal are followed in carrying out these duties.

1. Organizing and creating the curriculum.
2. Management and implementation of curricula
3. Reviewing and revising the curriculum.

In order to achieve these goals, the curriculum committee has to:

- Participate in curriculum meetings and work in tandem with the medical education and research department
- Establish the general goals, the substance of the curriculum, and the pedagogical framework for the MBBS curriculum.
- Provide enough time (i.e., teaching hours) to meet the learning objectives in accordance with PMDC criteria
- Suggest allocating resources appropriately to guarantee that teaching and learning approaches adhere to national and international standards.
- Create evaluation procedures that adhere to the fundamentals of medical education.
- The Curriculum Committee will routinely evaluate the curriculum and its components to ensure ongoing quality improvement.
  - Evaluations and results of board performance, courses, clerkships, and teachers are taken into account by the Curriculum Committee while assessing the caliber of the curriculum.
  - To make sure that learning objectives are appropriate and clearly stated, course content is relevant, methods are matched to the level of learning, appropriate reinforcement is included, and needless redundancy is eliminated, there are multi-source, periodic, systematic reviews of the design, content, and instruction in each course
  - Faculty development programs, coaching and feedback, and systematic faculty assessments are among the resources and tools that are given to them so they can become successful educators

The Curriculum Committee has the authority to organize subcommittees comprising of teachers, staff, and students who possess particular knowledge or abilities to aid in the committee's work in creating, overseeing, and enhancing the curriculum.

<b>CURRICULAR COMMITTEE</b>		
<b>s.no</b>	<b>Name</b>	<b>Designation</b>
1	Prof. Syed Razi Muhammad	Chairperson of committee
2	Prof. Shams-ul-Arfeen	Chairperson Department of Biochemistry
3	Prof. Aijaz A Memon	Director Clinical Teaching
4	Prof Dr Santosh	Chairman Department of Anatomy MMC
5	Prof Habib –ur- Rehaman	Chairperson Department of Physiology, MMC
6	Ghulam Mustafa Yousfani	Chairman Forensic Medicines, MMC
7	Prof Farzana Chang	Chairperson Department of Pathology, MMC
8	Prof: Dr. S.M Tahir	Director Research, Editor JMMC; MMC
9	Pro. Dr Nighat Kafeel	Chairperson of pharmacology
10	Prof .Dr Asif Shah	Chairperson of Community medicine
11	Dr. Fatima Muhammad	Medical Education
12	Dr. Saqib Baloch	Junior Doctor
13	Dr. Shahab Baloch	Junior Doctor
14	Dr. Haidar Rind	Junior Doctor
15	Wajiha Jafar	Student of M2 Student of M3 Student of M4 Student of M5

## RATIONALE AND NEED FOR CONTEXTUALIZATION

Muhammad Medical College (MMC) is a vibrant Institute that strives to meet all international health standards and is always developing to incorporate new and cutting-edge approaches. The practice of incorporating both local demands and international standards into the curriculum is known as contextualization. It guarantees that the curriculum satisfies both international standards and the needs of the local community.

Contextualization is crucial for health professionals because it makes students more ready for the real world, where they will be offering healthcare services to a variety of people.

At the time of curriculum building, content identification, contextualization, and validation necessitate simultaneous consideration of local needs and global standards by the necessary leaders and experts.

Muhammad Medical College engaged medical educators and subject matter professionals to accomplish this. The university intends to solicit feedback from all relevant local parties. This will assist in making sure the program satisfies the requirements as they stand right now.



Contextualization is necessary in Pakistan, where the curriculum is still based on an antiquated discipline, to make sure that it meets the needs of the community. Due to the nation's particular healthcare issues, including the high prevalence of infectious diseases, malnutrition, and maternal and child mortality, in addition to socioeconomic concerns, contextualization is clearly needed while developing curricula in Pakistan. A customized approach to medical education is necessary due to the high burden of both communicable and non-communicable diseases, the scarcity of healthcare resources, and the diversity of cultures and languages.

Graduate students' performance is probably going to improve as a result of the curriculum's contextualization. Through the integration of foundational and clinical disciplines, early clinical orientation, and the development of a contextual understanding of learning through a practical approach, graduates will be more equipped to tackle health issues in their local communities. This will raise their level of proficiency, self-assurance, and capacity to offer varied populations high-quality healthcare services.

Learning is a lifelong process for Tomorrow's Doctor. Learning and training in Medicine has different periods as formal/undergraduate/foundation education and articulated in Curriculum. Non-formal/post graduate education is earned through climbing the ladder of FCPS/MDS/MHPE/M-Phil and Ph D and demonstrated via Professional Development Programs, Capacity Building and Continuous Medical Education.

The Curriculum Document of Muhammad Medical College (MMC) Program is addressing the content provided by the accreditation/regulator bodies' such as Pakistan Medical & Council (PM&DC) & Higher Education Commission (HEC). This document is developed to guide undergraduates who are capable to provide the quality and competent healthcare to the patients by addressing the needs of the society.

The graduate program of MBBS was initiated in 1999 and the curriculum is merged in the study guides of every year which is provided to every student and the teaching faculty of the respective year. This study guide will be revised every year according to the need. The curriculum highlighted integration of the disciplines in a horizontal & vertical manner. Integration is what is needed by the graduate to function competently in real-world practice settings.

The curriculum document of BDS graduate program is addressing the elements mentioned in the document of Pakistan Medical & Council, (National Accreditation Framework for Medical and Schools in Pakistan 2019) & standards/framework/Guideline for development of Competency-Based Medical education. This document expressed the quality standards for accreditation of Medical and Colleges in Pakistan such as vision and mission statement of the Institute which should be reflected in the outcome of the extended MBBS Program, Curricular Organization, Educational Content, Curriculum Management, Assessment Plan, Student Awards, Faculty Development, Program Evaluation and Continuous Renewal, Governance Services and Resources and Research and Scholarship.

The syllabus/educational content that needed to be covered during the five years of MBBS program was provided by PMDC as well as the number of hours each subject needed to be taught. Guidance was sought from Pakistan Medical & Council & LHMHS in this regard and the University's proposal of curricular review was endorsed by both bodies.

The curriculum document of Muhammad Medical College (MMC) is developed according to the syllabus provided by the Liaquat University of Medical and Health Sciences (LUMHS) which was initially traditional based. LUMHS has introduced integrated Modular Curriculum ever first time in 2021 for First Year BDS. This was the start of the needs assessment process as per PMDC standards. The curriculum of MDC is hybrid curriculum which is the combo of traditional and integrated curriculum implemented as modular in the learning environment of MDC. Hence, curricular committee was developed and comprised of principal Muhammad Medical College (MMC), all subject specialists and Medical Educationists to suggest methodologies to cultivate a curriculum. Various learning strategies were incorporated such as interactive lectures, tutorials, case based learning, PBLs, self-directed learning and directed self-learning. All teaching strategies are interactive & small group format. In addition, non-formal experiential learning for student is promoted by CME. All this has been structured taking into account the Best Evidence Based Medical Education literature and our local culture and context. Moreover, the Electives are not part of the curriculum. Students can avail electives whenever he/she has completed the Academic Contact Session and during vacations. PERLs (Professionalism, Ethics, Research and Leaderships Skills) are part of the Curriculum and will be taught in every year.

No transformation is possible without the involvement of a dedicated faculty and staff, which took on the task with unfathomed zeal and through their efforts, the outcomes which initially were thought to be a dream took on the shape of reality.

Hopefully with the passage of time this document will prove to be the step ahead in continuing curricular reforms in medical and colleges of our country as it is an imperative step which is needed to be taken to produce graduates who can accomplish what society demands from them that is quality patient care.

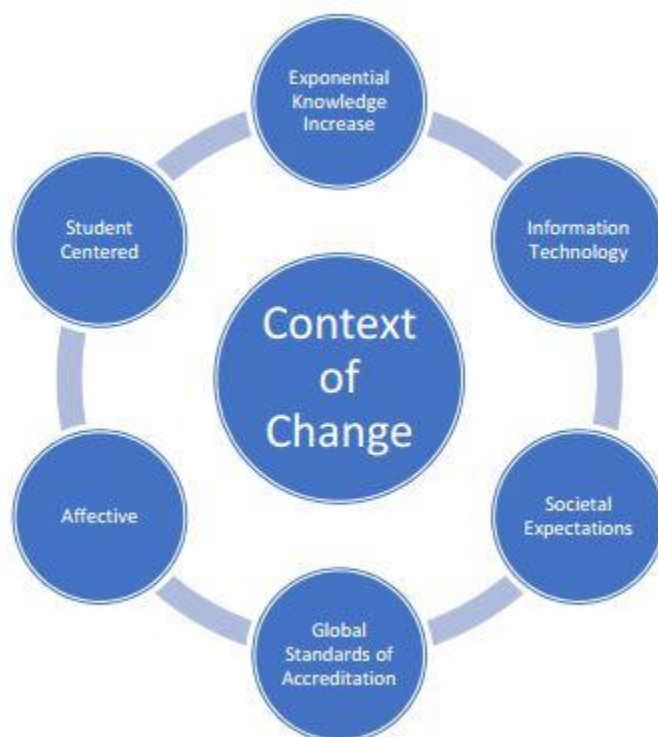
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**Prof Dr Syed Razi Muhammad**  
Chancellor  
Ibne-Sina University  
Mirpurkhas



## CONTEXT FACETS OF CURRICULUM

Muhammad Medical College supports the widely recognized best practices for all official development endeavors. The Department of Medical Education at MMC created a systematic procedure for identifying curricula, organizing them thematically, validating their content, and placing them in context. The integration of current teaching and learning methods with worldwide change proposals continued to be the scaffolding concept of progress.



Several viewpoints regarding the context of change included:

1. Over the previous few years, an exponential increase in course content has been documented. Scientific discoveries, technological breakthroughs, and educational improvements that have entered the mainstream body of knowledge are the causes of this expanded amount of knowledge base. Due to the growing amount of knowledge that is needed, it is necessary to prioritize tasks, eliminate ideas that are duplicates, and use contemporary information communication methods.
2. The expectations that society has of healthcare professionals are constantly changing. Ideally, patient satisfaction and the responsiveness of the health system should be at the same level. The undercurrents that drive healthcare systems include paradigms like societal requirements, healthcare access, resource equity, and systems awareness. These components are always changing and being redefined, which sets the tone and provides the details for the healthcare workforce's social accountability. For the graduates' professional training, social grooming, and sense of accountability, these components must be explicitly covered in the curriculum.
3. The world after the pandemic has changed to a newer level of meet ups and schooling perspectives. With the rise of blended learning, online monitoring, and hybrid learning, approaches must provide for the potential to combine approaches to create a hybrid framework as needed. It was only possible to create such a framework with the development of technology.
4. The curriculum was revised, assessed, and written while being compared to the most recent, widely recognized requirements for basic medical education. Adherence to the national regulatory bodies is an essential prerequisite. To ensure worldwide acceptance and employability, the curriculum is given a meaningful direction by connecting with international accrediting authorities.

5. In the past, the curriculum was constantly increased to cover more ground and develop more skills. But today's social consciousness, legal obligations, growing responsibility, and community relations demanded that the young learners receive categorically structured instruction in the "affective" domain. When creating a special "spiral" for the emotional training, this viewpoint was also maintained. In order to guarantee the training of this field and establish its objective nature, the spiral of "PERLs" will also undergo evaluation.
6. Ultimately, the most important foundation for any curriculum's success is "student centeredness," which was ingrained in the delivery method. Students will have more control over their education with the introduction of problem-based learning and its components, such as "Electives," self-directed learning sessions, and portfolio construction.

## PROCESS OF CURRICULUM DEVELOPMENT

A clearly defined process was created to have a standardized input from the subject experts, with the backdrop for contextualizing curriculum elements and the need to develop a newer curriculum while maintaining a connection with the previously established educational and professional practices. ISU can boast a great deal of cognitive diversity because its faculty and subject matter expertise come from all of its affiliated colleges. The essential roles of syllabi identification, thematic listings, hours allocation, defining scope of integration, module nomination, content sequencing, and identifying integrating components were assigned to these subject experts and medical educators in that order. Through multiple meetings and workshops, an iterative approach of deliberation and decision making was used to improve all of the previously listed features of curriculum.

- a. Under the direction of their respective subject specialists, subject advisory committees identified the inaugural curricula. These subject matter specialists made sure that every crucial aspect of the subject was covered in the corresponding syllabi, eliminating any information that was unnecessary, out-of-date, or out of context. Subject matter specialists make up these committees.
- b. The Curricular Steering Committee was consulted as a next step. Medical educators from all of the connected medical colleges make up the steering committee. The process of completing the five-year framework for a "Modular Integrated Curriculum," including all of its suggested spirals, patterns, modules, and clerkships, was assessed and approved by the committee members. The curriculum framework, module placements, identification, clerkships, and alignment with assessment procedures were their main areas of concentration.
- c. The subsequent stage of designing and developing curricula involved identifying themes, organizing syllabi elements into corresponding modular patterns based on the themes, specifying the subjects to be taught for each learning objective, and allocating hours for various components. This was carried out as an ongoing, hands-on development and design workshop. Medical educators and subject matter specialists conducted it. The majority of the subject advisory panels were represented by the subject specialists. All of the subject matter specialists, however, had notable educational backgrounds for their subjects and were leaders in their own fields.
- d. In order to finish the modules, a working committee consisting of Lead Medical Educationists and the Department of Medical Education determined on the modules' structure, themes, hourly allotment, syllabi material, and suggested clinical relevance.
- e. The completed modules, evaluation guidelines, and structure have undergone the required procedures of the Academic Council and Board of Studies.
- f. Since the curriculum is a work in progress, any suggestions for changes, additions, or deletions made during the statutory approval process were included in the curriculum guidelines.
- g. Additionally, it has been made sure that a routine for feedback and curriculum assessments is integrated throughout the entire implementation process, allowing for periodic additions and revamps. This last action is required to ensure that any educational component is included and that there is no duplication in the content delivery.
- h. The entire approach of including stakeholders, disciplinary perspectives, medical educationists monitoring and leadership involvement for the curriculum development.

## CURRICULUM ORGANIZATION AND STRUCTURE

The Curriculum of Muhammad Medical College is designed and organized in the light of following key points:

- A. In MMC, MBBS curriculum is an Integrated Curriculum. In the first two years, it shall be delivered in a System Based Modular Format with clinical relevance. However, in 3<sup>rd</sup> year MBBS and 4<sup>th</sup> year MBBS, students shall get clinical exposure through rotations in the wards and OPDs and in Final Year MBBS through clerkships
- B. There are Five modules in first year MBBS, 6 modules in 2<sup>nd</sup> year MBBS, 6 modules in 3<sup>rd</sup> year MBBS, 6 modules in 4<sup>th</sup> year MBBS and 10 Modules in Final year MBBS, each will have modules, duration of which depends upon the number and complexity of the objectives to be achieved in that module
- C. The curriculum will be delivered by modular teams of multidisciplinary basic science faculty and relevant clinical medical sciences faculty.
- D. The planning and delivery will be coordinated by year coordinators who will guide module coordinators of their respective years for efficient implementation
- E. Modular Coordinator will be responsible for teaching and assessment during each module. S/he will be appointed by Principal in coordination with Department of Medical Education.
- F. Clinical Coordinator will be responsible for placement, teaching and assessment during clinical rotations.
- G. MMC will provide study guides of each year to the students.
- H. To attain the integration in MBBS program, teaching shall be done in three spirals Basis of Medicine (**Spiral I -Years I & II**): The syllabus will be integrated horizontally around systems of the body in which Anatomy, Physiology and Biochemistry will be taught with clinical relevance. Additional chunks of content will be added in a module that exactly does not fit in the central theme of the module.
- I. Longitudinal themes, General Education (Behavioral Sciences, Islamiyat, English, Pakistan Studies, Art & Humanities, Communication Skills, Clinical Care, Professionalism, Research Methodology, Leadership, Management, Medical Ethics, patient Safety, EBM & Infection Control, ICT (Computer Skills, Self-Study are an integral part of year I. However, assessment of these subjects will be the responsibility of institute itself.
- J. Islamiyat and Pakistan Studies will be assessed by the University in first and second professional examination.
- K. Apart from attending daily scheduled sessions, students should engage in self-directed learning to achieve the desired objectives.
- L. Professional Exams will be module wise. There will be three papers, one paper for each module

**STANDARD-5: MBBS CURRICULUM FRAMEWORK**

Months	Feb - March	April		June	July		August	Sept – Oct		Nov	Dec
Year 5	Medicine	Medicine & Allied		Pediatrics	Surgery		Gynaecology/Obstetrics	Surgery & Allied			
	Mid-module formative Assessment BCQs=25-50, SEQs=10-15, OSCE = 15 End-Module Theory Paper MCQs =25-50, SEQs=10-15, OSCE=15 stations	Mid-module formative Assessment BCQs =25-50 SEQs=10-15 End-Module Theory Paper Article/Assessment/Portfolio/Leaderships/Communication skills/Behavior	Block 13 Exam Theory MCQs = 100, SEQs = 10, OSCE = 15 Stations, Mini-CEX	Mid-module formative Assessment BCQs =25-50 SEQs =10-15 OSCE = 15 End-Module Theory Paper MCQs =25-50, SEQs =10-15 OSCE =15 stations	Mid-module formative Assessment BCQs =25-50 SEQs=10-15 End-Module Theory Paper Article/Assessment/Portfolio/Leaderships/Communication skills/Behavior	Block 14 Exam Theory MCQs = 100, SEQs = 10, OSCE = 15 Stations, Mini-CEX	Mid-module formative Assessment BCQs =25-50 SEQs =10-15 OSCE = 15 End-Module Theory Paper MCQs =25-50, SEQs =10-15 OSCE =15 stations	Mid-module formative Assessment BCQs =25-50 SEQs=10-15 End-Module Theory Paper Article/Assessment/Portfolio/Leaderships/Communication skills/Behavior	Block 15 Exam Theory		
	Clinical Rotation	Clinical Rotation		Clinical Rotation	Clinical Rotation		Clinical Rotation	Clinical Rotation			
End of ward rotation Assessment Logbook & Mini-CEX	End of ward rotation Assessment Logbook & Mini-CEX	End of ward rotation Assessment Logbook & Mini-CEX		End of ward rotation Assessment Logbook & Mini-CEX	End of ward rotation Assessment Logbook & Mini-CEX		End of ward rotation Assessment Logbook & Mini-CEX	End of ward rotation Assessment Logbook & Mini-CEX			
										Prep Leaves	
										Pre-professional Exam	
											Final Professional Exam Theory, MCQs = 100, SEQs = 10 Clinical OSCE = 15 Stations, Mini-CEX

Year 4 Assessment Clinical Clinical Assessment	GIL, Hepatobiliary & Metabolism	Renal, Endocrine & Reproduction	Block 10 Exam Theory MCQs = 100, SEQs = 10, Clinical OSCE = 15 stations	Neuroscience	ENT	Block 11 Exam Theory MCQs = 100, SEQs = 10, Clinical OSCE = 15 stations	EYE	Clinical Subjects (Medicine, Surgery, Psychiatry Gynae)	Block 12 Exam Theory
	Mid-module formative Assessment BCQs= 25-50 SEQs= 5-10, OSPE= 5-10	Mid-module formative Assessment BCQs= 25-50 SEQs= 5-10, OSPE= 5-10		Mid-module formative Assessment BCQs = 25-50 SEQs = 5-10, OSPE = 5-10	Mid-module formative Assessment BCQs = 25-50 SEQs = 5-10, OSPE = 5-10				
	Clinical Rotation	Clinical Rotation		Clinical Rotation	Clinical Rotation				
	End of ward rotation Assessment Logbook & Mini-CEX	End of ward rotation Assessment Logbook & Mini-CEX		End of ward rotation Assessment Logbook & Mini-CEX	End of ward rotation Assessment Logbook & Mini-CEX				
Year 3 Assessment Clinical Clinical Assessment	Infectious Diseases Module	Blood – II Module	Block 7 Exam Theory MCQs = 100, SEQs = 10, Practical OSCE = 10 stations	Respiratory – II Module	CVS – II Module	Block 8 Exam Theory MCQs = 100, SEQs = 10, Practical OSCE = 10 stations	GIT & Hepatobiliary-II Module	Endocrine Module	Block 9 Exam Theory
	Mid-module formative Assessment BCQs= 25-50 SEQs= 5-10, OSPE= 5-10	Mid-module formative Assessment BCQs= 25-50 SEQs= 5-10, OSPE= 5-10		Mid-module formative Assessment BCQs = 25-50 SEQs = 5-10, OSPE = 5-10	Mid-module formative Assessment BCQs = 25-50 SEQs = 5-10, OSPE = 5-10		Mid-module formative Assessment BCQs = 25-50 SEQs = 5-10, OSPE = 5-10		
<p style="text-align: center;"><b>Fourth Professional Exam</b> Theory, MCQs = 100, SEQs = 10 Clinical OSCE = 10 Station, Mini-CEX (EYE,ENT)</p>									
<p style="text-align: center;"><b>Third Professional Exam</b> Theory, MCQs = 100, SEQs = 10 Practical OSPE = 10 Station</p>									

				10, OSPE = 5-10			10, OSPE = 5-10				
	Clinical Rotation	Clinical Rotation		Clinical Rotation	Clinical Rotation		Clinical Rotation	Clinical Rotation			
	End of ward rotation Assessment Logbook & Mini-CEX	End of ward rotation Assessment Logbook & Mini-CEX		End of ward rotation Assessment Logbook & Mini-CEX	End of ward rotation Assessment Logbook & Mini-CEX		End of ward rotation Assessment Logbook & Mini-CEX	End of ward rotation Assessment Logbook & Mini-CEX			
Year 2	Neurosciences Module	Head & Neck Module	Block 4 Exam Theory MCQs = 100, SEQs = 10, Practical OSPE = 10	GIT, Hepatobiliary & Metabolism	Renal Module	Block 5 Exam Theory MCQs = 100, SEQs = 10, Practical OSPE = 10	Reproduction Module	Endocrine Module	Block 6 Exam Theory		
Year 2 Assessment	Clinical Rotation	Clinical Rotation		Clinical Rotation	Clinical Rotation		Clinical Rotation	Clinical Rotation		Clinical Rotation	
	Mid-module formative Assessment BCQs = 25-50 SEQs = 5-10, OSPE = 5-10	Mid-module formative Assessment BCQs = 25-50 SEQs = 5-10, OSPE = 5-10		Mid-module formative Assessment BCQs = 25-50 SEQs = 5-10, OSPE = 5-10	Mid-module formative Assessment BCQs = 25-50 SEQs = 5-10, OSPE = 5-10		Mid-module formative Assessment BCQs = 25-50 SEQs = 5-10, OSPE = 5-10	Mid-module formative Assessment BCQs = 25-50 SEQs = 5-10, OSPE = 5-10		Mid-module formative Assessment BCQs = 25-50 SEQs = 5-10, OSPE = 5-10	
Year 1	Foundation Module	Blood Module	Block 1 Exam Theory MCQs = 100, SEQs = 10	Musculoskeletal Module		Block 2 Exam Theory MCQs = 100, SEQs = 10	Cardiovascular Module	Respiratory Module	Block 3 Exam Theory		
Year 1	Clinical Rotation	Clinical Rotation		Clinical Rotation			Clinical Rotation	Clinical Rotation			
											Second Professional Exam Theory, MCQs = 100, SEQs = 10 Practical OSPE = 10 Station
											First Professional Exam Theory, MCQs = 100, SEQs = 10 Practical OSPE = 10

Assessment	Mid-module formative Assessment BCQs= 25-50 SEQs= 5-10, OSPE= 5-10	Mid-module formative Assessment BCQs= 25-50 SEQs= 5-10, OSPE= 5-10		Mid-module formative Assessment BCQs= 25-50 SEQs= 5-10, OSPE= 5-10		Mid-module formative Assessment BCQs = 25-50 SEQs = 5-10, OSPE = 5-10	Mid-module formative Assessment BCQs= 25-50 SEQs= 5-10, OSPE= 5-10				
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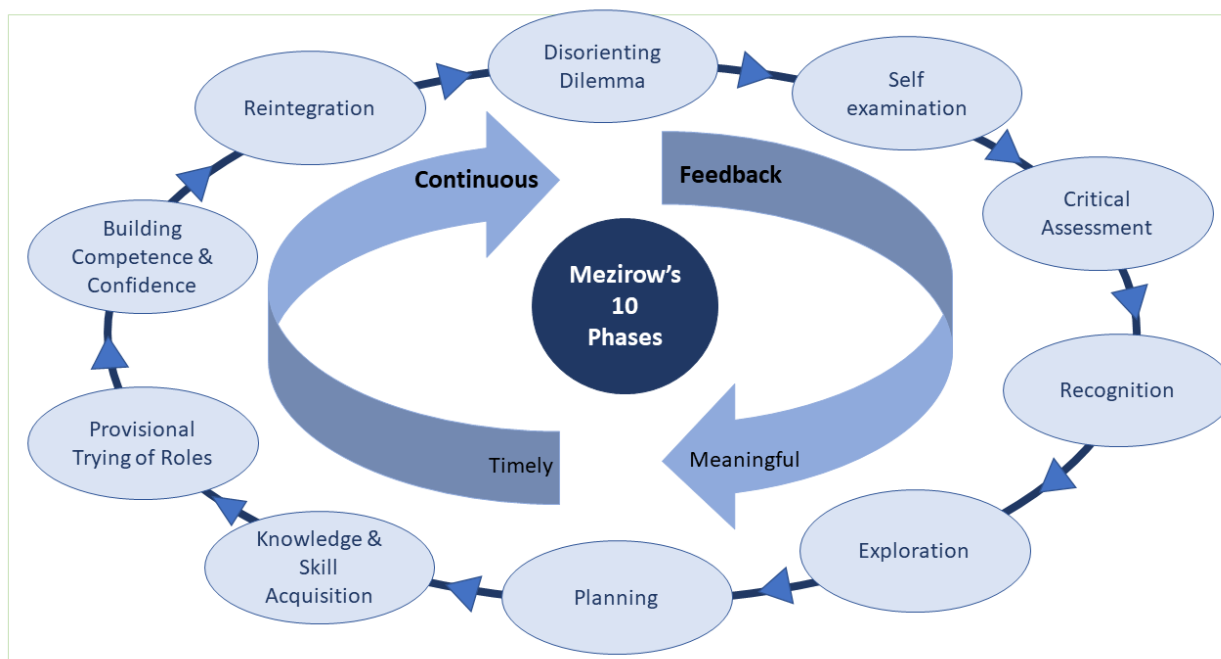


## CURRICULUM MAP

## SCOPE OF INTEGRATION

Curricular reforms and program assessments are essential for maintaining learning, implementing innovations, contextualizing educational processes with societal requirements, and keeping up with technological and healthcare improvements. Muhammad Medical College wholeheartedly supports these change-inducing factors, and the university's goal is consistent with such dynamic maintenance.

These days, a century-old idea—which was based on Flexner's study and divided the field into pre-clinical and clinical stages—is giving rise to emerging paradigms of integration across disciplines and years. Another foundation for curriculum revisions is Mezirow's notion of "transformative learning," which is based on developing dynamic interactions between teachers and students as well as a common body of knowledge to support student learning and personal development.



The nationally mandated competencies of seven-star physicians are aligned with the outcomes of the MBBS program through the use of a modular, integrated curriculum. The program's results are comparable to those that the country's regulatory bodies have received from MBBS graduates thus far. ISU The seven-star competencies are translated into the session-specific learning results by the curriculum outcomes. The objectives are broken down into smaller goals that represent the three learning domains. These goals are then graduated in spirals and horizontally integrated to foster higher order thinking, professional approach acquisition, practical knowledge with a broad base, and learner curiosity.

Integrating a component of individual learning into larger practices and group learning scenarios is another facet of curriculum design that has been maintained.

MITs that encourage the growth of individual learning inclinations include PBL and small-group discussions.

Early clinical exposure is necessary for practicality and applied knowledge, and this has been the main consideration in developing the spiral of Clinical Skills Foundation, Rotation, and Clerkships. Even with its limitations, an early clinical exposure over the first two year's fosters interest and creates clinical learning contexts.

## SEVEN STAR COMPETENCIES

A few noteworthy elements that have been included into the curriculum for each of the three training domains are listed below, following discussions and an iterative process involving subject matter experts, medical educators, and the university lead:

### A. COGNITIVE DOMAIN

#### A. HORIZONTAL INTEGRATIONS

There are 33 modules in the curriculum structure, which spans five years. The modular structure, which allows for the simultaneous application of several foundational disciplines to the themes, clearly demonstrates horizontal integration. All of the fundamental disciplines are represented in the modules according to the relative weights assigned to each piece of content. The assessment framework makes sure that the learner's concept development incorporates the applied/clinical element while maintaining the clinical relevance and context at the center.

#### B. CLINICAL RELEVANCE AND THEMES

The suggested topics and therapeutic significance come before any module objectives. These are based on the module's logic in order to guide the learning pattern toward a professional, practical approach. Institutional discretion, however, does not exclude using any other theme approach as long as the program's objectives are sufficiently met.

#### C. VERTICAL INTEGRATION

The modules' spiral arrangement inside the framework guarantees a review of the fundamental sciences. The learner is first oriented by the applied and clinical learning objectives, and the repeating module rhymes with the clinical rotations against a background of basic sciences in a horizontal fashion. The last year of the clerkship is the final review, which is mostly focused on the ideal integrated fusion of three domains of learning and is mostly grounded in the workplace.

### B. PSYCHOMOTOR DOMAIN

#### A. CLINICAL SKILLS; FOUNDATION, ROTATIONS AND CLERKSHIP

Clinical Skills have a completely skills-dominant spiral pattern. The foundation of psychomotor training is this spiral. Clinical Skills; Foundation, which will stand for clinical orientation, will take up the first two years of study. Depending on the resources available, the clinical orientation will be held in skill labs, simulation centers, and wards. The applied/clinical component of the knowledge base and the clinical orientation will prepare the student for the professional and practical aspects of learning.

The spiral will advance to Clinical Skills; Rotations in the next two years. The rotations in the various wards will follow the underlying developmental framework that was established years ago. The second visit of the modules, which will now have a better foundation in pathology and pharmacology and be more clinically oriented, will also be held in the years 3 and 4, which are the rotation years. Family medicine and community-oriented practices will also be expanding the variety of practice and systems thinking component for a future generation of healthcare leaders. Ultimately, the goal of clinical clerkships is to fully support them in professional settings. The delegation of responsibilities is a feature of the clerkship model that contributes to the development of professional accountability as a competency.

During the clerkship year, the level of psychomotor training and skill acquisition will reach its peak. The learner's training basis for future references and exam evaluations will be a logbook, endorsing the full Clinical Skills process, including foundation, rotation, and clerkships.

### C. AFFECTIVE DOMAIN

#### PERLS:

The curriculum structure has explicitly incorporated affective training. The PERLS model was developed in order to provide the doctorate a robust, resilient, and morally motivated nature. The acronym PERLS represents the qualities of professionalism, ethics, research, and leadership. Professional development is completed by PERLS to enable the successful application of acquired knowledge and abilities. A formal education is necessary for a professional to be

socially responsible and to be able to assume the leadership role in healthcare for societal aspects like advocacy, equity or resources, and healthcare access. By including portfolio development and competency assessment into the training, the categorical method has been made possible.

PERLs will operate via portfolio development for the duration of the year. The process of developing a portfolio itself guarantees student-centered learning. The process of self-reflection, which is essential to portfolio construction, puts the student in a position to determine what kind of learning has to be met.

The relevant Medical Education department will keep a close eye on the spiral of PERLs. Nonetheless, other disciplines may and will be given the teaching sessions and mentorship process. For instance, the department of Family Medicine can provide advice on communication skills, and the faculty of Community Medicine & Public Health can assist with research. The Behavioral Sciences and Forensics departments can work together to address ethics. Students will be inspired to pursue leadership if institutional leaders take an active role in it and provide advice from accomplished alumni.

When and where necessary, the Faculty of Medical Education will conduct the teaching sessions in addition to overseeing the entire process.

The academic council, with assistance from the department of medical education, should define and enlist the type of evidence, activities to be completed, and learning environment for the acquisition of competences for the portfolio. Using the PERLs spiral, a "mentoring platform" may demonstrate the essence of affective learning. Thus, the development of a mentorship program at the relevant institutes is advised.

## STANDARDS OF SEVEN STARS COMPETENCIES

The goal of creating a medical curriculum is to create skilled, compassionate, and effective medical professionals who can offer patients high-quality care. A modular integrated curriculum that synchronizes the MBBS program results with the nationally designated seven-star doctor competences has been developed in order to accomplish this goal.

The following are the anticipated general competencies for a medical graduate:

1. Skillful
2. Knowledgeable
3. Community Health Promoter
4. Critical Thinker
5. Professional
6. Scholar
7. Leader and Role Model

"A seven-star physician" A Pakistani medical graduate ought to exhibit the different qualities listed under each competency. These qualities are the absolute necessities. The program's results are comparable to that the country's regulatory bodies have processed for MBBS graduates up to this point. These seven star competencies are translated into the session-specific learning objectives by the curriculum outcomes.

A Pakistani medical graduate who has become a "seven-star doctor" is supposed to exhibit a range of qualities within each competency, according to the national regulating authorities. These characteristics are deemed necessary and need to be demonstrated by the person both personally and professionally.



those

### 1. SKILLFUL (CLINICAL, COGNITIVE AND PATIENT CARE SKILLS)

Strong clinical abilities based in an understanding of patient-centered care are necessary for competent medical graduates. It should be possible for them to prove that they can:

- a. Conduct a focused history and use the bio psycho social model to identify the patient's risk factors. This should take into account the patient's environment, ethnicity, race, religion, gender, age, sexual orientation, occupation, and cultural customs.
- b. Conduct physical and psychological testing to detect specific issues, distinguish them from others, and look for deviations from physiological or anatomical norms.
- c. Create a tentative diagnosis together with a rationale, along with two to three most plausible differential diagnoses.
- d. To confirm the diagnosis or set yourself apart from others, order the necessary investigations and evaluate the results.
- e. Provide first aid, basic life support (including cardiopulmonary resuscitation), nebulization, wound care and dressings, oxygen therapy, taking swabs and smears, recording ECG, peak flow spirometry, blood sugar testing by glucometer, proctoscopy, urinary catheterization, urinalysis, and simple skin suturing are among the common procedures that ensure infection control when giving injections (I/M, I/V, S/C, and I/D).

- f. Discuss the benefits, drawbacks, indications, contraindications, restrictions, and complications of the available treatment methods, providing the best available evidence to support each one's use.
- g. Create management plans in collaboration with patients, guaranteeing their security through autonomous diagnosis and treatment of common health issues.
- h. Reporting drug interactions and adverse events, and using patient-safe, cost-effective, best-evidence ways.
- i. Understanding alternative medicine's impact on health and its availability as a choice.
- j. Taking into account the expectations, worries, and comprehension of the patients; figuring out how much the patients want to be involved in the decision-making process; and honoring their choices and rights.
- k. Identifying the patient, assisting with stabilization (first aid and basic life support), looking into the matter, and taking appropriate action (transport, triage, neglect, abuse).
- l. Being reachable while performing duties.
- m. Relieving suffering, including care provided at the end of life.
- n. Acknowledging and operating within one's own area of expertise, using the resources at hand, and, when necessary, seeking advice from colleagues while adhering to the consultation process.
- o. Using straightforward language, provide the patient and their family with advice and counsel regarding appropriate health promotion, rehabilitation, and support; prevention of risk factors for family members, including genetic counseling; immediate treatment and medications; complications; and prognosis.
- p. Inform the patient on the medical condition, the treatment options, the management strategy, self-care, and how to take prescribed medications and equipment.
- q. Acknowledge and consider diversity, equity, and equality issues, and that opportunities are lost if people don't think they're useful.
- r. Discuss and explain why different strategies to improve preventive and lessen social injustices have succeeded or failed.
- s. Prioritize work, manage time, and make efficient use of resources.
- t. Consistently monitor patient safety while implementing stringent infection control procedures.

## 2. KNOWLEDGEABLE (SCIENTIFIC KNOWLEDGE FOR GOOD MEDICAL PRACTICE)

This embodies the fundamental clinical and medical scientific knowledge needed to perform medicine. A graduate in medicine ought to be qualified to:

### A. DIFFERENTIATE BETWEEN:

- The body's normal and aberrant functioning and structure, as well as how to spot structural abnormalities in relation to certain illnesses.
- Homeostasis is maintained and disrupted in health and disease by normal and aberrant molecular, cellular, biochemical, physiological, and pathophysiological systems and processes (physical and mental).
- Distinguish between normal and abnormal human behavior, as well as the pathophysiological and psychopathological underpinnings of each disorder.  
effects of aging, development, and growth on the family, community, and individual throughout the life cycle of a person,
- Biological, social, and health-related risk factors,
- Differential etiological cause(s) and causative agents for certain accidents, illnesses, and diseases  
Therapeutic choices available to choose the best drug or treatment method for common diseases based on efficacy and pharmacodynamics.
- Recognizing the role of religious and cultural interventions in such settings, as well as other pertinent biochemical, pharmaceutical, surgical, psychological, and social therapies in acute and chronic disease, rehabilitation, and end-of-life care.

### B. RELATE:

- The impact and interplay of social, emotional, and physical environments on human health and illness.

- The course of acute and chronic, communicable and non-communicable diseases, their corresponding etiologic agents, and the impact of suitable interventions on the disease's progression

**C. APPLY:**

- Elements from evidence-based medicine to deliver the best care at the lowest possible cost.

**D. ENSURE:**

- Adherence to the law as it relates to rules and health care.
- Guidelines for patient safety.

**3. COMMUNITY HEALTH PROMOTER (KNOWLEDGE OF POPULATION HEALTH AND HEALTHCARE SYSTEMS)**

Medical graduates need to understand population health and healthcare systems in order to address issues related to population-based primary health care, which includes illness prevention and promotion with a focus on vulnerable groups. The graduates ought to be aware of their responsibilities and capable of acting appropriately to safeguard and advance public health. They ought to be capable of:

- Recognize their responsibility and be capable of acting appropriately to safeguard and advance the community's health.
- Discuss the relationship between the community's health and the impacts of lifestyle choices, genetic, demographic, environmental, social, cultural, economic, and psychological determinants of health.
- Take the necessary steps to avoid infectious diseases, non-communicable injuries, and health problems, as well as to safeguard, preserve, and improve the health of people individually, in families, and in communities.
- Assess national and international trends in the morbidity and mortality of socially significant diseases and injuries, the influence of environmental variables and migration on health, and the contribution of national and international health organizations to health status.
- Contribute effectively to the healthcare team and show that you understand and accept the duties of other medical professionals in the delivery of care to patients, groups, and communities.
- Use a multidisciplinary approach to health-promoting interventions, which call for inter-sectoral cooperation, shared accountability, and partnerships between the medical community and the population they serve.
- Apply the fundamentals of health systems, such as organizations, finance, policies, and cost-containment strategies to address the escalating expenses of healthcare, to the treatment of individuals, families, and populations.
- Encourage and put into place policies that support fairness in the availability and caliber of healthcare.

**4. CRITICAL THINKER (PROBLEM SOLVING AND REFLECTIVE PRACTICE)**

Problem solving requires the capacity to critically assess the knowledge, technology, and information currently in use as well as the ability to reflect on it. Graduates in medicine and dentistry ought to be able to show:

- Utilizing data that has been gathered and correlated from many sources.
- Critical data evaluation (decipher, examine, combine, assess, and decide)
- Making informed medical decisions by considering the most recent research and how it relates to various health conditions, while also effectively managing complexity, uncertainty, and likelihood.
- Consistently considering their work and the standards of medical practice.
- Starting, taking part in, or adjusting to change as needed to guarantee the benefit of the patients and the profession.
- Adaptability and an approach to problem-solving

- g. A dedication to quality control and oversight by involvement in chart audits and reporting of significant events in order to enhance medical practice and lower risk to oneself, patients, and the general public.
- h. Bringing up issues with patient safety and public risk.

## 5. PROFESSIONAL (BEHAVIOR AND PROFESSIONALISM)

Professional values, attitudes, and behaviors that reflect effective medical practice—such as a commitment to lifelong learning, empathy, cultural and religious sensitivity, accountability, probity, ethics, communication skills, and teamwork—are necessary for competent medical graduates. Graduates in medicine ought to be aware of the PMDC competencies. In order to uphold the public's trust, graduates should lead by example and serve as role models for their code of conduct, professionalism, and ideals both on and off the job. Their actions need to increase the public's confidence in the industry.

### A. LIFE-LONG SELF-DIRECTED LEARNER:

To be competent and apply new scientific information and skills to their daily medical practice, medical graduates must constantly learn new ones. Through personal development activities and a constant pursuit of new knowledge and technological advancements, they should exhibit a drive for lifelong learning and a commitment to continuing their medical education throughout their professional lives. A medical graduate ought to be qualified to:

- a. Show that you are always growing through consistent self-evaluation.
- b. Ask for input from peers. Up until re-licensure and recertification, this also entails a continual program of accredited, self-directed study and continuous medical education activities.
- c. Effectively manage information to use it for decision-making, self-learning, and medical problem-solving:
  - Accurately record and keep track of their practice's activities for analysis, improvement, and better patient care.
  - Get data particular to a patient out of a clinical data system.
  - Making use of information and communication technology in accordance with its advantages and disadvantages.
  - Look up, gather, arrange, and evaluate biological and health data from reliable sources and databases.
  - Compare patient data with information found in the literature to make decisions about diagnosis, treatment, prevention, or prognosis, as well as surveillance and status monitoring.
- d. Present proof of ongoing professional development (CPD) by participating in CPD programs in their major discipline or as a professional, or by seeking further training in particular subjects. Keeping up with professional development portfolios can help gather this evidence.
- e. Perform competently in the roles of trainer and mentor in order to evaluate, instruct, and give feedback to students, peers, and coworkers.
- f. React favorably to evaluations and comments.

### B. ALTRUISTIC AND EMPATHIC:

When planning or coordinating the best care, medical graduates should be able to exhibit the professional values of empathy, altruism, and cultural sensitivity by adhering to the following guidelines:

- Appropriate manner and attire.
- Accountability, kindness, understanding, truthfulness, and moral rectitude.
- Acceptance of differences.
- A compassionate approach to patients and medical issues.
- Prioritize the needs of the patient over your own.
- Put the safety of your patients first.
- Culturally aware and considerate of all religions.



- Special sensitivity towards vulnerable populations.

### C. ETHICAL:

Medical graduates should be able to demonstrate professional values of self and professional accountability, honesty, probity, and ethics.

- Without discriminating against anyone based on their age, gender, sexual orientation, color, race, ethnicity, national origin, culture, disability, illness, way of life, marital status, parenting status, religion, or beliefs.
- Make an ongoing effort to better both yourself and the healthcare delivery systems.
- Honor the patient's and the patient's family's opinions and concerns.
- Respect the values of informed consent, patient autonomy, beneficence, non-maleficence, fairness, and secrecy.
- When faced with ethical, legal, and professional dilemmas, such as those brought up by financial restrictions, the commercialization of healthcare, and scientific advancements, use moral reasoning to guide your decisions.
- Being responsible for maintaining professional and personal standards via audits and performance evaluations, as well as for establishing one's practice and interacting with pharmaceutical companies and other businesses.

### D. COLLABORATOR:

To effectively serve the interests of the patient, profession, and institution, the medical graduate should be able to demonstrate collaborative abilities by:

As an efficient team player, must recognize the significance of every role in the group.

Acting with respect and camaraderie among classmates, seniors, juniors, and the medical staff.

Constantly evaluating oneself and other people in light of their roles and acting appropriately.

Disseminating information and transferring responsibility correctly.

Stressing the importance of a cooperative yet analytical approach.

### E. COMMUNICATOR:

The medical graduates should be able to demonstrate:

- Nonverbal communication abilities**, such as attentive listening, empathy, and a compassionate demeanor; also, exhibiting thoughtful and tactful conduct when interacting with patients and their families, nurses, other healthcare providers, the community, the public at large, and the media.
- Clear and concise verbal communication**; counseling patients in a sensitive and effective manner; ensuring that patients and families have understood all information so that they can make informed decisions when consenting to any procedure or therapy; providing bad news in a sensitive, effective, and clear manner; handling angry or violent patients; handling difficult situations; and presenting information to patients.
- Proficiency in written and electronic communication**, along with neat, readable, precise, comprehensive, and succinct documentation of prescriptions, medical records, procedural and progress notes, discharge summaries, and referral letters that satisfies all pertinent legal requirements.
- Maintaining confidentiality** while weighing the risk to the public.
- Sharing knowledge and research results** to enhance medical treatment.

### 6. SCHOLAR AND RESEARCHER

The expectations for medical graduates are to exhibit an open-minded, creative, and research-focused mindset, as well as constructive criticism. The graduates ought to be qualified for:

- Determine a researchable issue and conduct a critical literature evaluation.
- Condense research topics and develop hypotheses.

- c. Determine which epidemiological study design and which biostatistics analytical tests are best suited to address the research topic.
- d. Gather, examine, and assess data; provide findings.
- e. Exhibit ethical behavior when carrying out research and when possessing intellectual property.

## 7. LEADER AND ROLE MODEL:

It is required of the medical graduates to have leadership potential and exemplary behavior in:

- ✚ Improving medical care.
- ✚ Improving instruction in medicine.
- ✚ Using methods and evidence from science to initiate, engage in, and adapt to change.
- ✚ Building the public's confidence in the medical and fields by serving as outstanding role models both at work and on the weekends.
- ✚ Taking on leadership positions when necessary.
- ✚ Acting as a leader in matters pertaining to society.

## COMPETENCIES REQUIRED IN A DOCTOR TO BE ACHIEVED AT UNDERGRADUATE LEVEL

Students should graduate from a five-year MBBS program with the following competencies—a combination of knowledge, skills, and attitude.

KNOWLEDGE	SKILLS	ATTITUDE
<ul style="list-style-type: none"> <li>Understand the diagnostic processes, clinical and analytical techniques used to treat prevalent health conditions in society.</li> </ul>	<ul style="list-style-type: none"> <li>Conduct comprehensive physical examinations, request and interpret diagnostic testing, create treatment plans that are appropriate, and deliver follow-up care.</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrating compassion for patients, honoring their individuality and autonomy, and being committed to providing excellent, patient-centered care that is grounded in the best available evidence.</li> </ul>
<ul style="list-style-type: none"> <li>Knowledge of the ethical and legal guidelines, including as those pertaining to informed consent, patient rights, and confidentiality, that control the practice of medicine.</li> </ul>	<ul style="list-style-type: none"> <li>To apply these concepts in clinical settings, appropriately record patient care, and handle any possible medicolegal issues.</li> </ul>	<ul style="list-style-type: none"> <li>To uphold ethical standards and respect patient autonomy in order to maintain the respect and confidence of both patients and the general public.</li> </ul>
<ul style="list-style-type: none"> <li>Comprehending the anatomy, physiology, and pathophysiology of common illnesses, together with the principles of evidence-based medicine and clinical decision-making.</li> </ul>	<ul style="list-style-type: none"> <li>To evaluate patient information from multiple sources, including imaging scans, laboratory testing, physical examinations, and clinical histories, and use this information to create a treatment plan and differential diagnosis.</li> </ul>	<ul style="list-style-type: none"> <li>Committed to provide patient-centered care that is based on the best available evidence and customized to meet each patient's needs and preferences.</li> </ul>
<ul style="list-style-type: none"> <li>Recognizing the concepts of disease prevention and promotion, as well as epidemiology, environmental health, social determinants of health, and behavioral and lifestyle factors impacting illness and injury.</li> </ul>	<ul style="list-style-type: none"> <li>To design and implement efficient preventive and management strategies, such as patient education, behavior modification interventions, and community-based therapies, as well as to conduct a full assessment of the health hazards to the individual and the community.</li> </ul>	<ul style="list-style-type: none"> <li>Committed to advancing health equity and addressing the social and environmental determinants of health, as well as an appreciation of the role that prevention plays in improving health outcomes and reducing healthcare costs.</li> </ul>
<ul style="list-style-type: none"> <li>Comprehend the principles behind surgical techniques, infection prevention, sterile technique, and patient safety.</li> </ul>	<ul style="list-style-type: none"> <li>To perform both standard and emergency surgeries, including CPR, births, and other life-saving procedures, using the appropriate equipment and methods, and to deal with challenges as they</li> </ul>	<ul style="list-style-type: none"> <li>Committed to provide high standards of care and patient safety as well as an awareness of the need of acting quickly and effectively in emergency situations.</li> </ul>

	arise.	
<ul style="list-style-type: none"> <li>• Having a solid understanding of anatomy, physiology, and pathophysiology as well as principles of patient evaluation, diagnosis, and treatment planning.</li> </ul>	<ul style="list-style-type: none"> <li>• To perform a complete and accurate physical examination, including a system review and a mental state evaluation, and to use the information gathered to develop and implement successful treatment plans for patients.</li> </ul>	<ul style="list-style-type: none"> <li>• Committed to provide patient-centered care delivery and recognition of the significance of conducting a thorough assessment to inform efficient treatment planning.</li> </ul>
<ul style="list-style-type: none"> <li>• Comprehend the principles of patient-centered care and evidence-based practice, as well as the pathophysiology, epidemiology, and current treatments for a range of acute and chronic health conditions.</li> </ul>	<ul style="list-style-type: none"> <li>• To design and carry out suitable patient-centered care plans for patients with common diseases</li> </ul>	<ul style="list-style-type: none"> <li>• Committed to provide patient-centered care and recognition of the significance of evidence-based practice in enhancing patient outcomes.</li> </ul>
<ul style="list-style-type: none"> <li>• Awareness of the fundamentals of good communication, including appropriate language use, nonverbal clues, and active listening strategies.</li> </ul>	<ul style="list-style-type: none"> <li>• To establish rapport and build trust through efficient communication with patients and other medical professionals by utilizing suitable language and nonverbal clues</li> </ul>	<ul style="list-style-type: none"> <li>• Committed to provide patient-centered care and recognition of the importance of good communication in fostering trust and promoting positive patient outcomes.</li> </ul>
<ul style="list-style-type: none"> <li>• Recognize the basic principles of medicine, such as the physical, emotional, social, and spiritual dimensions of health and wellbeing as well as the promotion, prevention, treatment, and rehabilitation of common diseases.</li> </ul>	<ul style="list-style-type: none"> <li>• To implement a holistic approach to patient care, encompassing the ability to recognize and address patients' physical, emotional, social, and spiritual requirements; developing and implementing patient-centered treatment plans incorporating preventive, promotional, curative, and rehabilitative components of care; and collaborating with interdisciplinary healthcare teams to provide comprehensive and integrated care.</li> </ul>	<ul style="list-style-type: none"> <li>• Committed to provide patient-centered care and knowledge of the need of attending to patients' physical, emotional, social, and spiritual needs in order to support the best possible outcomes for their health.</li> </ul>
<ul style="list-style-type: none"> <li>• Knowing pharmacology, including the side effects, mechanism of action, and contraindications of commonly prescribed drugs, and safe and effective prescribing techniques.</li> </ul>	<ul style="list-style-type: none"> <li>• To prescribe medications that are both safe and effective while taking into account factors specific to the patient, including as age, gender, comorbidities, past medication history, cost-</li> </ul>	<ul style="list-style-type: none"> <li>• To patient safety and a recognition of the need of offering safe and affordable medications. an understanding of the possible impact of medications on patient outcomes as well as the ability to</li> </ul>

	effectiveness, and potential side effects. being able to follow dosage, interaction, and contraindication guidelines as directed	track and manage medication-related interactions and adverse effects.
<ul style="list-style-type: none"> <li>• Understanding of human psychology, encompassing the principles of psychological assessment and intervention as well as the impact of social and psychological factors on health outcomes.</li> </ul>	<ul style="list-style-type: none"> <li>• To recognize and assess psychosocial factors that may impact a patient's health results, to develop and implement effective management plans incorporating social and psychological therapies, and to collaborate with mental health professionals to provide holistic care.</li> </ul>	<ul style="list-style-type: none"> <li>• Committed to provide evidence-based care that takes these elements into account as well as knowledge of how social and psychological factors affect health outcomes.</li> </ul>

## INSTRUCTIONAL STRATEGIES FOR INTEGRATED CURRICULUM

According to educational scholars, active learning is predicated on the ideas that learning is an active process and that individuals learn differently. In order to encourage active student participation, our college makes sure that a variety of instructional methodologies are applied. We use several techniques to deliver adequate clinical resources in accordance with World Federation for Medical Education norm 6.2 (Federation & Medical, 2020, p. 24).

The following teaching/learning methods are used to promote better understanding

- a. Interactive Lectures
- b. Small Group Discussion
- c. Case- Based Learning (CBL)
- d. Skills session
- e. Practicals
- f. Self-Directed Study
- g. Bedside Teaching
- h. Ward Rounds
- i. Online LMS Assignments

**a. INTERACTIVE LECTURES:** Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

**b. SMALL GROUP DISCUSSIONS (SGDS):** With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

**c. CASE-BASED LEARNING (CBL):** Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

**d. SKILL SESSIONS:** A skills lab is a learning resource center that offers a safe, non-threatening setting for trainees to practice clinical skills without endangering patient care or having unfavorable impacts. Under the supervision of academic members, students hone both basic and advanced nursing abilities in the skills lab. Videos and fictitious patients are used to practice a variety of skills. Some of the instructional strategies include interactive lectures, group discussions, skill demonstrations, practise on manikins, case studies, presentations, and films.

**e. PRACTICALS:** The Practical lab is a structured learning exercise that uses original or raw data to solve problems. It is a process that involves first-hand knowledge of items or information obtained through research or experimentation. Basic science practicals related to Anatomy, Physiology, Biochemistry, pharmacology and pathology have been schedule for student learning.

**f. SELF STUDY:** Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

**g. BEDSIDE TEACHING:** One of the best methods to acquire clinical and communication skills is through bedside teaching, which is an essential part of medical school. Teaching in a patient's presence is known as "bedside" teaching. This will significantly affect both the clinical and communicative skills.

**f. WARD ROUNDS:** Ward rounds, which are the primary means by which patients in the hospital are methodically examined by the multidisciplinary team, which includes students who review each patient under the supervision of their consultant and hospital trainees, are essential to the seamless operation of the patient journey. Each patient's present state and the following steps in their care plan are determined during the ward round.

✚ **ONLINE LMS ASSIGNMENTS:** An online assignment on the Ibn-e-Sina University moodle is uploaded according to the topic of the week. All assignments are checked by the teacher who has taken the lecture on the topic during the same week. The assignment covers enough material to include the requirement of the curriculum and syllabus, so the student is able to answer the annual examination questions by revising these notes (assignments) only. The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation goes a long way in improving the students' performance.

✚ **PTD (Post Test Discussion) Assignments:**

- a. Every student prepares a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- b. The concerned year moderator checks, assesses and grades PTD Assignment.
- c. Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class.

## ASSESSMENT

Muhammad Medical College adheres to the constructive alignment model, whereby the teaching methodologies and learning objectives are matched with the assessment. For the purpose of evaluating the formative tests for the MBBS program, our college has a clear assessment policy and an Exam Cell. However, the LUMHS administers the Summative Professional Examinations.

### ASSESSMENT POLICY

#### PURPOSE:

The purpose of this Assessment Policy is to outline assessment practices within the MMC MBBS program. The policy has been developed by the Department of Medical Education (DME) and it documents a clear format for all types of assessments. This document is intended to complement the LUMHS assessment policy that outlines the structure for conducting annual summative assessments and certification of MBBS degree.

#### GUIDING PRINCIPLES OF ASSESSMENT POLICY IN MUHAMMAD MEDICAL COLLEGE

- ✚ MMC has the responsibility to ensure to all the stakeholders that students have achieved the identified outcomes of our MBBS program.
- ✚ Good assessment requires a variety of methods; no single method is enough to assess learning outcomes across all domains.
- ✚ Feedback should be provided to students following all assessments to ensure that students identify gaps in their learning and faculty can review future curricular and assessment content.
- ✚ Each assessment instrument/method must be selected based on scientific evidence
- ✚ All assessment decisions must be made on rational arguments and scientific underpinnings. The faculty must be trained/ show competence in use of various assessment strategies.
- ✚ The quality of the entire assessment process must be ensured.
- ✚ The assessment process should be clear and transparent so that students know in advance the expectations (from students) and Consequences of the assessment.
- ✚ The Timing and Mode of each College & University Assessment must be explicitly defined in the assessment plan.
- ✚ Details of LUMHS exams are available in assessment Policy 2021 document

#### ROLES OF VARIOUS DEPARTMENTS IN ASSESSMENT:

Each department is responsible for student assessment within its domain. Students must be continuously assessed for the required knowledge, skills and attitudes through various examination procedures. Record of the conduct of these procedures should be maintained in the departments in the form of documented assessment plans.

There are two forms of Assessment:

1. Formative Assessment
2. Summative Assessment

#### 1. FORMATIVE ASSESSMENT

Formative assessment has been defined as “activities undertaken by teachers and by their students in assessing themselves that provide information to be used as feedback to modify teaching and learning activities. Formative assessment is a systematic process to continuously gather evidence about learning. Student performance in these assessments is used to identify a student's current level of learning and to adapt lessons to help the student reach the desired learning goal. The data are used to identify a student's current level of



learning and to adapt further teaching to help the student reach the desired learning goals. These assessments which do not necessarily carry Weightage in the final examination. Formative Assessment should be carried out throughout the blocks and clinical rotations using various strategies at the discretion of departments. Formative assessments must be accompanied by feedback to the students.

Formative assessments also inform students

- About what the learning goal is,
- Where the students are in relation to that learning goal,
- What can be done to improve subsequent performance

Formative assessment has two further types

- I. **Informal Formative Assessments:** Taken during or at the end of a teaching session to ensure student learning. Informal formative assessments do not need to be planned and can be taken spontaneously.
- II. **Formal Formative Assessments.** These are planned in the form of planned quizzes, assignments, class tests etc. The results of formal formative assessments must be shared with students. Formal formative assessments can be used to inform internal assessments if required.

## 2. SUMMATIVE ASSESSMENT

Summative tests are usually given at the conclusion of instructional units and are nearly always graded. The governing body for the Muhammad Medical College MBBS program's summative examinations at the end of the session is LUMHS.

After a summative assessment, if a student performs adequately, there is usually no additional formal learning on the examined subject—unless there is a cumulative final examination. Summative assessments serve the purpose of evaluating a student's performance or proficiency at a given moment as well as determining their eligibility for special programs (like gifted and talented education), if they should move on to the next grade, if they should receive career guidance, and if they meet the requirements for awards.

These are the assessments which are used to inform decisions about students' progress, promotion and graduation from the Muhammad Medical College MBBS program. Summative assessment decisions are made on the basis of both internal assessments scores and end of year assessment scores. Internal assessments will contribute 20%, each for theory and practical. Internal assessments include module exams, End of the block (EOB) exams, ward tests, OSCE/ OSPE, pre annual exams. Assessment strategies used in End of the block (EOB) exams & pre annual exams and professional assessments shall remain the same. The details of examinations for each professional exam are present in the LUMHS assessment policy.

The methods for summative assessment are as followed:

### A. Multiple Choice Questions

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for Modules MCQs is 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

### B. Short Essay Questions (SEQs):

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Modular exams includes 10 questions each carrying 10 marks.

- Time Duration for Essay type Modular exam is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

### C. OSPE / OSCE

- Each student is assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas.
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

### D. WEEKLY ONLINE TESTS

The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

- The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.
- It is somewhat different from the Annual or Semester Examinations in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.

### E. LONG CASES

As part of a lengthy case, a kind of clinical examination, a junior professional, trainee, or undergraduate student discusses a specific case with a senior professional. Each scenario in a lengthy case typically lasts at least 20 minutes, as the name suggests, though it may last longer depending on the circumstances.

### F. SHORT CASES

Every brief case starts with a stem, and you have seven minutes to complete the assessment. to establish a reliable diagnosis or aetiology for the issue the patient is presenting with.

## **INTERNAL ASSESSMENT**

Following are the policies for Internal Assessment for MBBS in Muhammad Medical College:

- All subjects will have internal assessments using the format specified.
- Ongoing internal evaluations will include assessments at the conclusion of every task, such as class exams, stages and sub-stages, and workbooks, as well as attitudinal evaluations from clinical and educational supervisors and assessments of clinical expertise.
- Knowledge, skill, and attitude assessments will be used to inform internal evaluations. Multiple Choice Questions, Short Essay Questions, Oral/Viva, and Practical/Clinical Exams are the methods that will be utilized to evaluate these domains.
  
- Admission forms for the annual examination and awards of internal assessment in each candidate's subject must be turned in to the Controller of Examinations. Internal evaluations submitted after the final exam has started won't be accepted.
- The results of the internal assessment must be turned in just once a year prior to the annual exam; the results will be taken into account for both the annual and supplemental exams. It is further highlighted that it is not acceptable to submit a revised or fresh assessment for a supplemental examination.
- The Department of Medical Education & Research and the relevant departments must keep accurate records of ongoing internal assessments. It will be sent to the Controller of Examinations in accordance with Ibn E Sina University specifications.

## ASSESSMENT/EXAMINATION POLICIES

### STATUES

- ✚ Muhammad College Mirpurkhas is affiliated with Liaquat University of Medical & Health Sciences, Jamshoro.
  - ✚ Annual examination will be conducted by the affiliating university as per PM&DC guidelines.
  - ✚ MDC will conduct periodic tests as well as end of the chapter tests in each subject on regular basis. Most of the tests will be conducted online, similar to the Muhammad Medical College formulation.
  - ✚ The Internal assessment will be based on attendance, test results, assignments as well as the logbook.
  - ✚ Students are required to be punctual.
  - ✚ Minimum 75% attendance is mandatory to appear in the Annual examination.
1. The First Professional BDS Examination shall be held at the end of first year BDS class
  2. Every candidate shall be required to study contents of Anatomy (including Histology), Physiology, Biochemistry, Oral Anatomy and Tooth Morphology, Behavioural Sciences, Community Medicine & Public Health, Pathology, Pharmacology & Therapeutics, Islamic Studies/Ethics and Pakistan Studies, Clinical skills and Professionalism, Ethics, Research and Leadership. The teaching and assessment shall be done in three modules.
  3. **Attendance** of lectures, tutorials and labs/OPD will be assessed separately and must be at least **75%** by end of session.
  4. **Weekly online Test:** Online test will be conducted every week comprising MCQ's from every topic taught during previous week.
  5. **Assignments:** Students will be given assignment in a group of 5 each, which will have to be submitted by **given due date**.
  6. **Quiz competition** performance.
  7. **Workbook/Logbook** should be completed, checked and certified.
  8. **SURVIVE: Online Class assessment test results** will also be incorporated in internal assessment.
  9. **ISLAMIC STUDIES/ETHICS AND PAKISTAN STUDIES**

The examination in Islamic Studies/Ethics and Pakistan Studies shall be as follows-

- I. One written paper of 100 marks in Islamic Studies/Ethics and Pakistan Studies having two components:
  - Islamic Studies/Ethics component having 60 marks, three (3) Long Essay Questions (LEOs) to be attempted out of five (5) Long Essay Questions (LEOs), having 20 marks each.
- II. Pakistan Studies component having 40 marks, two (2) Long Essay Questions (LEOS) to be attempted out of four (4) Long Essay Questions (LEQS), having 20 marks each.

Note: Islamic Studies for Muslims, and Ethics for Non-Muslims candidates.

## INSTRUCTIONAL STRATEGIES FOR TRADITIONAL MBBS CURRICULUM

Teaching in integrated curriculum is based on themes which unite different disciplines by blurring their boundaries. These themes allow teachers of different disciplines to meaningfully link content of their respective disciplines to enable students to see the big picture and appreciate relevance of their learning to their future practical life. Selection of tools for information transfer should ensure simultaneous input of different disciplines to enhance understanding and implementation of knowledge being taught. Different disciplines may need to have joint teaching sessions to help students in developing links between information coming from different subjects. While tools and methods mentioned in the traditional curricula above may continue to be used, the following tools are commonly used for module or theme-based teaching:

COGNITION:	PSYCHOMOTOR TRAINING	ATTITUDE OR BEHAVIOR
<ul style="list-style-type: none"> <li>• Joint or paired lectures by different disciplines</li> <li>• Problem based learning sessions</li> <li>• Case base learning sessions</li> <li>• Group work by students</li> <li>• Seminars</li> <li>• Tutorials</li> <li>• Videos</li> <li>• Clinical-pathological conferences</li> <li>• Symposiums</li> <li>• Webinars</li> <li>• Self-learning</li> <li>• Assignments</li> </ul>	<ul style="list-style-type: none"> <li>• Workshops</li> <li>• Skill labs</li> <li>• Cadaveric dissection</li> <li>• Models</li> <li>• Laboratory work</li> <li>• Bedside teaching</li> <li>• Emergency or casualty department</li> <li>• Operation theatres</li> <li>• Ward rounds</li> <li>• Community work</li> </ul>	<ul style="list-style-type: none"> <li>• Training</li> <li>• Videos</li> <li>• Role plays</li> <li>• Role modeling</li> <li>• Workshops</li> <li>• Group assignments</li> </ul>

### PROPOSED ASSESSMENT METHODOLOGIES FOR INTEGRATED MBBS CURRICULUM

#### OVERVIEW:

**“Lack of assessment and feedback, based on observation of performance in the workplace, is one of the most serious deficiencies in current medical education practice”.**

**John Norcini and Vanessa Burch 2007**

- Assessing the learner is the most important and difficult task for the tutor as students may be able compensate for sub-optimal teaching, but misaligned/poor assessment of their abilities can have longlasting effects on their personal and professional goals.
- Assessment is important not only for students but also for tutors, course/syllabi organizers, and the accrediting body (affiliated university/PM&DC).
- Assessment data informs important decisions related to whether learning outcomes have been achieved to allow progression to the next level of the course.
- More importantly, holistic assessment determines whether the potential graduate is competent and can practice as a safe doctor.
- In curricula which are theme or module based, each module needs to be followed by assessment to determine achievement of learning outcomes defined for that module.

- Assessment can be both summative and formative, thereby using it for grading of students as well as for providing students with feedback to enhance and improve their learning respectively. Knowledge, skills and attitude learned during the modules will need separate tools for assessment.

### **INTEGRATED ASSESSMENT**

- Integrated curriculum must be aligned with integrated assessment policies as it is an instrumental and integral part of curricular development.

### **ASSESSMENT PROCESS**

- Integrated assessment requires an in-depth analysis and understanding of the process. A good starting point for this is seeking to answer important questions, the answers of which will help form the basis of these assessments.

#### **1. Why assess the students?**

The purpose of assessment has to be clear and must include assessment for learning (as a learning strategy) and assessment of learning (summative assessment) for progression, remediation or promotion.

#### **2. Who should assess the students?**

The stakeholders should include program advisors/organizers, accrediting body, affiliated university, enrolled college, tutors, other health care professionals and students themselves, as well as standardized patients. PM&DC will oversee the assessment process to be implemented by medical universities in their affiliated colleges.

#### **3. What should be assessed?**

All the competencies must be assessed. The integrated curricular objectives must be aligned with the content to be assessed according to the context in which it is taught to students. The chosen assessing material will demonstrate what is valued for example knowledge of higher order thinking, clinical skills, behavior/attitudes and professionalism among other requirements.

#### **2. How the students should be assessed?**

Integrative assessment fosters a wide variety of tools which can be incorporated to assess students. The methods to be used should be:

- a. Reliable and consistent
- b. Valid in measuring what it is to measure
- c. Feasibility according to the resources available
- d. Assessment must have an impact on student learning
- e. Amenable to appropriate standard setting method

#### **3. When should the students be assessed?**

The enrolled colleges can devise their own strategy of number of internal assessments to be carried out within the prescribed timelines of the affiliated universities. The University may provide a template of the **“Course, Module or Rotation Objective Assessment Map”** in the assessment procedure document. E

each course will develop an examination blueprint, which will include all competencies and information on the methods, timing, and relative contribution to the final mark of all summative assessments, criteria for passing and remediation must be specified by the university. The final assessment by universities must be within timelines by the accrediting body.

#### **4. Where the students should be assessed?**

Internal and external assessments must conduct theory examination/practical in appropriate examination venues

## ASSESSMENT TOOLS

These tools should assess higher level of cognition like understanding, application, interpretation, analysis and decision making rather than simple recall. Different disciplines will need to develop these assessments together to judge holistic comprehension and ability to practice what is learnt by student. Tools of assessment which can be used for integrated curriculum are as following.

COGNITIVE DOMAIN	PSYCHOMOTOR DOMAIN	AFFECTIVE DOMAIN
1. MCQs 2. Extended matching questions (EMQs) 3. Short Answer Questions (SAQs) 4. Short Essay questions (SEQs) 5. Oral Examination	<p style="text-align: center;"><b>Formative Assessment:</b></p> a. OSPE b. Mini-Clinical Evaluation Exercise (Mini-CEX) c. Surgical DOPS (Directly Observed Procedural Skills) Case Based Discussion <p style="text-align: center;"><b>Summative Exam:</b></p> (OSCE) Practical Examination Direct Observation of clinical skills Long case Short case	The following tools can assess behaviour, communication skills, ethics and professionalism. <ol style="list-style-type: none"> <li>a. Interviews</li> <li>b. Direct observation of communication skill and behaviour</li> <li>c. OSPE/OSCE</li> <li>d. Portfolios</li> <li>e. Reflections (only for formative assessment)</li> </ol>

## EVALUATION OF CURRICULUM

### 1. INTRODUCTION

The Quality Enhancement Cell (QEC) of Muhammad Medical College was officially established in 2019. Improving the quality of instruction across all Muhammad Medical College programs is the primary objective of QEC. In order to ensure the caliber of academic programs and support teachers and administration in establishing high standards for education, self-evaluation is a crucial tool. In order to maintain and improve the caliber of higher education, QEC needs to ensure that procedures for quality assurance are established. Gaining insights from comments and applying information from program assessments is an ongoing activity that improves student learning.

In order to improve student learning, assessment is a methodical process for gathering, evaluating, and applying important quantitative and qualitative data and information regarding educational programs from a wide range of sources. This is to assess and track whether learning and academic standards are being reached or whether more work needs to be done to meet them. When evaluation data are applied to enhance student learning, the process comes to a close. The following elements must be present for the program assessment to be successful:

### 2. OBJECTIVES

- Facilitating the adoption of Quality Assurance methods and policies is the responsibility of QEC.
- Ensuring that educational programs meet national and international standards in terms of quality, relevance, and alignment.
- Working together with the faculty to examine, modernize, and adapt the curriculum to the ever-evolving needs of the healthcare industry.
- Developing reliable evaluation techniques to precisely gauge program results and student accomplishment.
- Working together with the faculty to review, modernize, and adapt the curriculum to the ever-evolving needs of the healthcare industry.
- MMC should implement quality-focused methods to raise stakeholder satisfaction and institutional performance.
- QEC is in charge of getting input from staff members, instructors, recent graduates, and students.
- Gathering and evaluating input from students in order to pinpoint areas that require development and enhance the fit between learning opportunities and student requirements.
- Ensuring adherence to rules, policies, and directives concerning healthcare and medical education.

### 3. CURRICULAR EVALUATION PROCESS

The following steps are involved in the curriculum evaluation process that a medical college's Quality Enhancement Cell (QEC) oversees:

**A. PLANNING AND PREPARATION:** This stage entails establishing the evaluation's goals and scope, creating a thorough plan that outlines the procedure, schedule, and responsible parties, and gathering pertinent documents such learning outcomes, curriculum materials, and assessments.

**B. DATA COLLECTION:** Utilizing a variety of techniques, such as document analysis, interviews, and surveys, is the second phase. To evaluate how well learning objectives, instructional strategies, and assessments line up, information is collected from a variety of sources, including employers, educators, alumni, and students.

**C. ANALYSIS AND ASSESSMENT:** In the third step, the data is analyzed to determine the curriculum's strengths, weaknesses, and areas for improvement. Teaching methods, assessment techniques, and curriculum content are assessed, and the curriculum's applicability in addressing current healthcare requirements and industry trends is determined. The curriculum violates best practices for medical education as well as national and international standards.

**D. RECOMMENDATIONS AND ACTION PLANS:** Creating well-founded recommendations based on evaluation findings is what this stage entails. To create a thorough action plan that outlines how to handle problems that have been identified for improvement based on analysis, evaluations, and suggestions.

**E. IMPLEMENTATION AND MONITORING:** All of the aforementioned processes are valuable when they are put into practice. This step entails implementing suggested curriculum modifications, regularly assessing the implementation's progress, and making any necessary improvements.



**TOTAL TEACHING HOURS FOR UNDERGRUATES MEDICAL EDUCATION MBBS  
CURRICULUM-PMDC**

Preclinical and Para-clinical Sciences	= 2875
Clinical Sciences (Medicine and allied)	= 1700
Clinical Sciences (Surgery and allied)	= 1625
Grand Total: 2875+1700+1625	= 6200 Hours

Subject	Hours
Anatomy	500
Physiology	450
Medical Biochemistry	250
Pharmacology & Therapeutics	300
Pathology	500
Community Medicine and Public Health	200
Basics of Radiology	25
Research and EBM	100
Pakistan Studies/ Ideology and Pakistan Constitution	25
Islamiyat /Ethics for Non-Muslim	25
Quran Kareem Introduction to Computer	50
Expository Writing Leadership Professionalism	25
Arts & Humanities (one course) Communication Skills	25
Co-curricular activities	25
	25
	25
	25
	200
Forensic medicine and toxicology	100
<b>Total</b>	<b>2875</b>
<b>SURGERY &amp; ALLIED</b>	
Subject	Hours
General Surgery	600
Anesthesia	50
Critical care	50
Orthopedics & Trauma	100
<b>Any three of the sub-specialties:</b> Urology, Neurosurgery, Thoracic Surgery, Paediatric Surgery, Plastic Surgery, Vascular Surgery	225 (75 hrs each)
Ophthalmology	150
Otorhinolaryngology	150
Gynaecology and Obstetrics	300
<b>Total</b>	<b>1625</b>
<b>MEDICINE &amp; ALLIED</b>	
Subject	Hours
General Medicine	600
Psychiatry & Behavioral Sciences	150
Emergency medicine & Critical Care	25
Dermatology	50
Cardiology	50

Pulmonology	50
Nephrology	50
Gastroenterology	50
Medical Oncology	25
Patient Safety Infection control	25 25
Family Medicine	75
Any three of sub-specialties: (For clinical rotations) Neurology, Endocrinology, Rheumatology, Geriatrics, Paediatric Cardiology	225 (75 each)
Paediatrics and Neonatology	300
<b>Total</b>	<b>1700</b>

**Total = 6200 Contact hours**

**TOTAL TEACHING HOURS FOR UNDERGRUATES MEDICAL EDUCATION MBBS  
CURRICULUM-MMC**

Hours	Subject	1st year	2nd year	3rd year	4th year	final year	Total
500	Anatomy	243	270				513
450	Physiology	200	201				401
250	Biochem	128	92				220
300	Pharma	28	13	140	120		301
500	Pathology	46	15	283	167		511
200	C M	19	11	49	159		238
25	Radiology	5	5	3	2	10	25
100	Research	15	11	23	51		100
15	Islamiyat	12	13				25
50	Quran Kareem	25	25				50
25	Computer	13	12				25
25	Leadership	4	1	2			7
25	Professionalism	18	3	2			23
25	Com: skills	13	6	13			32
25	Arts & Human						
25	English	15	10				25
100	F M	1		115			116
600	G. Surgery		2	158	123	415	698
50	Anesthesia	15	15	24		21	75
50	Critical Care	18	22	10		25	75
100	Orthopedic	20	20	20	6	34	100
75	Urology	2	17	8	12	11	50
75	Plas Surgery	10	25		12	3	50
75	Paediatric Surg						
150	Eye		4		161		165
150	ENT		19		147		166
300	Gynae/Obs	4	1	106	53	274	438
600	Medicine	5	1	159	157	321	643
75	Psychiatry	10	23		10	7	50
75	Beh: Sciences	8	7	19			34
50	Cardiac Surg			1			1
50	Spin Surgery				3	3	6
75	Rheumatology	20	11	19	10	15	75
50	Oncology						
50	Em Medicine				7	43	50
50	Dermatology	10	11	12	9	8	50
50	Cardiology	27		23			50
50	Pulmonology	25	10	8	7		50
50	Nephrology		28		10	12	50
50	Gastrology		28		22		50
300	Pediatrics	1	1	116	50	291	459
50	Beh Sc/Ethics	44	17	36			97
25	Med Oncology		1	12		12	25
25	patient saf	12	13				25
100	Family Med	10	15	30	20	25	100
25	Infec Control	10	15				25
	Total hour	1004	985	1355	1318	1530	6217

**FOUNDATION-I MODULE**  
**FIRST PROFESSIONAL MBBS**

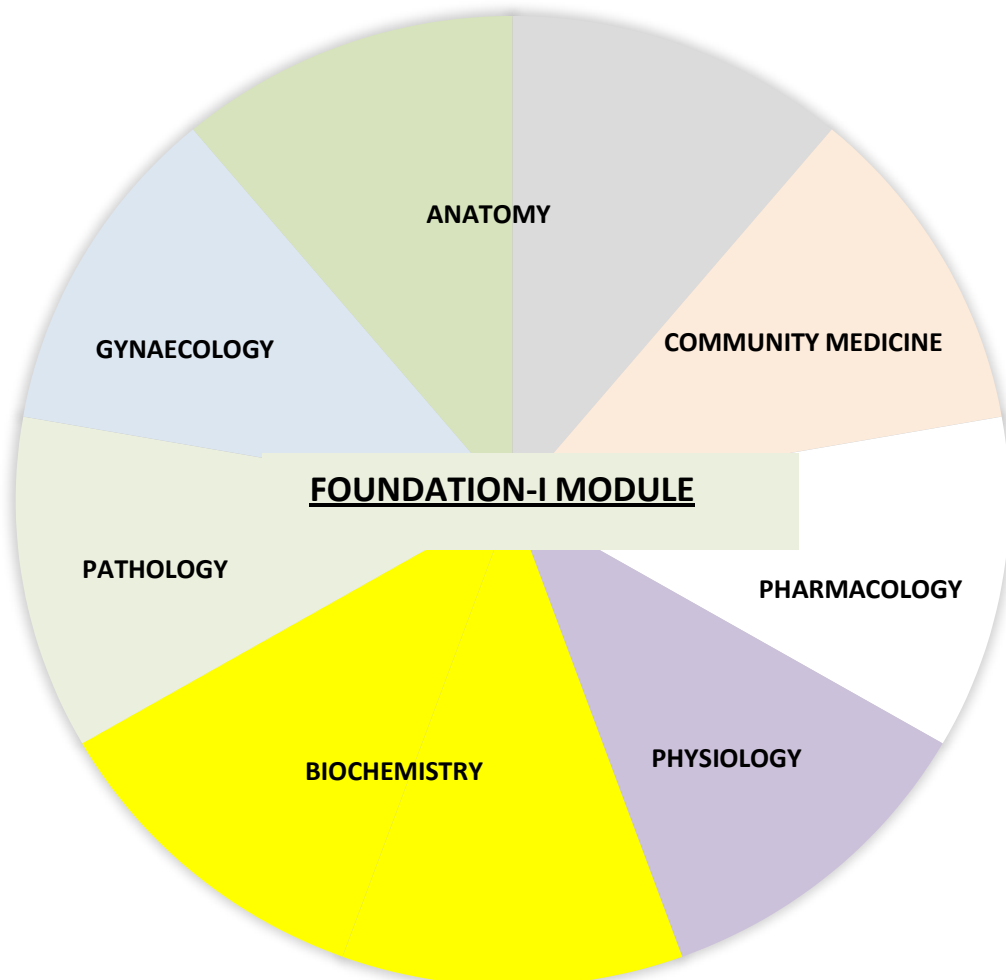


## **CURRICULUM FRAMEWORK OF FIRST YEAR MBBS**

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Foundation-I, Blood-I, CVS-I, Musculoskeletal-I and Respiratory-I Modules which links basic science knowledge to clinical problems.

### **INTEGRATING DISCIPLINES OF FOUNDATION-I MODULE**



**MODULE OVERVIEW**  
**FOUNDATION MODULE-I MODULE DETAILS**

<b>Course</b>	MBBS
<b>Year</b>	First professional
<b>Duration</b>	8 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

**FOUNDATION MODULE-I COMMITTEE**

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Dr. Saqib Baloch	Anatomy	Assistant Professor
2.	Dr. Shahab Hanif	Anatomy	Assistant Professor
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

**Module Objectives:**

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

**Achievement of objectives:**

- ✚ Focuses on information pertaining to examination policy, rules and regulations.

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Skills session
- Practicals
- Self-Directed Study

### **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

### **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

### **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

### **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

### **PRACTICALS:**

Basic science practical related to Anatomy, Physiology and Biochemistry have been schedule for student learning.

### **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION OF FOUNDATION MODULE

This is the foundation module. Welcome. This fascinating module is going to be a foundational piece of your future medical practice. This module's numerous interactive features are meant to make learning engaging and fruitful for you. Students will be encouraged to learn the fundamental organization of the human body in terms of structure, function, and biochemical properties in an integrated way during this module, i.e. We will study and evaluate a variety of foundational topics together, such as anatomy, physiology, biochemistry, pharmacology, and pathology. Additionally, you will learn how to combine fundamental knowledge with application in the clinic. By taking this method, you will be ready for the day when you work as a doctor and patients come to you with issues that don't fit neatly into a specific discipline. We have revised the fundamental science curriculum to center it around a few significant health-related scenarios—real-world events—that house officers are likely to face in order to support your integrated learning. For the purpose of understanding the material and improving your learning, you will be required to consider the situations and take part in case-based learning sessions. It will also assist you in concentrating on the goals you have set for yourself in relation to the lectures, exercises, and tutorials that are planned for this module.

**RATIONALE:** A basic prerequisite for all medical students is orientation in medical sciences with regard to health and illness. As a result, the integration of fundamental ideas that form the basis of the basic sciences and their relevance and utilization in the clinical sciences is the purpose of this module. Additionally, clinical skills are taught to students, including how to compassionately and effectively connect with patients and their families, comprehending their concerns and difficulties and how to address them in the future.

## LEARNING OBJECTIVES

### General learning Objectives:

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

1. To acquaint students with the problem-based curriculum and the MBBS integrated modular system.
2. To acknowledge the importance that several disciplines play in the study of the human body, its functions, and the course of disease.
3. To explain a cell's structure, purpose, and metabolic makeup.
4. To uphold discipline inside the college in order to preserve an atmosphere that is favorable to learning.
5. To appropriately adhere to the college's established norms Overall educational goals

### Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Familiarize with the MBBS system-based curriculum
2. Recognize the role of different disciplines in studying human body and its diseases.
3. Describe the structure, function and biochemical composition of cell.
4. Describe the cell division, its types and genetic material along with its clinical correlation.
5. Describe the basic organization of human body.
6. Explain the maintenance of homeostatic mechanism.



7. Describe the various stages of pre embryonic human development and correlate them with various malformations.
8. Describe the importance of buffer and PH system.
9. Describe various cellular adaptations during cell growth, differentiation and cell injury.

**Skills / Psychomotor Domain:**

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

1. Completing actual tasks in an orderly and secure manner as directed
2. Accurately make and document observations.
3. Describe the basic laboratory techniques and use of microscope.
4. Follow the basic laboratory protocols.
5. Perform biochemical analysis of carbohydrates.

**Attitude / Affective Domain:**

It involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

1. Follow the basic laboratory protocols.
2. Participate in class and practical work efficiently.
3. Maintain discipline of the college.
4. Follow the norms of the college properly.
5. Communicate effectively in a team with colleagues and teachers.
6. Demonstrate professionalism and ethical values in dealing with patients, cadavers, colleagues and teachers.
7. Communicate effectively in a team with colleagues and teachers.
8. Demonstrate the ability to reflect on the performance.

**Outcomes of Foundation-I Module**

1. Knowledgeable
2. Skillful
3. Community Health Promoter
4. Problem-solver
5. Professional
6. Researcher
7. Leader and Role Model

## THEMES FOR FOUNDATION-I MODULE

S. NO	Theme	Duration
1	Introductory Week	1 week
2	Cell structure, Chemistry and Function	1 week
3	Cellular interactions, Cell injuries, Cellular responses and Adaptations	1 week
4	Body fluids: Composition, Function & Homeostasis	1 weeks
5	Macromolecules: Fundamental tissues/systems of the human body	2 weeks
6	Fundamental tissues/systems of the human body	1 weeks
7	Development, Differentiation and Growth	1 weeks
8	Genetics and Developmental anomalies	1 weeks

**SPECIFIC LEARNING OBJECTIVES THEME WISE**

<b>INTRODUCTORY WEEK</b>				
<b>S. NO</b>	<b>LEARN3NING OBJECTIVES</b>	<b>TOPIC</b>	<b>TEACHING STRATEGY</b>	<b>ASSESSMENT</b>
<b>ANATOMY</b>				
<b>1</b>	State the history of subject Anatomy including its various branches and practical applications of Anatomy as a foundation in different fields of medicine	<b>Int -S1-Ana-G1</b> Introduction to the subject of Anatomy and its subdivisions	Interactive Lecture	BCQs, SEQs
<b>2</b>	Comprehend the exact location of dissected /prosected part /organ of human body with respect to various terms of positions, direction, and body planes	<b>Int -S1-Ana-G2</b> Anatomical position, , Anatomical planes & terms of position	Interactive Lecture	BCQs, SEQs
<b>3</b>	Interpret the movements of different parts of human body the knowledge of various terms of movement.	<b>Int -S1-Ana-G3</b> Terms of movements	Interactive Lecture	BCQs, SEQs
<b>4</b>	Explain the appendicular and axial skeleton	<b>Int --S1-Ana-G4</b> Introduction to the parts of axial and appendicular skeleton	Interactive Lecture	BCQs, SEQs
<b>PHYSIOLOGY</b>				
<b>5</b>	Define physiology and Enumerate the branches of physiology	<b>Int -S1-Phy-1</b> Introduction to Physiology	Interactive Lecture	BCQs, SEQs
<b>BIOCHEMISTRY</b>				
<b>6</b>	Define biochemistry and Discuss the role of biochemistry in medicine	<b>Int -S1-Bioc-1</b> Introduction to biochemistry and its implication in medicine	Interactive Lecture	BCQs, SEQs
<b>PATHOLOGY</b>				
<b>7</b>	Define the pathology Enumerate the different branches of pathology Describe the terminologies used in Pathology	<b>Int -S1-Path-1</b> Introduction to pathology	Interactive Lecture	BCQs, SEQs
<b>PHARMACOLOGY</b>				
<b>8</b>	Define the pharmacology and role of pharmacology in medicine Discuss pharmaco- dynamics and pharmacokinetics	<b>Int -S1-Pharm-1</b> Introduction to pharmacology and its implication in medicine	Interactive Lecture	BCQs, SEQs
<b>COMMUNITY MEDICINE</b>				

9	<p>To define different definition of public health/Community Medicine</p> <p>To learn evolution of public health, it importance in today's world</p> <p>To discuss basic functions of Public health/community Medicine</p> <p>To define the difference between clinical and community medicine</p> <p>To discuss the Non-Governmental organizations, International agencies and National Programs of Pakistan</p>	<p><b>Int -S1-COM-M-1</b> Introduction to Community Medicine &amp; public Health</p>	Interactive Lecture	BCQs ,SEQs
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### FORENSIC MEDICINE

10	<p>Define Forensic Medicine, Forensic pathology and state Medicine</p> <p>Know the branches and the history of Forensic Medicine briefly</p> <p>Discuss the scope of Forensic Medicine in practice</p> <p>Identify the essential facilities for medico legal investigation.</p> <p>Define medical jurisprudence and differentiate it from Forensic medicine</p>	<p><b>Int-S1-FOR-M-1</b> Introduction to forensic Medicine and Toxicology</p>	Interactive Lecture	BCQs, SEQs
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### MEDICAL EDUCATION

11	<p>Describe the curriculum and modules under implementation</p> <p>Describe the use of study guides (not to be assessed)</p> <p>Differentiate between various teaching &amp; learning strategies</p> <p>Enlist various assessment tools, and assessment policy</p>	<p><b>Int -S1-MED-E-1</b> Curriculum structure teaching learning strategies</p>	Interactive Lecture	Workplace based assessment
12	<p>Describe various study skills strategies</p>	<p><b>Int -S1-MED-E-2</b> Study skills strategies</p>	Interactive Lecture	Workplace based assessment

## THEME 1: CELL STRUCTURE, CHEMISTRY AND FUNCTIONS

SR. NO	LEARNING OBJECTIVES	TOPICS	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
13	<p>Describe the basic structure and functions of cell membrane</p> <p>Describe the basic structure and functions of the Nucleus.</p>	<p>Fnd-S1-Ana-H1 Cell structure and function (Membrane structure and the Nucleus)</p>	Interactive Lecture	BCQ, SEQ

14	Describe the structural Organization of different organelles of a cell. (Endoplasmic Reticulum, Golgi Apparatus, Ribosomes, Centrioles, Mitochondria, Lysosomes, Peroxisomes)	Fnd-S1-Ana-H2 Cell Organelles	Demonstration	BCQ, SEQ
15	Identify the different parts of the light microscope. Discuss the functions of these parts How to use the light microscope to Visualize a slide.	Fnd-S1-Ana-H3 Parts of Light microscope	Interactive Practical	BCQ, SEQ, OSPE
<b>PHYSIOLOGY</b>				
16	Describe the Functional arrangement of different level of organization and General structure, physiology and composition of cell, tissues, organs, organ systems, cell nutrition, capillary and venules.	Fnd-S1-Phy-2 Functional arrangement of different levels of organization and General structure and composition of Cell.	Interactive lecture	BCQ, SEQ, OSPE
17	Define the Functional organization of different components of a cell and its organelles Describe the functions of lysosomes & peroxisomes, Endoplasmic Reticulum, Golgi complex	Fnd-S1-Phy-3 Cell Organelles-I (Lysosomes, Peroxisomes, Endoplasmic Reticulum, Golgi complex)	Interactive lecture	BCQ, SEQ, OSPE
18	Describe the functions of mitochondria, Its special features & its role in generation of ATP Describe the functions of ER, Golgi apparatus, Ribosomes , and cytoskeleton.	Fnd-S1-Phy-4 Cell organelles-II Mitochondria, Microtubules & Microfilaments, Ribosomes Vaults Centromere.	Interactive lecture	BCQ, SEQ, OSPE
19	Give structure & functions of Nucleus	Fnd-S1-Phy-5 Nucleus & its functions	Interactive lecture	BCQ, SEQ, OSPE
20	Show the Parts and Functions of the Microscope	Fnd-S1-Phy-6 Introduction to Microscope	Interactive Practical	BCQ, SEQ, OSPE
<b>BIOCHEMISTRY</b>				
21	Describe the chemical structure and significance of mitochondria, functions and location of enzymes for metabolic pathways & chemical reactions that occur in mitochondria.	<b>FND-S1-Bioc-2</b> Mitochondria: Structure, functions & location of enzymes for metabolic pathways	Interactive Lecture	BCQ, SEQ, OSPE
22	Describe the significance of Protection protocols to keep yourself safe during Biochemistry laboratory work. To know the importance of chemicals and reagents in the different reactions of biomolecules Introduction to techniques of using glassware and handling of biochemical instruments during laboratory work.	<b>Int-S1-Bioc-3+4+5</b> Laboratory Hazards & Protection Protocols Chemicals and reagents Use of glassware & Instruments for laboratory work	Practical	BCQs, SEQs
<b>PATHOLOGY</b>				
23	Define Hypertrophy, Hyperplasia, Atrophy and Metaplasia. Enlist physiological and pathological mechanisms of cellular adaptation	FND-S1-path-2 Cellular adaptations	Interactive Lecture	BCQ, SEQ, OSPE
<b>COMMUNITY MEDICINE</b>				

24	To understand the concept of disease and health To discuss the Spectrum of health and Iceberg phenomenon of disease To understand the Health Dimensions To understand determinants of health with special focus on social determinants of health (SDH)	Health	FND-S1-CM-2	Interactive Lecture	SEQ OSPE
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## THEME 2: CELLULAR INTERACTIONS, CELL INJURIES, CELLULAR RESPONSES AND ADAPTATIONS

SR. NO.	OBJECTIVES	TOPICS	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
25	Describe components of cell surface modifications and junction complex	<b>FND-S1-Ana-H-4</b> Cell surface modifications and cell Junctions	Interactive Lecture	BCQs, SEQs
26	Differentiate between normal and abnormal cell division and their consequences	<b>FND-S1-Ana-E-1</b> Cell cycle: Mitosis and Meiosis cell divisions	Interactive Lecture	BCQs, SEQs
27	Enlist steps of tissue processing. Define the artifacts. Know the basic histological stains. Define H&E Staining.	<b>FND-S1-Ana-H-5</b> Slide preparation and the H&E Staining	Interactive Practical	BCQs, SEQs, OSPE, Viva
<b>BIOCHEMISTRY</b>				
28	To know the difference between all types of solutions and there quantities in different chemicals reaction.	<b>FND-S1-Bioc-6</b> Solutions, concentration expression (Percent solutions, Molarity, Molality, Normality)	Interactive Practical	BCQ, SEQ, OSPE, Viva
<b>PHYSIOLOGY</b>				
29	Explain composition and basic structure of cell membrane, its functional importance and adaptation	<b>FND-S1-Phy-7</b> Plasma membrane & its structure and function	Interactive Lecture	BCQs, SEQs, OSPE
30	Describe types and process of transport across the membrane and their effects.	<b>FND-S1-Phy-8</b> Types of transport Simple Diffusion	Interactive. Lecture	BCQs, SEQs, OSPE
31	Describe the Transport across cell membrane via protein mediated method. Describe the process of osmosis	<b>FND-S1-Phy-9</b> Protein mediated transport Facilitated diffusion Osmosis	Interactive. Lecture	BCQs, SEQs, OSPE
32	Explain the physiological mechanism and types of transport. (Passive & Active)	<b>FND-PHY-10</b> Active transport Primary active transport Secondary active transport Bulk transport	Interactive lecture	BCQs, SEQs, OSPE
33	Describe the membrane potential its development & maintenance of resting membrane potential. Explain Permeability of cell membrane Explain the Propagation of action potential – I and its ionic basis	<b>FND-PHY-11</b> Resting membrane Potential Graded potential, Factors affecting membrane potential	Interactive lecture	BCQs, SEQs, OSPE
34	Discuss action potential Give mechanism of propagation of action potential & its ionic changes	<b>FND-PHY-12</b> Action potential	Interactive lecture	BCQs, SEQs, OSPE

35	Types And Methods	<b>FND-PHY-13</b> Sterilization	Interactive Practical	BCQs, SEQs, OSPE
<b>PATHOLOGY</b>				
36	Enumerate the Causes of Cell Injury Discuss the types of cell injury Describes the sequential morphologic changes in Cell Injury	<b>FND-S1- Path-3</b> Cell injury	Interactive Lecture	BCQs, SEQs, OSPE
37	Define Necrosis and its type Describe the nuclear and cytoplasmic features of necrosis.	<b>FND-S1- Path-4</b> Necrosis	Interactive Lecture	BCQs, SEQs, OSPE
38	Define Apoptosis Enumerate pathological and physiological Causes of Apoptosis Describe Biochemical Features and Mechanism of Apoptosis	<b>FND-S1- Path-5</b> Apoptosis	Interactive. Lecture	BCQs, SEQs, OSPE
39	Demonstrate gross and microscopic features of cellular adaptations and Necrosis	<b>FND-S1-Path-6</b> Cell pathology	Interactive Practical	BCQs, SEQs, OSPE
<b>PHARMACOLOGY</b>				
40	Enlist different routes of drug administration & describe the merits & demerits of the different routes of drug administration	<b>FND-S1- Pharm-2</b> Routes of drug administration (entral, Par-entral) drugs	Interactive Lecture	BCQs, SEQs, OSPE
41	Describe drug absorption & factors affecting rate and extent of drug absorption	<b>FND-S1- Pharm-3</b> Absorption: Process of absorption & Factors modifying drug absorption	Interactive Lecture	BCQs, SEQs, OSPE
<b>COMMUNITY MEDICINE</b>				
42	To learn about health delivery system of Pakistan. To define the primary health care (PHC) and its elements. To discuss the Alma Ata Declaration and Universal Health Care (UHC), Astana declaration.	<b>FND-S1-CM-3</b> Health Delivery system of Pakistan (PHC)	Interactive Lecture	BCQs, SEQs, OSPE

### THEME 3: BODY FLUIDS: COMPOSITION, FUNCTION & HOMEOSTASIS

S. NO	OBJECTIVES	TOPICS	TEACHING STRATEGY	ASSESSMENT
<b>PHYSIOLOGY</b>				
43	Describe the divisions of body fluids into intracellular, extracellular and intravascular compartments.	<b>FND-S1- Phy-14</b> Body fluids	Interactive Lecture	BCQs, SEQs, OSPE
44	Recognize the physiochemical aspects for the maintenance of homeostasis, ECF, Internal environment and role of various body systems in homeostasis.	<b>FND-S1- Phy-15</b> Homeostasis	Interactive Lecture	BCQs, SEQs, OSPE
45	Explain the concepts of homeostasis and its regulation through feedback mechanism. Negative feedback, Positive Feedback, Feed-forward Stress & disease	<b>FND-S1- Phy-16</b> Mechanisms of Homeostasis	Interactive lecture	BCQs, SEQs, OSPE
46	introduction of physiology experiments and introduction to power lab.	<b>FND-S1- Phy-17</b> Power lab	Interactive Practical	BCQs, SEQs, OSPE

<b>PHARMACOLOGY</b>				
47	Explain bioavailability & describe factors affecting bioavailability	<b>Fnd-S1-Phrm-4</b> Bioavailability +half-life + 1st Pass Effect	Interactive Lecture	BCQs, SEQs, OSPE
48	Describe the distribution of a drug through various body compartments & explain clinical significance of Vd	<b>Fnd-S1-Phrm-5</b> Drug Distribution & Reservoir	Interactive Lecture	BCQs, SEQs, OSPE
<b>PATHOLOGY</b>				
49	List and define causes of intracellular accumulation Discuss the role of Intracellular Accumulations in metabolic derangements of cell.	<b>FND-S1- Path-7</b> Intracellular Accumulations	Interactive Lecture	BCQs, SEQs, OSPE
50	Define and describe pathological calcification. Discuss Dystrophic and metastatic calcification	<b>FND-S1- Path-8</b> Calcification and Pigmentation	Interactive Lecture	BCQs, SEQs, OSPE
51	Define cell aging Discuss events in Cellular Aging	<b>FND-S1- Path-9</b> Cell Aging	Interactive Lecture	BCQs, SEQs, OSPE
52	Define edema Describe Pathophysiology of edema	<b>FND-S1- Path-10</b> Edema	Interactive Lecture	BCQs, SEQs, OSPE
53	Define Hemorrhage, Hyperemia, Congestion Describe their causes and pathophysiology	<b>FND-S1- Path-11</b> Hemorrhage, Hyperemia, Congestion	Interactive Lecture	BCQs, SEQs, OSPE
<b>COMMUNITY MEDICINE</b>				
54	To understand the Natural history of diseases. To discuss the ice berg phenomenon.	<b>FND-S1-CM-4</b> Natural history of diseases & ice berg phenomenon	Interactive Lecture	BCQs, SEQs, OSPE

#### THEME 4: MACROMOLECULES/ FUNDAMENTAL TISSUES/SYSTEMS OF THE HUMAN BODY

<b>S. NO</b>	<b>OBJECTIVES</b>	<b>TOPICS</b>	<b>TEACHING STRATEGY</b>	<b>ASSESSMENT</b>
<b>ANATOMY</b>				
55	Define the divisions & functions of skeletal system. Classify bones on the basis of shape, development, region, structure and microscopic features. Gross structure of adult long bone. Parts of young long bone.	<b>FND-S1- Ana-G5</b> The skeletal system (classification of bones.)	Demonstration	BCQs, SEQs, OSPE, Viva, Feedback
56	Describe general concepts of development, ossification and blood supply of bones	<b>FND-S1- Ana-G6</b> Bone development (ossification), Blood supply of long bones	Demonstration	BCQs, SEQs, OSPE, Viva, Feedback
57	Define the joints. Classify joints on the basis of structure, regions and functions, Discuss the characteristics of synovial joints and classify on basis of structure & movement	<b>FND-S1- Ana-G7</b> The joints and its types. The synovial joints.	Demonstration	BCQs, SEQs, OSPE, Viva
58	Define dislocation, sprain and inflammation of joints	<b>FND-S1-Orth-1</b> Fractures	Interactive Lecture	Feedback



59	Describe the microscopic features of epithelial tissues, Explain their functional importance and their surface modifications	<b>FND-S1- Ana-H-0s6</b> The Epithelium	Interactive Lecture	BCQs, SEQs, OSPE, Viva
60	Discuss gross and microscopic features of exocrine glands	<b>FND-S1- Ana-H-07</b> Exocrine glands	Interactive Lecture	BCQs, SEQs, OSPE, Viva
61	Define the composition of the connective tissue. Describe and differentiate the microscopic features of the different types of the connective tissues	<b>FND-S1- Ana-H-08</b> Histology of Connective tissue	Demonstration	BCQs, SEQs, OSPE, Viva
62	Demonstrate histological features of cartilage. Describe the types of the cartilage.	<b>FND-S1- Ana-H-09</b> The cartilage and its types	Demonstration	BCQs, SEQs, OSPE, Viva
63	Define and identify the different types of the epithelium on the light microscope	<b>FND-S1- Ana-H-10</b> Epithelium	Interactive Practical	BCQs, SEQs, OSPE, Viva
<b>PHYSIOLOGY</b>				
64	Identify the indications of hand washing / Demonstrate the protocols and steps of hand washing in sequential manner	<b>Fnd-Phy-18</b> Hand washing	Interactive Practical	BCQs, SEQs, OSPE, Viva
<b>BIOCHEMISTRY</b>				
65	Apply the basic knowledge of carbohydrates in chemistry for health	<b>FND-S1- Bioc-07</b> carbohydrates : introduction , classification and its biochemical significance	Interactive lecture	BCQs, SEQs, OSPE, Viva
66	Describe the Biochemical structure of polysaccharides with its clinical importance	<b>FND-S1- Bioc-08</b> Monosaccharides: Classification, Structure, Functions	Interactive lecture	BCQs, SEQs, OSPE, Viva
67	Discuss functions of carbohydrates in cell membrane, energy provision and nutrition supply to different parts of body	<b>FND-S1- Bioc-09</b> Chemical Properties & Derivatives of Monosaccharides & their biochemical significance in biological systems.	Interactive .lecture	BCQs, SEQs, OSPE, Viva
68	Describe Different isomers of monosaccharides e.g Glactose, mannose, fructose, dextrose.	<b>FND-S1- Bioc-10</b> Isomerism: Structural & Optical Isomerism in carbohydrates & their biochemical significance.	Interactive lecture	BCQs, SEQs, OSPE, Viva
69	Explain Structure of disaccharides and oligosaccharides	<b>FND-S1- Bioc-11</b> Glycosidic Linkage, Biologically important disaccharides and oligosaccharides	Interactive lecture	BCQs, SEQs, OSPE, Viva
70	Describe classification of polysaccharides and their functions.	<b>FND-S1-Bioc-12</b> Polysaccharides: Classification, Structure & Functions of Homopolysaccharides	Interactive lecture	BCQs, SEQs, OSPE, Viva
71	Detection of an unknown carbohydrate in a given fluid	<b>FND-S1-Bioc-13</b> Molisch's Test, Iodine	Interactive Practical	OSPE, Viva

		Test, Benedict's Test		
72	To understand the all detection of carbohydrates by different tests	<b>FND-S1-Bioc-14</b> Selivanoff's Test, Barfoed's Test, Osazone Test	Interactive Practical	OSPE, Viva
73	Classify amino acids on the basis of their polarity, charge & nutritional significance.	<b>FND-S1- Bioc-15</b> Classification of Amino Acids on the basis of their structure, Properties, Nutrition and their role in human metabolism	Interactive lecture	BCQs, SEQs, OSPE, Viva
74	Describe physico-chemical classification of proteins. What is functional classification of proteins? How proteins are classified on the basis of their axial ratio?	<b>FND-S1- Bioc-16</b> Classification of Proteins on the basis of their structures, functions & chemical reactions.	Interactive lecture	BCQs, SEQs, OSPE, Viva

75	Describe the structural levels of proteins and their important biochemical features.	<b>FND-S1- Bioc-17</b> Structural Organization of Proteins	Interactive .lecture	BCQs, SEQs, OSPE, Viva
76	Tests for detection of unknown amino acid/protein in a given fluid	<b>FND-S1- Bioc-18</b> General Tests for Proteins & Amino acids	Interactive Practical	OSPE, Viva
77	To understand the all detection of proteins by color reaction tests	<b>FND-S1- Bioc-19</b> Color Reaction Tests of Proteins	Interactive Practical	OSPE, Viva
78	To understand the all detection of proteins by Separation tests	<b>FND-S1- Bioc-20</b> Separation Tests	Interactive Practical	OSPE, Viva
79	To understand the all detection of proteins by precipitation tests	<b>FND-S1- Bioc-21</b> Precipitation Tests	Interactive Practical	OSPE, Viva
80	Discuss the significance of Lipids for balanced diet and Health	<b>FND-S1- Bioc-22</b> Lipids: Classification & Biochemical significance.	Interactive lecture	BCQs, SEQs, OSPE, Viva
81	Solubility, Oily nature, Emulsification, Saponification Tests	<b>FND-S1- Bioc-23</b> Tests for Lipids	Interactive Practical	OSPE, Viva

#### PHARMACOLOGY

82	Explain biotransformation & enlist phase I and phase II biotransformation reactions	<b>Fnd-S1-Phrm-6</b> Drug Biotransformation Phase I Reactions	Interactive lecture	BCQs, SEQs, OSPE, Viva
83	Explain biotransformation & enlist phase I and phase II biotransformation reactions	<b>Fnd-S1-Phrm-7</b> Drug Biotransformation Phase II reactions	Interactive lecture	BCQs, SEQs, OSPE, Viva

#### COMMUNITY MEDICINE

84	To understand the concept of disease causation Ecological traid, Web causation To define the level of prevention Primordial,	<b>Fnd-S1-CM-5</b> Level of Prevention	Interactive lecture	BCQs, SEQs,
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Primary Secondary ,Tertiary			
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### THEME 5: FUNDAMENTAL TISSUES/SYSTEMS OF THE HUMAN BODY

S. NO	OBJECTIVES	TOPICS	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
85	Define the parts of the skin Define the appendages of the skin. Recognize the role of Component tissues of Skin and fascia in Support and Protection	<b>Fnd-S1-Ana-G-08</b> Introduction to Integumentary system (Skin and fascia)	Demonstration	SBQs, SEQs, OSPE
86	Explain the types and functions of blood vessels. (Arteries, veins, capillaries and Anastomosis)	<b>Fnd-S1-Ana-G-09</b> Blood vascular system	Interactive Lecture	SBQs, SEQs, OSPE
86	Integrate the function of Defense with the structure of lymph nodes and lymphatics	<b>Fnd-S1-Ana-G-10</b> Introduction to lymphatic system	Interactive Lecture	SBQs, SEQs, OSPE, Viva
87	Define the types of muscles Describe the internal structure of , muscle action, nerve supply and naming of skeletal muscles Define smooth and cardiac muscles.	<b>Fnd-S1-Ana-G-11</b> Definition and classification of muscles	Demonstration	SBQs, SEQs, OSPE, Viva
88	Describe the Nervous system and classification of NS Define the central and peripheral nervous system	<b>Fnd-S1-Ana-G-12</b> Introduction to Nervous System	Demonstration	SBQs, SEQs, OSPE
89	Describe the structure and the structure of the typical spinal nerve.	<b>Fnd-S1-Ana-G-13</b> Formation and structure of Typical Spinal Nerve	Interactive Lecture	SBQs, SEQs, OSPE
90	Define the autonomic nervous system. Describe the types and functions of the Autonomic Nervous System.	<b>Fnd-S1-Ana-G-14</b> General Concepts of Autonomic nervous system	Interactive Lecture	SBQs, SEQs, OSPE
91	Describe the process of Gametogenesis	<b>Fnd-S1-Ana-E-2</b> Gametogenesis	Interactive Lecture	SBQs, SEQs, OSPE
92	Discuss ovulation and phases and outcomes of fertilization	<b>Fnd-S1-Ana-E-3</b> Ovulation Fertilization	Interactive Lecture	SBQs, SEQs, OSPE
93	Enumerate the events of first week of development ( cleavage and blastocyst formation and implantation)	<b>Fnd-S1-Ana-E-4</b> The First week of development	Interactive Lecture	SBQs, SEQs, OSPE

94	Enumerate the events of Second week of development (Formation of amniotic cavity, amnion, bilaminar embryonic disc, yolk sac, chorionic sac and primary chorionic villi)	<b>Fnd-S1-Ana-E-5</b> The second week of development	Demonstration	SBQs, SEQs, OSPE
95	Overview of the male & female genitalia. Describe the process of fertilization (conception).	<b>Fnd-S1-Cli-G&amp;O-1</b> Fertilization (The conception)	Interactive Lecture	SBQs
<b>PHYSIOLOGY</b>				
96	Describe the Physiological Concepts and organization of nervous system. general physiological concepts and organization of Autonomic Nervous System	<b>FND-S1-Phy-19</b> Introduction Organization of the Nervous system	Demonstration	SBQs, SEQs, OSPE
97	Describe the basic Structure and function of neuron & neuroglia Describe the Excitable cells and their types(Synapse)	<b>FND-S1-Phy-20</b> Neuron and neuroglial cells	Interactive Lecture	SBQs, SEQs, OSPE
98	Definition, structure, functions and types of synapse Properties of synapse	<b>FND-S1-Phy-21</b> Synapses and neural integration & synaptic transmission	Interactive Lecture	SBQs, SEQs, OSPE
<b>PHARMACOLOGY</b>				
99	Describe drug excretion & enlist routes of drug excretion	<b>Fnd-S1-Phrm-8</b> Drug Excretion	Interactive Lecture	SBQs, SEQs, OSPE
<b>COMMUNITY MEDICINE</b>				
100	To discuss the Indicator vs health index	<b>FND-S1-CM-6</b> Health Indicators	Interactive Lecture	SBQs, SEQs, OSPE
	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 I. uman development index(HDI), II. uman poverty index(HPI)			

### THEME 6: DEVELOPMENT, DIFFERENTIATION AND GROWTH

S. No	Objectives	Topics	Teaching strategy	Assessment
<b>ANATOMY</b>				

101	Define the process of fertilization. Describe the Ectopic pregnancy & its consequences.	<b>Fnd-S1-CL-O&amp;G-2</b> Ectopic pregnancy	Interactive lecture	SBQs, SEQs,
102	Explain main events of third week of development Formation of primitive streak, Gastrulation and notochord	<b>Fnd-S1-Ana-E-6</b> Third week of development (Trilaminar germ disc)	Interactive Lecture	SBQs, SEQs, OSPE
103	Formation of neural tube and Formation of somites External appearance of embryo during the second month	<b>Fnd-S1-Ana-E-7</b> Third week to eighth week of development (Embryonic period)	Interactive Lecture	SBQs, SEQs, OSPE
104	Enlist the derivatives of Ectoderm and neural crest cells	<b>Fnd-S1-Ana-E-08</b> Derivatives of ectodermal germ layer and neural crest cells	Interactive Lecture	SBQs, SEQs, OSPE
105	Enlist the derivatives of mesodermal and endodermal germ layers	<b>Fnd-S1-Ana-E-09</b> Derivatives of mesodermal and endodermal germ layers	Interactive Lecture	SBQs, SEQs, OSPE
106	Describe the development of fetus & parturition Clinicals	<b>Fnd-S1-Ana-E-10</b> 3 <sup>rd</sup> month to birth (Fetal Period)	Interactive Lecture	SBQs, SEQs, OSPE
107	Explain the interchange of substances between maternal and fetal blood by applying the knowledge of structure and functions of placenta and fetal Membranes & clinicals	<b>Fnd-S1-Ana-E-11</b> Placenta and fetal membranes	Interactive Lecture	SBQs, SEQs, OSPE

### THEME 7: GENETICS AND DEVELOPMENTAL ANOMALIES

S. NO	OBJECTIVES	TOPICS	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
108	Define teratogenesis and the basic principles of teratogenesis. Categorize the common teratogens	<b>Fnd-S1-Ana-E-12</b> Teratogenesis	Interactive lecture	BCQs, SEQs, OSPE, Viva
109	Explain the types of twin / multiple pregnancies and clinical significance	<b>Fnd-S1-Ana-E-13</b> Twin pregnancy	Interactive lecture	BCQs, SEQs, OSPE, Viva
110	Calculate the expected date of delivery (EDD) and describe various methods used to assess fetal wellbeing	<b>Fnd-S1-Gyn &amp; Obs-3</b> The Fetal wellbeing & EDD	Interactive lecture	BCQs
<b>BIOCHEMISTRY</b>				
111	To know the different types of nucleotides and their basis in genetics.	<b>FND-S1- Bioc-24</b> Structure and types of nucleotides.	Interactive .lecture	BCQs, SEQs, OSPE, Viva

112	To know the different types of nucleotides and their basis in genetics	<b>FND-S1- Bioc-25</b> Structure of DNA & RNA	Interactive Lecture	SBQs, SEQs, OSPE
<b>PHYSIOLOGY</b>				
113	Describe Physiological basis of gene and functions of DNA and RNA	<b>FND-S1- Phy-22</b> DNA ,Gene, Genetic code RNA ,Types, codan , anti codan	Interactive lecture	BCQs, SEQs, OSPE
114	Describe control of gene functions	<b>FND-S1- Phy-23</b> Control of gene functions	Interactive lecture	BCQs, SEQs, OSPE
<b>PHARMACOLOGY</b>				
115	Explain the term 'pharmacodynamics & Explain the terms affinity, efficacy, intrinsic activity & potency	<b>Fnd-S1-Pharm-09</b> <b>Introduction to Dynamics</b> <b>Drug Receptors</b> A. Relation between drug concentration & response & signaling Mechanism	Interactive lecture	BCQs, SEQs, OSPE
116	Describe second messengers & receptor regulation	<b>Fnd-S1-Pharm-10 Drug Receptors</b> B. Second messengers & receptor regulation	Interactive lecture	BCQs, SEQs, OSPE
117	Describe the general mechanisms by which drugs act	<b>Fnd-S1-Phrm-11 Factors</b> Modifying drug action & Therapeutics Index	Interactive lecture	BCQs, SEQs, OSPE
118	Correlate the principles of general pharmacology for the appropriate	<b>Fnd-S1-Phrm-12</b> Adverse drug reaction (ADR)	Interactive lecture	BCQs, SEQs, OSPE
119	therapy of disorders / diseases	<b>Fnd-S1-Phrm-13</b> Teratogenic drugs	Interactive .lecture	BCQs, SEQs, OSPE
<b>PATHOLOGY</b>				
120	Define Mutation and its type. Describe the effects of different types of mutations	<b>FND-S1- Path-12</b> Mutations	Interactive lecture	BCQs, SEQs, OSPE
121	Define Mendelian Disorder Explain the pattern of inheritance in Mendalian Disorders List the examples of autosomal, Recessive and sex linked disorders.	<b>FND-S1- Path-13</b> Mendelian Disorders	Interactive lecture	BCQs, SEQs, OSPE
122	Describe the normal Karyotype Discuss various numerical and structural abnormalities of chromosomes.	<b>FND-S1- Path-14</b> Chromosomal aberration.	Interactive .lecture	BCQs, SEQs, OSPE
123	Discuss various technique in diagnosis of genetic diseases.	<b>FND-S1- Path-15</b> Diagnosis of Genetic	Interactive lecture	BCQs, SEQs, OSPE

		Diseases		
124	Describe causes and pathogenesis of congenital fetal abnormalities	<b>FND-S1- Path-16</b> Congenital fetal abnormalities	Interactive lecture	BCQs, SEQs, OSPE
<b>RADIOLOGY</b>				
125	Basic Principle of Radiation Protection and knowing the law in relation to the use of ionizing radiation.	<b>FND-S1- Radio-1</b> Basic Radiology	Interactive lecture	BCQs, OSPE

### TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>BEHAVIORAL SCIENCES</b>						
<b>Model of healthcare</b>	-Bio-Psycho-Social model of health care	Describe Bio-Psycho-Social model of health care	Lecture/ Group Discussion	Foundation 1	1	MCQ SEQ
	-Health and behavioral sciences	Correlate health with Behavioral sciences.  Describe Important of behavioral sciences in health.	Lecture/ Group Discussion	Foundation 1	1	MCQ SEQ
<b>Affective domain</b>	-Attitude	Describe Attitudes in health professionals  Describe factors affecting it.	Lecture/ Group Discussion	Foundation 1	1	MCQ SEQ
<b>PROFESSIONALISM</b>						
<b>Introduction to Professionalism</b>	-Definition of a professionalism, behavior's, attitudes, emotions, and their attributes	Define Professionalism, and its attributes	Lectures/Group discussion	Foundation 1	2	MCQ, SEQ,
<b>Dynamics of Professionalism</b>	-Trust definition, its attributes, and components, and its' application	Dynamics of trust in health professional- patient relationship	Lecture Role Play Workplace	Foundation 1	1	MCQ

<b>Professional identity formation (PIF)</b>	-White coat ceremony, -Types, multiple identities, Components, Professional identity formation	Students' roles in terms of professional identity	White coat ceremony	Foundation 1	2	MCQ
<b>Professional identity formation (PIF)</b>	-Identifies his own strengths and weaknesses	Identifies his own strengths and weaknesses	Interactive Lecture /Group discussion/Role Play	Foundation 1	1	MCQ
<b>Personal Development Plan (PDP)</b>	-Personal development plan & reflective portfolios	Prepare personal development plan & reflective portfolios	Interactive Lecture	Foundation 1	2	Assignment
<b>COMMUNICATION SKILLS</b>						
<b>Communicating with administration</b>	-Share with administration on matters one feels sensitive about	Communicating with administration	Interactive Lecture	Foundation 1	3	MCQ, SEQ
	-Evaluating the quality of teaching	Understanding of methods to Evaluate the effectiveness and quality of teaching	Interactive Lecture /Group Discussion	Foundation 1	1	MCQ, SEQ
	-Evaluating the quality of teaching and quality of teaching	Understanding of methods to Evaluate the effectiveness and quality of teaching	Interactive Lecture /Group Discussion	Foundation 1	1	MCQ, SEQ
<b>LEADERSHIP AND MANAGEMENT</b>						
<b>Introduction</b>	-Definition of a leader & manager -Differences between leadership and management	Differentiate between leadership and management	Interactive Lecture	Foundation 1	1	MCQ, SEQ
<b>Self-management skills</b>	-What is self-management? - Its importance. -Self-management Mechanisms	Demonstrate self-management skills	Interactive Lecture	Foundation 1	1	MCQ, SEQ
<b>ETHICS</b>						



<b>Ethical principles</b>	-Ethical principles. (Autonomy, Beneficence, Non maleficence, Justice)	Explain the pillars of medical ethics and their application in different situations	Interactive Lecture/Group Discussion	Foundation 1	1	MCQ, SEQ
<b>RESEARCH</b>						
<b>Introduction</b>	-Background, concepts, uses. -Definition of medical research Need of medical research	Describe the Background and purpose of research.	Interactive Lecture/Group Discussion	Foundation 1	1	MCQ, SEQ
<b>Types of Research</b>	-Types of Research & Epidemiological methods (descriptive, analytic and experimental).	Explain different types of research.	Lecture/ Group Discussion	Foundation 1	1	MCQ, SEQ
<b>Formulation of Research Question</b>	-Importance of Research Question in starting research -Scope of research question -Study design implications for research question Describe how to develop a research question	formulate research question	Lecture/ Group Discussion	Foundation 1	1	MCQ, SEQ
<b>Research objectives Hypothesis</b>	-Developing objectives and hypothesis	Write research objectives for a research study. Develop hypothesis for a study. Select a study design for a study.	Lecture/ Group Discussion	Foundation 1	2	MCQ, SEQ

## CLINICAL SCIENCES SUBJECTS

### FOUNDATION MODULE

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
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1.	<b>ISLAMIC STUDY</b>	Concept of treatment in Islam	1	Lecture
		Medical Ethics Vs Islamic medical ethics		
		Doctor Vs Muslim doctor	1	Lecture
	Islamic perspective of the practice of Medical profession I	Roles of a Muslim doctor		
		Historic perspective of health care and the contribution of Muslim physicians	1	Lecture
		Leadership role of doctors in the society	1	Lecture
		The view of the Muslim doctor regarding human life and other forms of life		
2.	<b>PAKISTAN STUDY</b>	Structure of health service delivery system in Pakistan	1	Lecture
		Health houses (LHWs)	1	Lecture
		Basic health unit – its composition and function	1	Lecture
		Rural health center – composition and function	1	Lecture
3.	<b>ANAESTHESIA</b>	Introduction to Anaesthesia	1	Lecture
	Anesthesia Equipments	Identify the equipment of General anesthesia	1	Lecture
		Identify the components of Spinal Anesthesia	1	Lecture
4	<b>CRITICAL CARE</b>	Introduction to Critical Care	1	Lecture
	General Concepts	Organization and management of care in the ICU	1	Lecture
		Triage, admission / discharge criteria	1	Lecture
		ICU scoring systems	1	Lecture
5.	<b>ORTHOPAEDICS &amp; TRAUMA</b>	Introduction to orthopaedic	1	Lecture
	General Concepts	Fractures and their types	1	Lecture
		Description and classification of soft tissue neurological and bony extremity injuries	1	Lecture
		AO Classification	1	Lecture
		Growth Plate Injuries	1	Lecture
6.	<b>UROLOGY</b>	Introduction to Urology	1	Lecture
		Enumerate the various parts of Urinary tract	1	Lecture
7.	<b>FAMILY MEDICINE</b>	Introduction to Family Medicine	1	Lecture
	Core concept	Practice of Family Medicine	1	Lecture
8	<b>Plastic Surgery</b>	Introduction to Plastic Surgery	1	Lecture
		Anatomy and physiology of tissues used in reconstruction	1	Lecture
9	<b>PSYCHIATRY</b>	General Introduction to Psychiatry	1	Lecture
	Knowledge regarding psychiatric conditions	Introduction to multiple Psychiatric Disorders	1	Lecture
11	<b>DERMATOLOGY</b>	Introduction to the Dermatology	1	Lecture
12	<b>CARDIOLOGY</b>	Introduction to Cardiology	1	Lecture
13	<b>PULMONOLOGY</b>	Introduction to Pulmonology	1	Lecture
		Normal Anatomy and Physiology of Lungs	2	Lecture
		Pulmonary Functions test	1	Lecture
14	<b>PATIENT SAFETY</b>	Understanding Adverse Events and Patient Safety	1	Lecture
	Introduction	Your Role in a Culture of Safety	1	Lecture
		Your Role in Building Safer, More Reliable Systems	1	Lecture
16	<b>INFECTION CONTROL</b>	Introduction to Healthcare associated infections	1	Lecture
		Standard precautions	1	Lecture

## TEACHING HOURS ALLOCATION

S. No	Subject	Teaching Hours	Practical Hours
1	Anatomy	44	6
2	Biochemistry	26	18
3	Physiology	24	8
4	Pathology	17	2
5	Pharmacology	14	-
6	Community Medicine	7	-
7	Gynaecology	3	-
8	Medical Education	2	-
9	Orthopaedics	1	-
10	Forensic medicine	1	-
11	CBL 6 (Physiology)*	12	-
12	Radiology	1	-
13	Islamic Study	4	-
14	Pakistan Study	4	-
15	Anesthesia	3	-
16	Critical Care	3	-
17	Orthopaedics and Trauma	6	-
18	Urology	2	-
19	Family Medicine	2	-
20	Plastic Surgery	2	-
21	Psychiatry	2	-
22	Dermatology	1	-
23	Cardiology	1	-
24	Pulmonology	4	-
25	Patient Safety	3	-

26	Infection Control	2	-
<b>Total hours</b>		<b>191</b>	<b>34</b>

\*Minimum 2 hours are allotted for each CBL session per Module

<b>. No</b>	<b>Tagged Subject</b>	<b>Teaching Hours</b>
1	Behavioral Sciences	3
2	Professionalism	8
3	Communication Skills	5
4	Leadership and Management	2
5	Ethics	1
6	Research	5
<b>Total hours</b>		<b>24</b>

## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

- Student must report to examination hall/venue, in time for smooth conduction of the exams.
- No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
- No students will be allowed to sit in exam without College ID Card, and Lab Coat
- Students must sit according to their roll numbers mentioned on the seats.
- Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
- Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
- Students must not possess any written material or communicate with their fellow students
- Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
- **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### ASSESSMENT

#### **Internal: Total 10% (20 marks)**

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

#### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to final marks.

## METHODS OF ASSESSMENT

### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

### **Short Essay Questions (SEQs):**

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

## ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

**11.3.5 WEEKLY TESTS:** The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.

It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.

Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

### **POST-TEST DISCUSSION (PTD)**

Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now. The moderator will check, assess and grade PTD

Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class. PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail.

## ASSESSMENT BLUEPRINT

### FOUNDATION-I MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300



## LEARNING RESOURCES

The learning resources for the educational contents of BDS program are available for the students which assist learners to achieve the outcomes and by focusing on educational content. In addition; the names of the books for each subject as a learning resources is available with the educational content of the same subject.

Following learning resources can be used by the undergraduates;

- Books
- Evidence based articles from journals
- Digital library to search the material for self-directed learning
- Video Tapes
- Displays
- Models
- Phantom Heads
- Printed Notes
- Case based scenarios'
- Community Visits

### Recommended Books First YEAR MBBS

Anatomy	Physiology	Biochemistry
<ul style="list-style-type: none"> <li>• Clinically Oriented Anatomy Keith.L. Moore, Arthur F. Dalley, Anne M.R. Agur 7<sup>th</sup> Or Latest Editio</li> <li>• Gray's Anatomy For Students Drake &amp; Vogl &amp; Mitchell 3<sup>rd</sup> Or Latest Edition               <ul style="list-style-type: none"> <li>• Clinical Anatomy By Regions (Reference Book) Richard S. Snell 9<sup>th</sup> Edition</li> </ul> </li> <li>• Last's Anatomy: Regional &amp; Applied (Reference Book) Chummy S. Sinnatamby 12<sup>th</sup> Or Latest Edition</li> <li>• Atlas Of Human Anatomy Frank H. Netter 6<sup>th</sup> Edition</li> </ul> <p><b>Embryology</b></p> <ul style="list-style-type: none"> <li>• Langman's Medical Embryology T.W. Sadler 13<sup>th</sup> Edition               <ul style="list-style-type: none"> <li>• The Developing Human Clinically Oriented Embryology (Reference Book) Moore &amp;</li> </ul> </li> </ul>	<ol style="list-style-type: none"> <li>1. Guyton and Hall Textbook of Medical Physiology – 15<sup>th</sup> Edition.</li> <li>2. Ganong's Review of Medical Physiology, 27<sup>th</sup> Edition.</li> </ol>	<ol style="list-style-type: none"> <li>1. Harper's Illustrated Biochemistry, 32 edition.</li> <li>2. Lippincot t' Illustrated Reviews- Biochemistry 7<sup>th</sup> edition.</li> </ol>

<p>Persaud &amp; Torchia 10<sup>th</sup> Edition</p> <p><b>Histology</b></p> <ul style="list-style-type: none"> <li>• Medical Histology <a href="#">Laiq Hussain Siddiqui</a> 5<sup>th</sup> Or Latest Edition Wheaters Functional Histology <a href="#">Barbara Young</a> 5<sup>th</sup> Edition</li> <li>• Basic Histology (Text And Atlas) (Reference Book) <a href="#">Luiz Junqueira, Jose Carneiro</a> 11<sup>th</sup> Or Latest Edition</li> </ul>			
<b>Pathology</b>	<b>Community Medicine</b>	<b>Pharmacology</b>	
<p>Robbins &amp; Cotran Pathologic Basis Of Disease <a href="#">Vinay Kumar, Abul K. Abbas, Jon C. Aster</a> 10<sup>th</sup> Edition</p>	<p>Park's Text book of Preventive And Social Medicine <a href="#">K. Park</a></p>	<p>1. Lippincott Illustrated Reviews: Pharmacology <a href="#">Karen Whalen, Carinda Feild, Rajan Radhakrishnan</a></p>	



**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

THE DESIGN OF THE MODLUE

- A. Were objectives of the course clear to you? Y  N
- B. The course contents met with your expectations   
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned   
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with   
l. Too few examples 5. Adequate examples
- E. The level of the course was   
l. Too low 5. Too high
- F. The course contents compared with your expectations   
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices   
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?   
l. Not at all 5. Very strongly

THE CONDUCT OF THE MODLUE

- A. The lectures were clear and easy to understand   
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used   
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate   
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful   
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes  No

F. Please give overall rating of the course

90% - 100% (    )

80% - 90% (    )

70% - 80% (    )

60% - 70% (    )

50% - 60% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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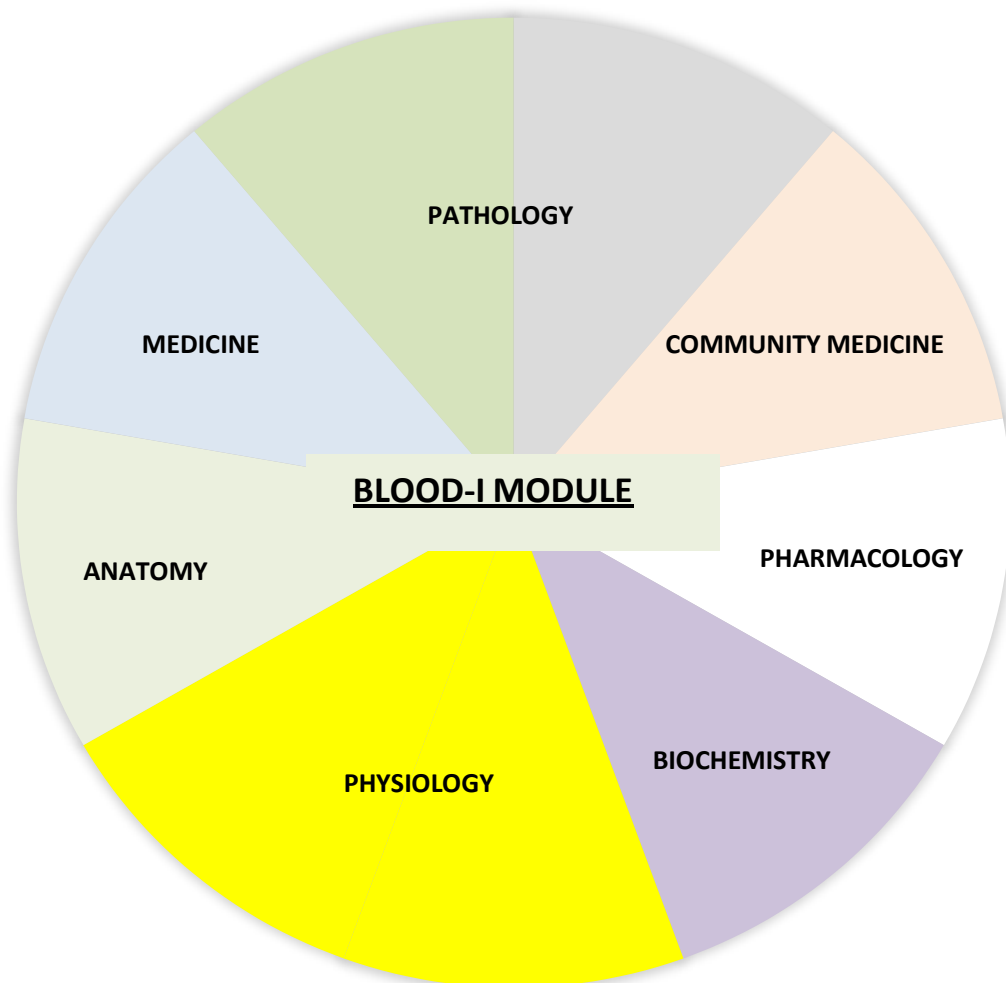
**BLOOD-I MODULE**  
**FIRST PROFESSIONAL MBBS**



## **CURRICULUM FRAMEWORK OF SECOND MODULE**

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application. Integrated curriculum comprises of system-based modules such as Foundation-I, Blood-I, CVS-I, Musculoskeletal-I and Respiratory-I Modules which links basic science knowledge to clinical problems.

### **INTEGRATING DISCIPLINES OF BLOOD-I MODULE**



## MODULE OVERVIEW

### BLOOD MODULE-I MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	First professional
<b>Duration</b>	5 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

<b>BLOOD MODULE-I COMMITTEE</b>			
Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Dr. Saqib Baloch	Anatomy	Assistant Professor
2.	Dr. Shahab Hanif	Anatomy	Assistant Professor
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### **Module objectives:**

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

#### **Achievement of objectives:**

- Focuses on information pertaining to examination policy, rules and regulations.

## INTRODUCTION

Welcome to the module on hematology. The goal of this module is to provide a fundamental understanding of hemostasis and hematopoiesis at the molecular level. The goal of this module is to teach and incorporate fundamental blood cell knowledge that has practical applications. With more hands-on activities, this module aims to make learning engaging and fruitful for you. It will incorporate clinical sciences with an emphasis on the

fundamental pathological, physiological, and pharmacological aspects of infections and chemotherapeutic drugs.

First-year medical students will have the opportunity to learn about the presentations and management concepts of common immunological, hematological, inflammatory, and neoplastic illnesses through this module. To help you understand the material and learn more effectively, you will be expected to consider the situations and take part in case-based learning sessions. It will also assist you in concentrating on the goals you have set for yourself in relation to the lectures, exercises, and tutorials scheduled for this module.

## RATIONALE OF SECOND MODULE

The goal of the Blood module is to provide a fundamental understanding of hemostasis and hematopoiesis at the molecular level. Along with discussing the fundamental pharmacological elements of blood-related disorders and their prevalence in society, it will also detail the underlying pathological mechanisms that lead to the development of anemias.

## LEARNING OBJECTIVES

### General learning Objectives:

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

1. Describe the composition of blood in relation to its biochemistry and Physiology
2. Define anemia and its pathophysiology.
3. Classify different types of anemias on the basis of its pathophysiology
4. Recognize ABO/RH blood grouping system
5. Practice history taking of a patient presented with blood disorders
6. Explain hemostasis and roll of thrombolysis
7. Describe pathophysiology of bleeding disorders & identify its different types.
8. Identify role of pharmacology in anemia and bleeding disorders
9. Define and explain research methodology.
10. Identify and describe immunology on the basis of its pathophysiology
11. Enlist pharmaceutical agents used in different immunological disorders

### Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Explain the physical attributes and makeup of whole blood.
2. To understand how blood functions.
3. To research the origins of red blood cells (RBC, WBC, and platelets) as well as their shape
4. Researching different blood indices, their normal ranges, and abnormalities.
5. Explain the formation, structure, and breakdown of hemoglobin.
6. Explain how normal coagulation and hemostasis are regulated.
7. Describe the etiology of different bleeding diseases.
8. Describe the foundational ideas and practical implications of the ABO/RH blood grouping system
9. Describe the fundamental traits of the immune system and the conditions that affect it.
10. Talk about the biochemical features, structural makeup, and roles of the lymphoid system.
11. Describe how pharmacology—the study of drugs—relates to bleeding problems and anemia.



## 12. A healthy diet's role in preventing community blood disorders

### Skills / Psychomotor Domain:

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

1. Completing actual tasks in an orderly and secure manner as directed
2. Accurately make and document observations.
3. Calculate the hemocrit, or percentage of produced blood constituents.
4. Recognize RBCs, be able to count them in a counting chamber, and be aware of their typical values. Moreover, group anemia according to its morphology.
5. Use the device to measure hemoglobin and be aware of normal and abnormal values.
6. Recognize the various types of WBCs and their morphology. You should be able to count them in a counting chamber and be aware of their typical values significance of each WBC for diagnosis.
7. Recognize platelets and be aware of normal ranges. The significance of this diagnostic tool for bleeding problems
8. Check bleeding and clotting times, and be aware of typical ranges and their significance for bleeding problem diagnosis.
9. Type blood groups and determine the Rh factor.
10. Conduct an ESR test to determine its normal range and predictive significance.

### Attitude / Affective Domain:

It involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

1. Comply with standard laboratory procedures
2. Engage in professional classroom and practical work.
3. Work as a team to effectively communicate with instructors, staff, and peers.
4. Act with professionalism and moral principles when interacting with teachers, personnel, cadavers, and patients.
5. Work well as a team to communicate with instructors and peers.
6. Show that you have the capacity to evaluate your performance.

### Outcomes of Blood-I Module

1. Knowledgeable
2. Skillful
3. Community Health Promoter
4. Problem-solver
5. Professional
6. Researcher
7. Leader and Role Model

## THEMES FOR BLOOD-I MODULE

SNO	Theme	Duration
1	Red cell disorders (Anemia, Polycythemia)	1 week
2	Infections & Inflammation	1 week
3	Bleeding & thromboembolic disorders	1 week
4	ABO & Rh-Incompatibility	1 week

5	Immunological disorders	1 week
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**SPECIFIC LEARNING OBJECTIVES THEME WISE**

**THEME 1: RED CELL DISORDERS (ANEMIA, POLYCYTHEMIA)**

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
1	Illustrate the organization of hematopoietic tissue & List the sites and source of hematopoiesis before and after the birth.	<b>Hem-S1-Ana-E1</b> Development of blood	Interactive Lecture	BCQs, SEQs, OSPE, Viva
2	Discuss & classify the structure of RBC, WBC & platelets. Methods used to study blood and bone marrow cells.	<b>Hem-S1-Histo-P1</b> Morphology of blood cells	Interactive Practical	BCQs, SEQs, OSPE, Viva
<b>PHYSIOLOGY</b>				
3	To, discuss the cellular components of blood, To define hematocrit, normal values & factors affecting hematocrit	<b>Hem -S1-PHYS-1</b> Composition of blood & its cellular components	Demonstration	BCQs, SEQs, OSPE, Viva
4	Describe the structure of RBC and its membrane. Discuss various functions of RBC	<b>Hem -S1-PHYS-2</b> Structure and functions of RBC and its membranes	Demonstration	BCQs, SEQs, OSPE, Viva
5	To discuss the various stages of RBC'S formation. Discuss various sites of erythropoiesis	<b>Hem -S1-PHYS-3</b> Erythropoiesis (stages of RBC Formation)	Demonstration	BCQs, SEQs, OSPE, Viva
6	Enlist the factors necessary for erythropoiesis. Discuss the significance of Reticulocyte count	<b>Hem -S1-PHYS-4</b> Important factors of Erythropoiesis	Demonstration	BCQs, SEQs, OSPE, Viva
7	Enlist types of hemoglobin. Discuss normal and abnormal structure of hemoglobin.	<b>Hem -S1-PHYS-5</b> Hemoglobin types and structure	Demonstration	BCQs, SEQs, OSPE, Viva
8	Describe various functions of hemoglobin. Discuss the role of haemoglobin in carrying O <sub>2</sub> & CO <sub>2</sub> .	<b>Hem -S1-PHYS-6</b> Functions of Hemoglobin	Interactive Lecture	BCQs, SEQs, OSPE, Viva
9	Determine hemoglobin concentration (Sahli's method)	<b>Hem -S1-PHYS-P1</b> Hemoglobin concentration (Sahli's method)	Interactive Practical	BCQs, SEQs, OSPE, Viva

<b>10</b>	Estimate erythrocyte sedimentation rate (ESR by wester green method)	<b>Hem -S1-PHYS-P2</b> Estimation of erythrocyte sedimentation rate (ESR by wester green method)	Interactive Practical	BCQs, SEQs, OSPE, Viva
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### BIOCHEMISTRY

<b>11</b>	Functions, Biochemical Properties, Absorption, Storage & its regulation	<b>HEM-S1-Bio-1</b> Iron Metabolism	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>12</b>	General introduction, general functions and classification of the vitamins	<b>HEM-S1-Bio-2</b> Classification of Vitamins & General Functions	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>13</b>	sources of vitamins, RDA, absorption, functions and clinical aspects of Vitamin C, K, B6, Folic Acid, Cobalamin	<b>HEM-S1-Bio-3</b> Role of Vitamins in Erythropoiesis (Vitamin C, K, B6, Folic Acid, Cobalamin)	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>14</b>	Structural details of molecule specially its quaternary structure. The T and R forms of Hemoglobin. The oxygenation of hemoglobin molecule. Comparison of hemoglobin and myoglobin molecule with respect to structure and function.	<b>HEM-S1-Bio-4</b> Hemoglobin structure	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>15</b>	Hemoglobinopathies: Normal globin chain configuration Classification of thalassemia Possible alpha thalassemia syndromes Mutations responsible for betathalassemia Lab test responsible for diagnosing hemoglobinopathies and thalassemia	<b>HEM-S1-Bio-5</b> Hemoglobinopathies	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>16</b>	Describe the synthesis and structure of heme. Explain the importance of the heme containing substances.	<b>HEM-S1-Bio-6</b> Heme synthesis	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>17</b>	Defects of Heme Synthesis Major forms of Porphyria's. Variants of Hemoglobin	<b>HEM-S1-Bio-7</b> Porphyria's	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>18</b>	Normal turnover of erythrocytes. Sites of erythrocyte and hemoglobin degradation.	<b>HEM-S1-Bio-8</b> Normal turnover of erythrocytes	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>19</b>	Relate the levels of bilirubin with the discoloration of tissues. Excretion of bile pigments.	<b>HEM-S1-Bio-09</b> Bilirubin	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>20</b>	Introduction to Electrophoresis	<b>HEM-S1-Bio-P1</b> Electrophoresis & its Biochemical significance	Interactive practical	BCQs, SEQs, OSPE, Viva

21	Types , clinical features and laboratory diagnosis of anemia.	<b>HEM-S1-Bio-P2</b> Laboratory diagnosis of anemia	Interactive practical	BCQs, SEQs,
<b>PATHOLOGY</b>				
22	To describe classification of anemia & to differentiate the different types of anemias on the basis of Morphology & Pathophysiology.	<b>Hem-S1-Path-1</b> Introduction of Anemia	Interactive Lecture	BCQs, SEQs, OSPE, Viva
23	to know the different types of nutritional Anemias, To Enlist the causes of iron deficiency & Megaloblastic anemias, clinical features and laboratory diagnosis of Nutritional Anemias	<b>Hem-S1-Path-2</b> Nutritional Anemias	Interactive Lecture	BCQs, SEQs, OSPE, Viva
24	To Explain the pathophysiology, clinical features and laboratory diagnosis of Hereditary spherocytosis, G6PD deficiency	<b>Hem-S1-Path-3</b> Membrane disorder & Red cell Enzyme disorder (Hemolytic Anemia)	Interactive Lecture	BCQs, SEQs, OSPE, Viva
25	To discuss Thalassemia Syndromes and sickle cell disease. To understand different types of mutations. To explain pathogenesis and laboratory diagnosis.	<b>Hem-S1-Path-4</b> Haemoglobinopathies	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>PHARMACOLOGY</b>				
26	Role of oral & injectable iron in iron deficiency anemia Role of Vit. B12 & Folic acid in Macrocytic anemia	<b>Haem-S1-Pharm-1</b> Drug therapy in nutritional anemia	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>COMMUNITY MEDICINE</b>				
27	To describe the main features of the Expanded Program on Immunization To discuss the EPI vaccination coverage status in Pakistan. To understand mechanism of cold chain and maintenance of vaccines	<b>Hem-S1-CM-1</b> Expanded Program of immunization	Interactive Lecture	BCQs, SEQs, OSPE, Viva
	<b>Field visit:</b>	To the EPI center, LUH, Jamshoro		
<b>MEDICINE</b>				
28	<b>Clinical Lecture</b>	Anemia	Interactive Lecture	BCQs, SEQs, OSPE, Viva

## THEME 2: INFECTIONS & INFLAMMATION

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
29	Discuss the embryological source of lymphoid organs	<b>Hem-S1-Ana-E2</b> Development of lymphoid organs	Interactive Lecture	BCQs, SEQs, OSPE, Viva

<b>30</b>	Discuss the components, location & structure of lymphoid tissue. Describe parts, surfaces and relations of Lymphoid organs	<b>Hem -S1-Ana-G1</b> Gross features of lymphoid organs	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>31</b>	Discuss the histological classification & microscopic features of lymphoid organs.	<b>Hem -S1-Ana-H1</b> Microscopic anatomy of lymphoid organs	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>32</b>	Discuss the histological classification & microscopic features of WBCs	<b>Hem -S1-Ana-H2</b> Microscopic features of WBCs	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>33</b>	Define histological features of spleen & lymph node.	<b>Hem-S1-Histo-P2</b> Spleen & Lymph node	Interactive Practical	BCQs, SEQs,
<b>34</b>	Define histological features of Thymus gland & Tonsil.	<b>Hem-S1-Histo-P3</b> Thymus & Tonsil	Interactive Practical	BCQs, SEQs,

#### PHYSIOLOGY

<b>35</b>	Describe the process of leukocyte genesis Enlist various types of granulocytes and agranulocytes, their functions & values	<b>Hem -S1-PHYS-7</b> Types and functions of WBC Neutrophils and monocyte	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>36</b>	Describe the Physiological role of neutrophils and macrophages in inflammation	<b>Hem -S1-PHYS-8</b> Role of Neutrophils and macrophages in inflammation	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>37</b>	Discuss functions of Eosinophils and basophils Enlist their normal count.	<b>Hem -S1-PHYS-9</b> Eosinophils and Basophils	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>38</b>	Explain the significance of Reticuloendothelial system,	<b>Hem -S1-PHYS-10</b> Monocyte-macrophage system (Reticuloendothelial system)	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>39</b>	Discuss the process of developments of lymphocytes Enlist the functions of T and B lymphocytes.	<b>Hem -S1-PHYS-11</b> Development and Functions of T and B lymphocytes	Interactive Lecture	BCQs, SEQs, OSPE, Viva

<b>40</b>	Prepare blood film & Identify and quantify different types of white blood cells on blood film	<b>Hem -S1-PHYS-P3</b> Preparation of blood film & Identification and quantification of white blood cells on blood film	Interactive Practical	BCQs, SEQs, OSPE, Viva
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#### PATHOLOGY

<b>41</b>	Define acute inflammation. Describe the changes, systemic effects occurring in acute inflammation. Describe the cellular events of chemotaxis.	<b>Hem-S1-Path-5</b> Overview of Acute Inflammation	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>42</b>	Describe the chronic inflammation. Describe the chronic inflammatory cells and mediators. Discuss the granuloma formation	<b>Hem-S1-Path-6</b> Overview of Chronic inflammation	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>43</b>	Describe the causes of Neutrophilia & Neutropenia Eosinophilia, Lymphocytosis, Monocytosis	<b>Hem-S1-Path-7</b> Non. Neoplastic WBC Disorders	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>COMMUNITY MEDICINE</b>				
<b>44</b>	To understand injection safety. To describe hazards) of unsafe injections and its prevention. To discuss the blood born disease hepatitis B, C and HIV due to unsafe injections To understand the role of health education in prevention of blood born disease	<b>Hem-S1-CM-2</b> Unsafe injections; hazards and its prevention	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>MEDICINE</b>				
<b>45</b>	<b>Clinical Lecture</b>	Acute and chronic inflammatory disorders: A physician aspect	Interactive Lecture	BCQs, SEQs, OSPE, Viva

### THEME 3: BLEEDING & THROMBOEMBOLIC DISORDERS

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>PHYSIOLOGY</b>				
<b>46</b>	To describe the four-basic mechanisms of Hemostasis	<b>Hem -S1-PHYS-12</b> Hemostasis & role of Thrombocytes	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>47</b>	Explain the mechanism of formation of platelet plug. To explain the general mechanism of blood coagulation	<b>Hem -S1-PHYS-13</b> Clotting factors	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>48</b>	To enlist the clotting factors, to describe the role of clotting factors in coagulation & steps involved in intrinsic and extrinsic pathway for coagulation,	<b>Hem -S1-PHYS-14</b> Clotting cascade Pathways	Interactive Lecture	BCQs, SEQs, OSPE, Viva

49	Role of Intravascular anticoagulants protein C, S, to prevent blood clotting in normal vascular system.	<b>Hem -S1-PHYS-15</b> Anticlotting mechanism	Interactive Lecture	BCQs, SEQs, Structured Viva
50	Discuss bleeding disorders and hemophilia and their causes and deficiency of different clotting factors	<b>Hem -S1-PHYS-16</b> Conditions causing excessive bleeding and Hemophilia	Interactive Lecture	BCQs, SEQs, Structured Viva
51	Estimate bleeding time, clotting time (BT & CT)	<b>Hem -S1-PHYS-P4</b> Estimation of bleeding time, clotting time	Interactive Practical	BCQs, SEQs, OSPE, Viva
<b>BIOCHEMISTRY</b>				
52	Components of Plasma. Plasma Proteins & their significance. Role of Plasma Proteins in Blood Circulation	<b>HEM1-S1-Bio-10</b> Plasma Proteins	Interactive Lecture	BCQs, SEQs, Viva
53	Enzyme chemistry, biomedical importance, Classification, How Enzymes Work	<b>HEM1-S1-Bio-11</b> Introduction to enzymes	Interactive Lecture	BCQs, SEQs, OSPE, Viva
54	Properties, Factors affecting rate, Enzyme Inhibition	<b>HEM1-S1-Bio-12</b> Enzyme properties and inhibitors	Interactive Lecture	BCQs, SEQs, OSPE, Viva
55	To estimate the plasma proteins	<b>HEM1-S1-Bio-P3</b> Estimation of plasma proteins	Interactive practical	OSPE, Viva
56	To estimate the serum albumin	<b>HEM1-S1-Bio-P4</b> Estimation of serum albumin	Interactive practical	OSPE, Viva

<b>PATHOLOGY</b>				
57	Discuss Quantitative & Qualitative platelets disorders. To discuss the different types of bleeding disorders: haemophilia and Von Willebrand disease.	<b>Hem-S1-Path-8</b> Platelet and bleeding disorders	Interactive Lecture	BCQs, SEQs, OSPE, Viva
58	To discuss the thrombosis, pathogenesis, types and fate of thrombosis.	<b>Hem-S1-Path-9</b> Thrombosis	Interactive Lecture	BCQs, SEQs, OSPE, Viva
59	To Define Embolism, its types and morphological features of Embolism.	<b>Hem1-S1-Path-10</b> Embolism	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>MEDICINE</b>				
60	<b>Clinical Lecture</b>	Bleeding & Clotting Disorders	Interactive Lecture	BCQs, SEQs, OSPE, Viva

#### THEME 4: ABO & RH-INCOMPATIBILITY

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>PHYSIOLOGY</b>				
61	Describe the antigens & Agglutinins for A, B, AB & O blood group To define Agglutinogens, agglutinin, and agglutination & what takes place when incompatible blood types are mixed. Identify universal donor & recipient & explain why?	<b>Hem -S1-PHYS-17</b> ABO Blood group system Antigens & Agglutinins for A, B, AB & O blood groups	Interactive Lecture	BCQs, SEQs, OSPE, Viva
62	To enlist various Rh antigens & Rh immune response. What is erythroblastosis fetalis & how it can be prevented	<b>Hem -S1-PHYS-18</b> Rh antigens & Rh immune response. Erythroblastosis fetalis.	Interactive Lecture	BCQs, SEQs, OSPE, Viva
63	Identify different blood groups	<b>Hem -S1-PHYS-P5</b> Blood groups	Interactive practical	BCQs, SEQs,
<b>PATHOLOGY</b>				
64	To know the different types of blood transfusion reaction	<b>Hem-S1-Path-11</b> Blood Transfusion Reaction	Interactive Lecture	BCQs, SEQs, OSPE,

### HEME 5: IMMUNOLOGICAL DISORDERS

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>PHYSIOLOGY</b>				
65	To Understand the overall organization of immune system To differentiate b/w innate & acquired immunity	<b>Hem -S1-PHYS-19</b> Immunity and Classification of immunity	Interactive Lecture	BCQs, SEQs, OSPE, Viva
66	Discuss humoral immunity To describe the formation & Mechanism of action of antibodies.	<b>Hem -S1-PHYS-20</b> Humoral immunity	Interactive Lecture	BCQs, SEQs, OSPE,
67	To understand cell mediated immunity Discuss the Active and passive immunity	<b>Hem -S1-PHYS-21</b> Cell mediated Immunity Active and passive immunity.	Interactive Lecture	BCQs, SEQs, OSPE, Viva
68	To understand the complement system, interferon and NK cells	<b>Hem-S1-PHYS-22</b> Natural immunity	Interactive Lecture	BCQs, SEQs, OSPE,
<b>BIOCHEMISTRY</b>				
69	Define Immunoglobins. Describe chemistry, structure, classification & functions	<b>Hem-S1-Bio 13</b> Immunoglobins	Interactive Lecture	BCQs, SEQs, OSPE,
70	To estimate blood glucose levels	<b>Hem-S1-Bio-P5</b> Estimation of glucose	Interactive Practical	BCQs, SEQs,
71	introduction to spectrophotometry, significance and applications	<b>Hem-S1-Bio-P6</b> spectrophotometry	Interactive practical	BCQs, SEQs,
<b>PATHOLOGY</b>				



72	Define immunity, and differentiate b/w innate and acquired Immune response.	<b>Hem-S1-Path 12</b> Introduction of immunity	Interactive Lecture	BCQs, SEQs, OSPE,
73	Define hypersensitivity Describe Pathogenesis of Type I & II hypersensitivity Reactions with examples	<b>Hem1-S1-Path-13</b> Hypersensitivity reaction Type I & II	Interactive Lecture	BCQs, SEQs, OSPE,
74	Describe type III & IV Hypersensitivity reactions with examples. Describe different e.g. of type IV hypersensitivity reactions.	<b>Hem1-S1-Path-14</b> Hypersensitivity reaction Type III & IV	Interactive Lecture	BCQs, SEQs, OSPE, Viva
75	Discuss Primary immunodeficiency and its causes Discuss Secondary immunodeficiency and its causes	<b>Hem1-S1-Path-15</b> Immunodeficiency	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>MEDICINE</b>				
76	<b>Clinical Lecture</b>	<b>HIV/AIDS</b>	Interactive Lecture	BCQs, SEQs, OSPE, Viva

### TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>BEHAVIORAL SCIENCES</b>						
Affective Domain	Attention and concentration	Define attention and concentration. What factor affect them?	Lecture/ Group Discussion	Blood 1	1	MCQ
<b>PROFESSIONALISM</b>						
<b>Emotional intelligence</b>	Emotional and social intelligence in given contexts	Describe & Display appropriate emotional and social intelligence	Lecture/Group discussion/Role Play	Blood 1	2	MCQ
<b>COMMUNICATION SKILLS</b>						
<b>Cultural sensitivity</b>	Concepts of Equality and Equity, Cultural sensitivities.	Display sensitivity towards individual and cultural differences keeping in view the principles of equality and equity	Lecture equity, equality/Role play,	Blood 1	1	MCQ
<b>Teamwork</b>	Dynamics of Teamwork	Display teamwork in group activities for creativity and problem solving	Role play,	Blood 1	2	MCQ

<b>Confidentiality</b>	Confidentiality of colleagues and patients Appropriate use of social media	Ensuring confidentiality	Lecture/Role play / Group Discussion	Blood 1	1	MCQ
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<b>RESEARCH</b>						
<b>Literature Search</b>	Literature Review (Background, keywords)	Describe techniques of literature search and review. conduct literature search to finalize the research question using Boolean logic	Lecture/ Group Discussion	Blood 1	4	MCQs Assignments
<b>Title, Rationale, Purpose</b>	Title, Rationale, Purpose	Explain the process of title selection for a research study. Describe the Purpose and justification of any selected title.	Lecture/ Group Discussion	Blood 1	2	MCQs Assignment
<b>Operational Definitions</b>	Operational Definitions	Describe Operational Definitions	Lecture/ Group Discussion	Blood 1	1	MCQs Assignment

### CLINICAL SCIENCES SUBJECTS

#### BLOOD MODULE

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>ISLAMIC STUDY</b>  The view of the Muslim doctor regarding human life and other forms of life	Preservation of human life 1. the right of fetus to live 2. The suckling right to life 3. Preference of life maintenance to all other legislative considerations) Preservation of human dignity. Life related legislative controls. Human related factors of equality and preference Maintenance of non-human life and relationship with other living forms and the environment	1	Lecture
			1	Lecture
2.	<b>PAKISTAN STUDY</b>	Tehsil headquarter hospitals – composition and function	1	Lecture
		District headquarters hospital – composition and function	1	Lecture
3.	<b>ANAESTHESIA</b>  Anesthesia Equipment	Classify the monitors	1	Lecture
		Interpret the values of vitals on monitors	1	Lecture

		Explain problems and Basic management	1	Lecture
4.	<b>CRITICAL CARE</b>	Oxygen transport and delivery, regulation of blood pressure and blood volume	1	Lecture
	Circulation	Hypotension and hemodynamic instability	1	Lecture
		Evaluation and Management of hypertension in ICU	1	Lecture
		Hemodynamic monitoring	1	Lecture
5.	<b>FAMILY MEDICINE</b>	Documentation and Medical Records	1	Lecture
	Core concept	Evidence- Based Medicine	1	Lecture
6	<b>PSYCHIATRY</b>	Schizophrenia	1	Lecture
	Psychotic Disorders	Drug-Induced Psychotic Disorder	1	Lecture
7	<b>PLASTIC SURGERY</b>	Types of Skin Grafts	1	Lecture
	Skin Grafts	Application of skin grafts in surgery	1	Lecture
8	<b>DERMATOLOGY</b>	Knowledge regarding common dermatological diseases and conditions Scabies	1	Lecture
			1	Lecture
9	<b>CARDIOLOGY</b>	Etiology, classification, primary and secondary hypertension	2	Lecture
	Hypertension	Isolated systemic hypertension	1	Lecture
		Cyanotic	1	Lecture
		Non Cyanotic	1	Lecture
	Congenital Heart Diseases	Coarctation of Aorta	1	Lecture
		Truncus Arteriosus	1	Lecture
10	<b>PULMONOLOGY</b>	Diseases of Pleura	1	Lecture
		Occupational Lung Diseases	1	Lecture
		Ca Bronchus	1	Lecture
		Pulmonary Hypertension	1	Lecture
11	<b>INFECTION CONTROL</b>	Transmission based precautions	1	Lecture
		Basic Microbiology for Infection Prevention & Control	1	Lecture

### TEACHING HOURS ALLOCATION

S. No	Subject	Teaching Hours	Practical Hours
1	Physiology	27	10
2	Biochemistry	13	12
3	Pathology	15	-

4	Anatomy	5	6
5	Medicine	4	-
6	Community Medicine	2	-
7	Pharmacology	1	-
8	CBL 4 (Anatomy)*	8	-
9	CBL 5 (Physiology)*	10	-
10	Islamic Study	2	-
11	Pakistan Study	2	-
12	Anesthesia	3	-
13	Critical Care	4	-
14	Family Medicine	2	-
15	Psychiatry	2	-
16	Plastic Surgery	2	-
17	Dermatology	2	-
18	Cardiology	7	-
19	Pulmonology	4	-
20	Infection Control	2	-
<b>Total hours</b>		<b>117</b>	<b>28</b>

\*Minimum 2 hours are allotted for each CBL session per Module

S. No	Tagged Subject	Teaching Hours
1	Behavioral Sciences	1
2	Professionalism	2
3	Communication Skills	4
4	Research	7
<b>Total hours</b>		<b>14</b>

## ASSESSMENT BLUEPRINT

### BLOOD-I MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

**MUSCULOSKELETAL-I MODULE**  
**FIRST PROFESSIONAL MBBS**

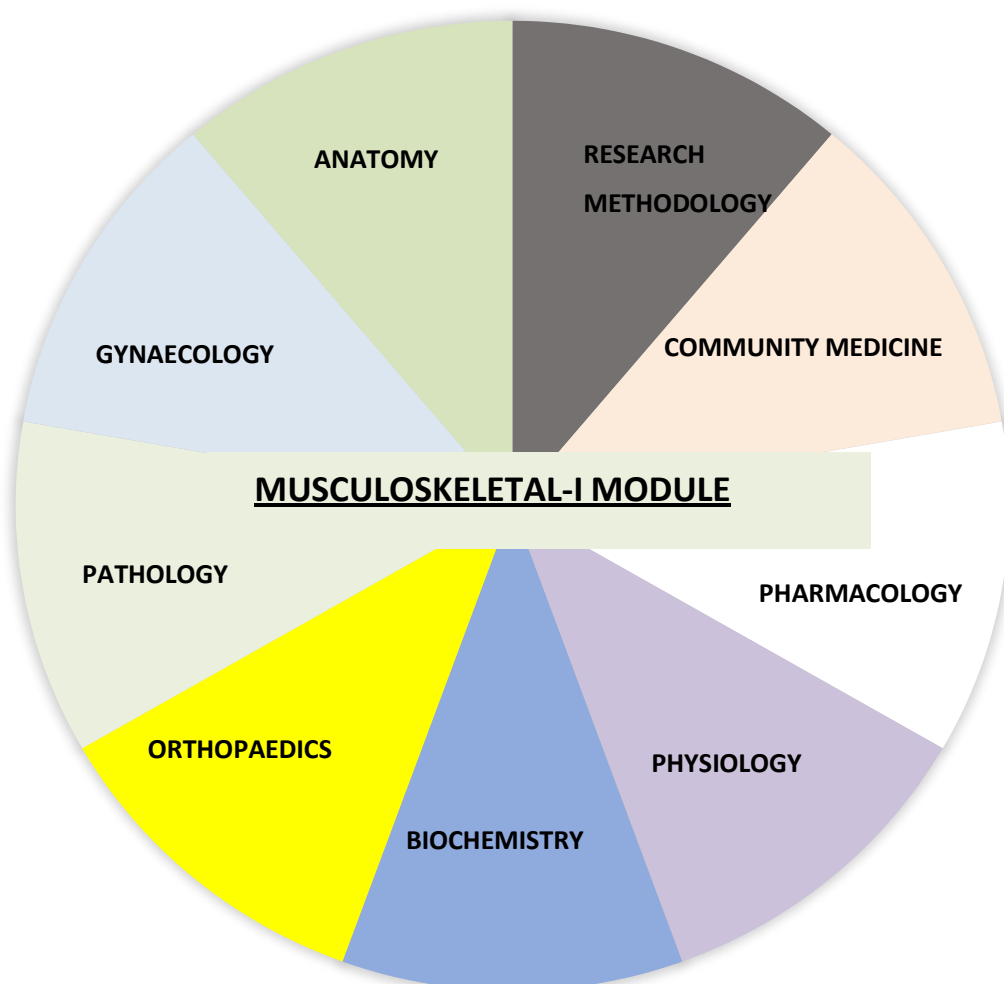


## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Foundation-I, Blood-I, CVS-I, Musculoskeletal-I and Respiratory-I Modules which links basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF MUSCULOSKELETAL-I MODULE



## MODULE OVERVIEW

### MUSCULOSKELETAL-I MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	First professional
<b>Duration</b>	8 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

MUSCULOSKELETAL-I MODULE COMMITTEE			
Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Dr. Saqib Baloch	Anatomy	Assistant Professor
2.	Dr. Shahab Hanif	Anatomy	Assistant Professor
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

## INTRODUCTION

This fascinating session will act as a foundation and is crucial to your future practice as physicians. This module includes a number of interactive tasks that are meant to make your learning engaging and fruitful. In life, motility is the most crucial aspect. All living things exhibit some sort of movement. The human locomotor system is exquisitely designed and arranged. The only other mammal with two feet is the human. Our musculoskeletal system is therefore ideally positioned to oppose the pull of gravity. The Holy Quran quotes God as saying that He created man in the finest possible way.

### RATIONALE

The goal of this module is to provide a strong foundation in the anatomy and physiology of different muscles, bones, and joints. Additionally, information about its clinical applications is provided by this. It is believed that musculoskeletal issues account for one out of every four primary care consultations. People are likely to experience musculoskeletal issues at some point in their lives. These issues can range from common conditions like osteoarthritis or back discomfort to more serious conditions like rheumatoid arthritis or profoundly crippling limb damage. Additionally, a lot of musculoskeletal issues are chronic illnesses.



The most prevalent symptoms are pain and disability, which have an effect on people's quality of life as well as, crucially, their capacity for independent living and employment. Students will have the chance to connect their understanding of fundamental science to real-world clinical issues throughout this module. You will be better able to link ideas and remember the material for your subsequent clinical education if you are taught pertinent basic sciences with clinical examples.

## LEARNING OBJECTIVES

### Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Develop an understanding of the fundamental components of the musculoskeletal system.
2. Explain the structure & function of the musculoskeletal (MSK) components of limbs and back.
3. Describe how injury and disease alter the MSK structure & function.
4. Integrate concepts relating to various metabolic processes, their disorders and relevant lab investigations in the study of human MSK system.
5. Describe the role of the limbs (upper/lower) in musculoskeletal support, stability and movements.
6. Describe the development of the limbs & correlate it with organization and gross congenital anomalies of the limbs.
7. Identify the anatomical features of bones, muscles & neurovascular components of the limbs and correlate them with their functions, injuries and clinical problems.
8. Describe the types, formation, stability, function & clinical significance of joints of the upper and lower limb.
9. Describe the basic histology of muscle fibers including its molecular structure (Sarcomere).
10. Explain the mechanism of excitation and contraction of skeletal and smooth muscles.
11. Describe the basis for the use of therapeutic agents to modulate neuromuscular transmission.
12. Describe the general principles of MSK pain management.
13. Describe ergonomics and its principles. Prevention of different MSK disorders.
14. Interpret the mechanism of post-mortem rigidity. (spiral II)
15. Give an overview of pathology of bones, muscles and joints.
16. Explain the role of different minerals, hormones and specific metabolic products related to the musculoskeletal system and correlate them with their relevant clinical metabolic disorders.
17. Interpret the relevant laboratory investigations for diagnosis of common musculoskeletal disorders. (Spiral two)
18. To develop the critical thinking and analysis in the context of various case scenarios pertaining to locomotors system.

### Skills / Psychomotor Domain:

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

1. Completing actual tasks in an orderly and secure manner as directed
2. Accurately make and document observations.
3. Describe the basic laboratory techniques and use of microscope.
4. Follow the basic laboratory protocols.
5. Demonstrate the anatomical structures of the limbs in a dissected cadaver/Model/prosecuted specimen & X-ray.

6. Demonstrate the provision of first aid measures in case of a limb fracture.
7. Communicate effectively in a team with colleagues and teachers.

**Attitude / Affective Domain:**

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

1. Demonstrate respect and care for the cadaver and prosected parts.
2. Demonstrate humbleness and use socially acceptable language during academic and social interactions with colleagues and teachers.
3. Make ethically competent decisions when confronted with an ethical, social or moral problem related to MSKS in professional or personal life.
4. Discuss ethical issues social and preventive aspect of health care in the context of MSK system.
5. To create awareness about the ethical, social and preventive aspect of health care in the context of locomotor system.

**Outcomes of Musculoskeletal-I Module**

1. Knowledgeable
2. Skillful
3. Community Health Promoter
4. Problem-solver
5. Professional
6. Researcher
7. Leader and Role Model

**THEMES FOR MUSCULOSKELETAL-I MODULE**

SNO	Theme	Duration
1	Pectoral region and Breast	1 week
2	Back, Axilla and Shoulder joint	1 week
3	Brachial Plexus and Arm	1 week
4	Forearm, hand and carpal tunnel syndrome	1 week
5	Anterior thigh and femoral hernia	1 week
6	Gluteal region, hip joint and Sciatic nerve	1 week
7	Anterior compartment of leg and compartment syndrome	1 week
8	Posterior compartment of leg and foot	1 week

**SPECIFIC LEARNING OBJECTIVES THEME WISE**

**THEME 1: PECTORAL REGION AND BREAST**

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
ANATOMY				

<b>01</b>	Define the different regions of the upper limb Identify various compartments of arm, forearm & hand. Define the axial and appendicular skeleton and define the girdle bones. Identify the joints of upper limb.	<b><u>LM-S1-ANA-G-1</u></b> Introduction to locomotor system & Organization of upper limb	Demonstration	BCQs, SAQs, OSPE, Viva
<b>02</b>	Define the pectoral region. Describe its muscles. Identify the general features and different land marks for side determination and the attachments of various muscles on clavicle.	<b><u>LM-S1-ANA-G-2</u></b> Pectoral region & the clavicle	Demonstration	BCQs, SAQs, OSPE, Viva
<b>03</b>	Discuss development of Bone Describe the Intramembranous ossification Describe the Endochondral ossification Describe the Ossification of limb bones Describe the development of joints Describe the development of cartilage	<b><u>LM-S1-ANA-E-1</u></b> Development of skeletal system	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>04</b>	Identify the general features and different land marks for side determination and the attachments of various muscles on the Scapula. Define the arrangement, attachments, neurovascular bundle and actions of muscles of back.	<b><u>LM-S1-ANA-G-3</u></b> Scapular region (scapula bone, muscles & neurovascular Bundle of back)	Demonstration	BCQs, SAQs, OSPE, Viva
<b>05</b>	Name the bony components, type & variety & movements of sternoclavicular, acromioclavicular joints.	<b><u>LM-S1-ANA-G-4</u></b> Sternoclavicular acromioclavicular Joints	Demonstration	BCQs, SAQs, OSPE, Viva

<b>06</b>	Define the extent and quadrants of the breast Describe the blood supply and lymphatic drainage of breast in the female with its clinical significance.	<b><u>LMS-ANA-G-5</u></b> Anatomy of the breast	Interactive Lecture	BCQs, SAQs, Viva
<b>07</b>	Describe breast development in puberty & in the adult Describe histology of mammary gland in non-lactating, lactating & during pregnancy. Identify and describe the nipple and areola. Describe the histologic changes in breasts during pregnancy & lactation	<b><u>LM-S1-ANA-H-1</u></b> Histology of breast	Interactive Practical	BCQs, SAQs, OSPE, Viva

#### **PHYSIOLOGY**

<b>08</b>	Describe the role of muscles, bones, & joints in movements Describe types of movements	<b><u>LM-S1-PHY-1</u></b> Introduction to Musculoskeletal system (motor system)	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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<b>09</b>	Describe the Physiology of mammary gland Describe the Lactation reflex Describe weaning Describe the Hormonal effect	<b><u>LM-S1-PHY-2</u></b> Physiology of breast and lactation	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>10</b>	Identify and name various parts of power lab Describe the functions of various parts of power lab Explain how mechanical events are converted to electrical current Demonstrate Nerve conduction velocity	<b><u>LM-S1-Phy-3</u></b> Introduction to Power Lab	Interactive Practical	BCQs, SAQs, OSPE, Viva
<b>BIOCHEMISTRY</b>				
<b>11</b>	Heteropolysaccharides, Classification & functions Biochemical significance of Heteropolysaccharides in formation of Extracellular Matrix.	<b><u>LM-S1-BIO-01</u></b> Role of Heteropolysaccharides (Glycosaminoglycans)	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>12</b>	Mucopolysaccharidoses: Classification, Deficient Enzymes Clinical Manifestation	<b><u>LM-S1-BIO-02</u></b> Mucopolysaccharidoses	Interactive Lecture	BCQs, SAQs, OSPE, Viva

<b>13</b>	General introduction and classification of Minerals.	<b><u>LM-S1-BIO-03</u></b> Classification of Minerals	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>CLINICAL LECTURE</b>				
<b>14</b>	Define bone density and factors which are responsible to maintain bone density Define Pathogenesis and clinical course of change in bone density and conditions associated with lactation. Discuss its complications and management.	<b><u>LM-S1-Gyn &amp; Obs-1</u></b> Changes in bone density with lactation	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>RESEARCH</b>				
<b>15</b>	Describe the Patho-physiology of mammary gland disorders Describe the Lactation reflex Describe weaning Describe the Hormonal effect Student guide for complete protocol of lactation and weaning	<b><u>LM-S1-RES-M-1</u></b> Breast feeding guide for medical profession	Interactive Lecture	BCQs, SAQs,
<b>COMMUNITY MEDICINE</b>				
<b>16</b>	To discuss the epidemiology of poliomyelitis. To describe agent, host environment factors and modes of transmission. To identify the risk factors of Poliomyelitis. To discuss the prevention and control of poliomyelitis.	<b><u>LM-S1-CM-1</u></b> Poliomyelitis	Interactive Lecture	BCQs, SAQs,

## THEME 2: BACK, AXILLA AND SHOULDER JOINT

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
17	Describe the attachments, nerve supply and the actions of the muscles of the back. Define the effects of paralysis of these muscles	<b><u>LM-S1-ANA-G-6</u></b> Muscles of back	Demonstration	BCQs, SAQs, OSPE, Viva
18	Discuss the arterial anastomosis around the scapula. Explain the neurovascular bundle of scapula.	<b><u>LMS-ANA-G-7</u></b> Anastomosis around scapula & Neurovascular bundle of scapula	Demonstration	BCQs, SAQs, OSPE, Viva
19	Name the bony components, type & variety, the attachment of capsule and ligaments of this joint. Demonstrate various muscles & movements at the joint. Identify the factors stabilizing or weakening the shoulder joint.	<b><u>LM-S1-ANA -G-8</u></b> The Shoulder Joint	Interactive Lecture	BCQs, SAQs, OSPE, Viva
20	Discuss the developmental stages of skull and its clinicals	<b><u>LMS-ANA-E-2</u></b> Development of skull	Interactive Lecture	BCQs, SAQs, Viva
21	Define the shape, location boundaries and contents of Axilla. Discuss the formation, course and relations of axillary vessels Describe arrangement of axillary lymph nodes and their area of drainage.	<b><u>LM-S1-ANA -G-9</u></b> Axilla: Boundaries & Contents	Demonstration	BCQs, SAQs, OSPE, Viva
22	Describe and draw the formation of the brachial plexus. Mention different parts of brachial plexus and their location. Identify different nerves with their root values. Discuss the effects of injury to different sites of brachial plexus.	<b><u>LM-S1-ANA -G-10</u></b> Brachial Plexus	Interactive Lecture	BCQs, SAQs, OSPE, Viva
23	Identify the skeletal muscle under light microscope	<b><u>LM-S1-ANA-H-2</u></b> Histology of skeletal muscle	Interactive Practical	BCQs, SAQs, OSPE, Viva
	Describe the structural basis of muscle striations. Recognize the structural elements that produces muscle contraction and brings the movement of a body part.			

<b>PHYSIOLOGY</b>				
24	Describe the daily intake, absorption & excretion of Ca from GIT and kidney Describe the distribution of Ca in the bones Describe the various cells of the bones and their function in Ca homeostasis Describe the mechanism by which Ca is released in blood from Bone	<b><u>LM-S1-PHYS-4</u></b> Calcium homeostasis	Interactive Lecture	BCQs, SAQs, OSPE, Viva
25	Demonstrate SMT on power lab What is latent period What is the duration of SMT show recruitment in the twitch response as the stimulus strength increases	<b><u>LM-S1-PHYS-5</u></b> SMT & Summation	Interactive Practical	BCQs, SAQs, OSPE, Viva
<b>BIOCHEMISTRY</b>				
26	Sources, RDA, Absorption, transport, Functions, Clinical Aspects	<b><u>LM-S1-Bio-4</u></b> Calcium metabolism.	Interactive Lecture	BCQs, SAQs, OSPE, Viva
27	Sources, RDA, Absorption, transport, Functions, Clinical Aspects	<b><u>LM-S1-Bio-5</u></b> Magnesium & Phosphorus Metabolism	Interactive Lecture	BCQs, SAQs, OSPE, Viva
28	Sources, RDA, Absorption, transport, Functions, Clinical Aspects	<b><u>LM-S1-Bio-6</u></b> Vitamin D metabolism.	Interactive Lecture	BCQs, SAQs, OSPE, Viva
29	Describe the miscellaneous minerals: Iodine, Floride, Selenium, Cobalt, Zinc, Copper	<b><u>LM-S1-Bio-7</u></b> Miscellaneous Minerals	Interactive Lecture	BCQs, SAQs, OSPE, Viva
30	Role of Parathyroid, Calcitonin & Vitamin D	<b><u>LM-S1-Bio-8</u></b> Regulation of Calcium & PO <sub>4</sub> Metabolism	Interactive Lecture	BCQs, SAQs, OSPE, Viva
31	Chemical composition of bone. Bone remodeling. Normal composition of synovial fluid.	<b><u>LM-S1-Bio-9</u></b> Chemical composition of bone	Interactive Lecture	BCQs, SAQs, OSPE, Viva

32	Importance of calcium as macro- mineral. RDA, Absorption, factors influencing absorption. clinical manifestation of excess and deficiency states.	<b><u>LM-S1-Bio-10</u></b> Estimation of serum calcium	Interactive practical	BCQs, SAQs, OSPE, Viva
<b>PATHOLOGY</b>				
33	Define Vitamin D Explain significance of vitamin D in the body Describe the different deficiency states related with vitamin D Discuss the prevention of Vitamin D Deficiency	<b><u>LM-S1-PATH-1</u></b> Vitamin D deficiency	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>PHARMACOLOGY</b>				
34	List various drugs used in hypocalcemia Discuss their clinical uses Explain their adverse effects	<b><u>LM-S1-PHARM-1</u></b> Drugs used in Hypocalcemia	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>COMMUNITY MEDICINE</b>				
35	To define school health services and its importance. To define the essential health components of school health To describe the effect of poor sitting posture on musculoskeletal system To describe the duties of school medical officer and to learn about preventive strategies regarding diseases related to school health	<b><u>LM-S1-CM-2</u></b> School health services	Interactive Lecture	BCQs, SAQs,

### THEME 3: THE ARM AND THE FOREARM

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
36	Explain the arrangement of different functional groups of muscles in the anterior compartment of arm & their attachment Demonstrate the actions of above muscles Describe the neurovascular structures and their important relations	<b><u>LM-S1-ANA-G-11</u></b> Humerus bone Anterior compartment of arm	Demonstration	BCQs, SAQs, OSPE, Viva
37	Define cubital fossa. Discuss its boundaries Clinical correlates	<b><u>LM-S1-ANA-G-12</u></b> Cubital fossa	Interactive lecture	BCQs, SAQs, OSPE, Viva

<b>38</b>	Explain the arrangement of different functional groups of muscles in the post compartment arm & their attachment Demonstrate the actions of above muscles Describe the neurovascular structures and their important relations	<b><u>LM-S1-ANA-G-13</u></b> Posterior compartment of arm & Elbow joint	Demonstration	BCQs, SAQs, OSPE, Viva
<b>39</b>	Identify the general features of Radius & ulna. Discuss the attachments of various muscles on the Radius & ulna. Discuss the radioulnar joints.	<b><u>LM-S1-ANA-G-14</u></b> Radius & Ulna (radioulnar joints)	Demonstration	BCQs, SAQs, OSPE, Viva
<b>40</b>	Explain the arrangement of different functional groups of muscles in the anterior compartment of fore-arm & their attachment. Describe the neurovascular structures and their important relations	<b><u>LM-S1-ANA-G-15</u></b> Anterior compartment of forearm	Demonstration	BCQs, SAQs, OSPE, Viva
<b>41</b>	Explain the arrangement of different functional groups of muscles in the posterior comp of forearm & their attachment. Describe the neurovascular structures and their important relations	<b><u>LM-S1-ANA-G-16</u></b> Posterior compartment of forearm	Demonstration	BCQs, SAQs, OSPE, Viva

<b>42</b>	Describe the Ossification of vertebra ribs & sternum and its clinicals	<b><u>LM-S1-ANA-E-3</u></b> Development of vertebra, ribs, & sternum	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>43</b>	Identify the smooth and cardiac muscles under light microscope Describe the structural basis of muscle striations & differentiate the two muscles. Recognize the function and organization of the connective tissue in muscle.	<b><u>LM-S1-ANA-H-3</u></b> Histology of smooth and cardiac muscles	Interactive Practical	BCQs, SAQs, OSPE, Viva

#### PHYSIOLOGY

<b>44</b>	Briefly describe the structure of Sarcomere & identify various bands and filaments Describe the changes in sarcomere during contraction Describe the sliding theory of contraction Describe the structure of myosin and actin filaments and their arrangements Describe walk along theory – power stroke	<b><u>LM-S1-PHYS-6</u></b> Properties of skeletal muscle contraction	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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45	Define Describe the process of excitation contraction coupling Describe the role of sarcoplasmic reticulum in contraction Describe the role of Ca during contraction	<b><u>LM-S1-PHYS-7</u></b> Molecular basis of skeletal muscle contraction	Interactive Lecture	BCQs, SAQs, OSPE, Viva
46	List the components of neuromuscular junction Explain the sequence of events during transmission Define end plate potential Describe the mechanism by which acetylcholine cause generation of local potential	<b><u>LM-S1-PHYS-8</u></b> Neuro Muscular Junction	Interactive Lecture	BCQs, SAQs, OSPE, Viva
47	Describe and demonstrate how velocity of nerve conduction is estimated	<b><u>LM-S1-Physio-9</u></b> Velocity of nerve conduction	Interactive Practical	BCQs, SAQs, OSPE, Viva

#### **BIOCHEMISTRY**

48	Sources, Daily requirements, intestinal absorption, transport and biochemical role and regulation of Vit-D3	<b><u>LM-S1-Bio-11</u></b> Estimation of Serum Vit.D3	Interactive Practical	BCQs, SAQs, OSPE, Viva
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#### **PHARMACOLOGY**

49	List various drugs used in hypercalcemia Discuss their clinical uses Explain their adverse effects	<b><u>LM-S1-PHARM-2</u></b> Drugs used in Hypercalcemia	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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#### **CLINICAL LECTURE:**

50	Enlist disorders of skeletal muscle disorders and factors which are responsible to it Define Pathogenesis and clinical course of conditions associated with skeletal muscle disorders Discuss it's complications and management	<b><u>LM-S1-Ortho-1</u></b> Disorders of voluntary muscles	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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#### **COMMUNITY MEDICINE**

51	To define the term accidents and injuries To learn about the global, regional and local statistics of accidents To identify the types of accidents To identify the common causes of road traffic accidents To learn about preventive strategies to overcome the causes	<b><u>LM-S1-CM-3</u></b> Accidents and injuries	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
52	Describe the location, destination, course & relations of arteries & their branches in upper limb. Identify and discuss the deep veins of upper limb. Describe the location, destination, course & relations of nerves & their branches in upper limb.	<b><u>LM-S1-ANA-G-17</u></b> Neuromuscular bundle of the upper limb	Demonstration	BCQs, SAQs, OSPE, Viva
53	Describe the type, variety, attachment of capsule and ligaments of this joint. demonstrate various movements at this joint. Describe the structural organization of the Flexor & Extensor Retinaculum. Discuss the carpal tunnel syndrome.	<b><u>LM-S1-ANA-G-18</u></b> Wrist joint	Interactive lecture	BCQs, SAQs, OSPE, Viva
54	Describe the bony arrangement of the hand. Describe the joints of the hand.	<b><u>LM-S1-ANA-G-19</u></b> Osteology of the hand and the joints of the hand.	Demonstration	BCQs, SAQs, OSPE, Viva
55	Discuss the cutaneous supply, arteries & veins of the palm of the hand. define fibrous flexor sheath. Define the palmar aponeurosis, facial spaces. Describe the small muscles of the hand.	<b><u>LM-S1-ANA-G-20</u></b> Palm of the hand	Demonstration	BCQs, SAQs, OSPE, Viva
56	Discuss the dorsal venous arch. Describe insertion of the long extensors tendons.	<b><u>LM-S1-ANA-G-21</u></b> Dorsum of the hand	Demonstration	BCQs, SAQs, OSPE, Viva
57	Describe different regions of lower limb. Identify the various bones forming skeleton of lower limb. Describe general arrangement of superficial & deep fasciae of lower limb Demonstrate the bones of pelvic girdle. Identify different landmarks in different regions of lower limb	<b><u>LM-S1-ANA-G-22</u></b> Introduction to lower limb / Organization of skeleton of lower limb	Interactive lecture	BCQs, SAQs, OSPE, Viva

58	Identify the superficial arteries of lower limb Name and discuss superficial veins of lower limb Highlight the course of great and small saphenous vein Describe the superficial lymphatic vessels and lymph nodes of lower limb Discuss clinical correlates.	<b><u>LM-S1-ANA-G-23</u></b> Superficial veins, arteries, lymph nodes & cutaneous supply of the lower limbs	Demonstration	BCQs, SAQs, OSPE, Viva
59	Describe the development of skeletal muscle. Discuss the development of Myotomes List derivatives of Eboxial and Primaxial divisions of	<b><u>LM-S1-ANA-E-4</u></b> Development of skeletal muscles	Interactive lecture	BCQs, SAQs, OSPE, Viva

	myotomes			
60	Classify bone on developmental and structural basis. Differentiate between woven bone and lamellar bone. Differentiate between compact bone and spongy bone	<b>LM-S1-ANA-H-4</b> Histology of bones	Interactive Practical	BCQs, SAQs, OSPE, Viva
<b>PHYSIOLOGY</b>				
61	Describe various energy systems of muscle, their energy yield and endurance Describe Muscle recovery after exercise Describe 2 debt	<b>LM-S1-PHYS-10</b> Role of muscles in exercise	Interactive Lecture	BCQs, SAQs, OSPE, Viva
62	Describe the role of skin in homeostasis Describe the excretory function of skin Describe endocrine function of kidney Describe the role of skin in thermoregulation Describe skin as sense organ Describe the medico-legal importance of skin Describe photo-protection function of skin	<b>LM-S1-Physio-11</b> Functions of skin	Interactive Lecture	BCQs, SAQs, OSPE, Viva
63	Note and describe the Electrical graph of muscle activity Apply electrodes at appropriate body muscle Study and describe motor unit recruitment phenomenon	<b>LM-S1-Physio-12</b> Electrograph of muscle activity EMG	Interactive Practical	BCQs, SAQs, OSPE, Viva

<b>BIOCHEMISTRY</b>				
64	Describe the Collagen Structure and synthesis, Types, Role of vitamin C in synthesis of Collagen	<b>LM-S1-BIO-12</b> Collagen Structure and synthesis	Interactive Lecture	BCQs, SAQs, OSPE, Viva
65	Brief overview of inherited Collagen Disorders and their clinical manifestation	<b>LM-S1-BIO-13</b> Overview of inherited Collagen disorders	Interactive Lecture	BCQs, SAQs, OSPE, Viva
66	Estimation, RDA, Effects, regulation and clinical manifestation of excess and deficiencies.	<b>LM-S1-BIO-14</b> Estimation of serum phosphorus	Interactive Practical	BCQs, SAQs, OSPE, Viva
<b>PHARMACOLOGY</b>				
67	List the drugs used in the treatment of osteoporosis Explain their mode of action Explain their pharmacokinetics State the side effects of these drug	<b>LM-S1-PHARM-3</b> Drugs used in Osteoporosis	Interactive Lecture	BCQs, SAQs, OSPE, Viva
68	Classify different muscle relaxants. Discuss mechanism of their action Explain clinical uses and their adverse effects	<b>LM-S1-PHARM-4</b> Drugs used as Skeletal muscle relaxant	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>CLINICAL LECTURE</b>				

69	Define of osteoporosis Describe generalized and localized osteoporosis List the primary and secondary causes of generalized osteoporosis Define Pathogenesis and clinical course Discuss it's complications and management	<u>LM-S1-Ortho-2</u> Clinical manifestation of Osteoporosis	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>RADIOLOGY</b>				
70	Interpretate the normal AP and Lateral view of upper limb radiographs (shoulder, arm, elbow, forearm, wrist and hand) Identify the bones, soft shadows and artifacts (if any) in upper limb radiographs	<u>LM-S1-Radio-1</u> Radiographs of Upper Limb	Interactive Lecture	BCQs, OSPE, Viva

**THEME 5: ANTERIOR THIGH AND FEMORAL HERNIA**  
**THEME 6: GLUTEAL REGION, HIP JOINT AND SCIATIC NERVE**

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
70	Identify the parts of hip bone. Determine the side of the bone. Describe general features of each part of hip bone. Identify the bone. Determine the side of the bone. Describe the anatomical position of the bone.	<u>LM-S1-ANA-G-24</u> Hip bone + Femur	Demonstration	BCQs, SAQs, OSPE, Viva
71	Discuss the division of thigh into compartments Enumerate the muscles of anterior compartment of thigh and their respective actions. Describe the innervation and blood supply of muscles of anterior compartment.	<u>LM-S1-ANA-G-25</u> Anterior compartment of thigh	Demonstration	BCQs, SAQs, OSPE, Viva
72	Describe the Femoral triangle, its boundaries and contents. Discuss femoral sheath and its contents and the clinical conditions associated.	<u>LM-S1-ANA-G-26</u> Femoral triangle	Demonstration	BCQ, SAQ, OSPE, VIVA
73	Describe the development of smooth and cardiac muscle. Discuss the development of Myotomes List derivatives of epaxial and hypaxial divisions of myotomes	<u>LM-S1-ANA-E-5</u> Development of smooth & cardiac muscles	Interactive lecture	BCQs, SAQs, OSPE, Viva
74	Discuss the muscles of medial compartment of the thigh. Discuss the blood & nerve supply of these muscles. Describe the actions of the muscles of medial compartment of thigh.	<u>LM-S1-ANA-G-27</u> Medial compartment of thigh	Demonstration	BCQs, SAQs, OSPE, Viva

75	Describe the location of gluteal region. Discuss about bones and ligaments of gluteal region. Discuss the muscles of the gluteal region and their respective actions. Discuss the nerves and blood vessels of gluteal region	<b><u>LM-S1-ANA-G-28</u></b> The Gluteal region	Demonstration	BCQs, SAQs, OSPE, Viva
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76	Describe the articular surfaces of hip joint along with capsular attachment Enumerate the ligaments of hip joint & describe their attachments. Discuss the clinical correlates	<b><u>LM-S1-ANA-G-29</u></b> Hip joint	Interactive lecture	BCQs, SAQs, OSPE, Viva
77	Identify different types of cartilage under light Microscope. Define distinctive microscopic features of each type.	<b><u>LM-S1-ANA-H-5</u></b> Histology of Hyaline Cartilage	Interactive practical	BCQs, SAQs, OSPE, Viva

**PHYSIOLOGY**

78	Differentiate among tetanization, tetanus and tetany Describe briefly the staircase phenomenon (treppe)	<b><u>LM-S1-Physio-13</u></b> Tone and power of muscle effect of tetanus & staircase phenomenon	Interactive practical	BCQs, SAQs, OSPE, Viva
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**BIOCHEMISTRY**

79	Describe the Metabolic pathway for synthesis of purines and pyrimidines	<b><u>LM-S1-BIO-15</u></b> Metabolic pathway for synthesis of purines and pyrimidines	Interactive Lecture	BCQs, SAQs, OSPE, Viva
80	Discuss in detail: Metabolic pathways for nucleic acids degradation. Inherited associated disorders. Uric acid metabolic disorders.	<b><u>LM-S1-BIO-16</u></b> Metabolic pathways for nucleic acids degradation And related disorders.	Interactive Lecture	BCQs, SAQs, OSPE, Viva
81	Demonstrate the methods to estimate the serum uric acid.	<b><u>LM-S1-BIO-17</u></b> Estimation of serum uric acid	Interactive Practical	BCQs, SAQs, OSPE, Viva

**PHARMACOLOGY**

82	Classify the drugs Describe their general properties. Explain the mechanism of action. State their actions in general.	<b><u>LM-S1-PHARM-5</u></b> Drugs used in Osteoporosis	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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**PATHOLOGY**

83	Mention types of arthritis Define Osteoarthritis? & Rheumatoid arthritis Describe their clinical features	<b><u>LM-S1-PATH-2</u></b> Arthritis	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>CLINICAL LECTURE</b>				
84	Classify the drugs Describe their general properties. Explain the mechanism of action. State their actions in general.	<b><u>LM-S1-Ortho-3</u></b> Clinical manifestation of Arthritis	Interactive Lecture	BCQs, SAQs, OSPE, Viva

### THEME 7: ANTERIOR COMPARTMENT OF LEG AND COMPARTMENT SYNDROME

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
85	Describe the muscles of posterior compartment of thigh. Describe the arterial supply of posterior compartment of thigh. Discuss the trochanteric and cruciate anastomosis at the back of thigh. Describe the venous drainage of this region.	<b><u>LM-S1-ANA-G-30</u></b> Post: compartment of thigh + popliteal fossa	Demonstration	BCQs, SAQs, OSPE, Viva
86	Identify the bone. Determine the side of the bone. Describe the anatomical position of the bone. Identify the bone and its side determination. Mark the attachment of muscles and ligaments. Describe the nerve injuries related to it.	<b><u>LM-S1-ANA-G-31</u></b> Tibia & fibula	Demonstration	BCQs, SAQs, OSPE, Viva
87	Discuss the site and time of appearance of upper and lower limb buds Define the source of mesoderm forming the limb muscles	<b><u>LM-S1-ANA-E-6</u></b> Development of Limbs & its clinical 1	Interactive lecture	BCQs, SAQs, OSPE, Viva
88	Discuss formation of different compartments of leg Explain arrangement of the muscles in the anterior compartments of leg and their actions. Describe the neurovasculature of these compartments of leg Identify the bones forming the architecture of foot. Discuss the joints formed by these bones.	<b><u>LM-S1-ANA-G-32</u></b> Anterior compartment of leg & dorsum of foot	Demonstration	BCQs, SAQs, OSPE, Viva
89	Explain arrangement of the muscles in the lateral compartments of leg and their actions. Describe the neurovasculature of	<b><u>LM-S1-ANA-G-33</u></b> Lateral compartment of leg & tibiofibular joint	Demonstration	BCQs, SAQs, OSPE, Viva

	these compartments of leg Discuss clinical correlates like compartment syndrome of leg.			
90	Describe the articular surfaces of the knee joint along with capsular attachment. Describe the ligaments & bursa of the knee joint and discuss their attachments. Describe the movements of the knee joint.(locking & unlocking mechanism)	<b><u>LM-S1-ANA-G-34</u></b> Knee joint	Interactive Lecture	BCQs, SAQs, OSPE, Viva
91	Define general properties of cartilage. Differentiate different types of cartilage. Explain process of growth of cartilage. Identify different types of cartilage under light Microscope. Define distinctive microscopic features of each type.	<b><u>LM-S1-histo-6</u></b> Histology of elastic and fibrous cartilage	Interactive practical	BCQs, SAQs, OSPE, Viva

#### PHYSIOLOGY

92	Describe the role of skin in homeostasis Describe the excretory function of skin Describe endocrine function of kidney Describe the role of skin in thermoregulation Describe skin as sense organ Describe the medico-legal importance of skin Describe photo-protection function of skin	<b><u>LM-S1-PHYS-14</u></b> Physiology of Skin	Interactive Lecture	BCQs, SAQs, OSPE, Viva
93	Define Body Temperature Different site of taking temperature Normal physiology of maintaining temperature	<b><u>LM-S1-PHYS-15</u></b> Body temperature before and after exercise	Interactive practical	BCQs, SAQs, OSPE, Viva

#### BIOCHEMISTRY

94	Demonstrate the principals and types of chromatography. Interpretation of clinical conditions and investigations related to use in chromatography.	<b><u>LM-S1-Bio-18</u></b> Chromatography	Interactive practical	BCQs, SAQs, OSPE, Viva
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#### PHARMACOLOGY

95	Classify the drugs Describe their general properties. Explain the mechanism of action. State their actions in general.	<b><u>LM-S1-PHARM-6</u></b> Drugs used in Rheumatoid Arthritis	Interactive Lecture	BCQs, SAQs, OSPE, Viva
96	Classify the drugs Describe their general properties. Explain the mechanism of action. State their actions in general.	<b><u>LM-S1-PHARM-7</u></b> Drugs used in Gout	Interactive Lecture	BCQs, SAQs, OSPE, Viva

**THEME 8: POSTERIOR COMPARTMENT OF LEG AND FOOT**

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
97	Explain the arrangement of the muscles in the posterior compartment of leg. Describe nerve supply of these muscles. Explain the actions of the muscles of posterior compartment. Discuss clinical correlates.	<u><b>LM-S1-ANA-G-35</b></u> Posterior compartment of leg	Demonstration	BCQs, SAQs, OSPE, Viva
98	Describe the architecture of arches of foot and the factors responsible for their maintenance. Identify the bones forming these arches. Describe the function of the arches of foot.	<u><b>LM-S1-ANA-G-36</b></u> Skeleton of foot & arches of foot	Demonstration	BCQs, SAQs, OSPE, Viva
99	Discuss the hand plate and formation of digital rays resulting into digits Describe the muscles involved in and process of rotation of limb Explain the congenital anomalies of the limbs	<u><b>LM-S1-ANA-E-7</b></u> Development of Limbs & its clinical 2	Interactive Lecture	BCQs, SAQs, OSPE, Viva
100	Describe the Ankle Joint. Describe the Superior and Inferior Tibio-Fibular Joints.	<u><b>LM-S1-ANA-G-37</b></u> Ankle ,subtalar & small joints of foot	Demonstration	BCQs, SAQs, OSPE, Viva
101	Identify the bones forming the architecture of sole of foot. Discuss the joints formed by these bones. Describe clinical correlates like flat foot and club foot.	<u><b>LM-S1-ANA-G-38</b></u> Sole of foot	Demonstration	BCQs, SAQs, OSPE, Viva
102	Explain the different nerve of lower limb and their root value. Discuss the causes of injuries. Enumerate the common sites of these nerve injuries Discuss the symptoms caused by these nerve injuries.	<u><b>LM-S1-ANA-G-39</b></u> Neurovascular bundle of lower limb	Demonstration	BCQs, SAQs, OSPE, Viva
103	Discuss the blood supply and nerve supply of sole of foot. Describe vascular and nervous supply of dorsum of foot.	<u><b>LM-S1-ANA-G-40</b></u> Neurovascular bundle of foot	Demonstration	BCQs, SAQs, OSPE, Viva



<b>104</b>	Describe the development of musculo-skeletal system. Discuss the development of Myotomes List derivatives of epaxial and hypaxial divisions of myotomes Describe the development of bones, joints & cartilage	<b><u>LM-S1-ANA-E-8</u></b> Overview of Embryological development of musculoskeletal system	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>105</b>	Describe the layers of the skin. Discuss the layers of the Epidermis. Describe the appendages of the skin. Briefly discuss the functions of the skin.	<b><u>LM-S1-ANA-H-7</u></b> Microscopic anatomy of the Skin	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>106</b>	Identify three layers of skin under light microscope Describe the structural basis & elements of skin. Recognize the function and organization of the connective tissue in skin	<b><u>LM-S1-ANA-H-8</u></b> Histology of skin	Interactive practical	BCQs, SAQs, OSPE, Viva
<b>107</b>	Identify three layers of skin under light microscope Describe the structural basis & elements of skin. Recognize the function and organization of the connective tissue in skin	<b><u>LM-S1-ANA-H-9</u></b> Histology of skin appendages	Interactive practical	BCQs, SAQs, OSPE, Viva

**PHARMACOLOGY**

<b>108</b>	Classify different Nicotinic blocking agents Discuss mechanism of their action Explain clinical uses and adverse effects	<b><u>LM-S1-PHARM-8</u></b> Nicotinic receptor agonists	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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<b>109</b>	Classify different Nicotinic blocking agents Discuss mechanism of their action Explain clinical uses and adverse effects	<b><u>LMS-PHARM-9</u></b> Nicotinic receptor antagonists	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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**CLINICAL LECTURE**

<b>110</b>	Define terms related to fracture: Stress Fracture, Incomplete fracture, Closed (simple fracture), Open (complicated) fracture, multi-fragmented fractures, complex fracture, Pathologic fractures Describe mechanism of bone healing Enlist complications of fracture Describe etiology & Pathogenesis of Pathologic fractures.	<b>LM-S1-Ortho-4</b> Fractures/Dislocations	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>PATHOLOGY</b>				
<b>111</b>	Classify different types of osteomyelitis List factors leading to their etiology Explain its pathogenesis	<b>LM-S1-PATH-3</b> Osteomyelitis	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>RADIOLOGY</b>				
<b>112</b>	Interpretate the normal AP and Lateral view of Lower limb radiographs (hip joint, thigh, knee, leg, ankle and foot) Identify the bones, soft shadows and artifacts (if any) in lower limb radiographs	<b>LM-S1-Radio-2</b> Radiographs of Lower Limb	Interactive Lecture	BCQs, OSPE, Viva

### TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>BEHAVIORAL SCIENCES</b>						
<b>Affective Domain</b>	Personality	Define personality. Describe factor affect personality development	Lecture/ Group Discussion	MSK1	1	MCQ,
	Motivation	Define motivation and describe the types of motivation	Lecture/ Group Discussion	MSK 1	1	MCQ
<b>Stress</b>	Stress and its management	Define and classify stress and stressors. Describe relationship of stress and stressor with illness. Describe the concept of life events and their relationship with stress and illness.	Lecture/ Group Discussion	MSK 1	1	MCQ and Formative

	Coping skills and Defense mechanism	Describe the concepts of adjustment and maladjustment? explain coping skills and describe the psychological defense mechanisms	Lecture/ Group Discussion	MSK 1	1	MCQ and Formative
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### PROFESSIONALISM

<b>Attributes of professionalism</b>	Differences between empathy and sympathy	Discriminate between empathy and sympathy	Lecture/ Group discussion/ Role play	MSK 1	2	MCQ, SEQ
<b>Personal Development Plan (PDP)</b>	Peer feedback session on PDP	Analyze critically his personal development plan (PDP)	Group Discussion among peers	MSK 1	2	MCQ

### COMMUNICATION SKILLS

<b>Communicate as a peer-teacher</b>	Recognizing the limits of one's knowledge and skills; and to ensure the accuracy of teaching content delivered to others	Knowing limitations	Lecture / Group Discussion,	MSK 1	2	MCQ
<b>Communicate with media and press</b>	Use of Social media/blogs for communication Communicating with Media and Press	Understanding of who should give information to the media and press and what form it should take, including the need to maintain confidentiality where individual patients are concerned	Lecture/Group Discussion, Role Play	MSK 1	2	Continuous Formative

### CLINICAL SCIENCES SUBJECTS

#### MSK

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>ISLAMIC STUDY</b> How to make my	Describe concept of Ibadah? How can our daily routine practice of our profession be made Ibadah?	1	Lecture

	profession Ibadah - The perspective of the Muslim doctors	Identify the strategy to make routine professional practice Ibadah and apply it in their own life.	1	Lecture
2.	<b>PAKISTAN STUDY</b>	Tertiary care hospitals-composition & functions	1	Lecture
		Medical teaching institutions	1	Lecture
3.	<b>ANAESTHESIA</b>	Describe induction method	1	Lecture
	General Anesthesia Management	Discuss maintenance of Anesthesia	1	Lecture
		Explain recovery phases after Anesthesia	1	Lecture
4.	<b>CRITICAL CARE</b>	Trauma Systems	1	Lecture
	Trauma	Acute Limb Ischaemia	1	Lecture
5.	<b>ORTHOPAEDICS &amp; TRAUMA</b>	Fracture healing terminologies	1	Lecture
	Fractures, wounds and Dislocation	Principles of Fracture Treatment	1	Lecture
		Treatment by Fracture Location	1	Lecture
		Treatment by fracture region	1	Lecture
		Suture Techniques	1	Lecture
		Close treatment of Dislocation of Upper Limb joints (shoulder, elbow and small hand joints)	1	Lecture
		Close treatment of Dislocation of Lower Limb joints (hip, and foot joints)	1	Lecture
		Close treatment of fractures of humerus, tibia, fibula, radius and ulna	1	Lecture
		External fixation of fractures of the limbs	1	Lecture
6.	<b>FAMILY MEDICINE</b>	Values based Medicine	1	Lecture
	Core concept	International Health Care systems	1	Lecture
9	<b>Plastic Surgery</b>	Fingertip and tendon injuries	1	Lecture
	<b>Upper Limb Surgery</b>	Soft tissue coverages with local and regional flaps	1	Lecture
9	<b>Psychiatry</b>	Organic mental Disorders	1	Lecture
	<b>Psychotic Disorders</b>	Symptomatic Mental Disorder	1	Lecture
10	<b>Emergency Medicine</b>			
11	<b>Dermatology</b>	Eczema	1	Lecture
	<b>Itching and Pruritis</b>	Dermatitis	1	Lecture
		Urticaria	1	Lecture
		Lichen PLANUS	1	Lecture
12	<b>Cardiology</b>	Stable Angina	1	Lecture

	<b>Coronary Artery Disease</b>	Unstable Angina	1	Lecture
		Myocardial Infarction	1	Lecture
14	<b>Patient Safety</b>	The Swiss Cheese Model	1	Lecture
	<b>From Error to Harm</b>	Understanding Unsafe Acts	1	Lecture
		A Closer Look at Harm	1	Lecture
15	<b>Infection Control</b>	Hand Hygiene	1	Lecture
		Personal Protective Equipment	1	Lecture
		Use of personal protective equipment during viral hemorrhagic fever	1	Lecture

### TEACHING HOURS ALLOCATION

S. No	Subject	Teaching Hours	Practical Hours
1	Anatomy	80	18
2	Biochemistry	18	10
3	Physiology	15	12
4	Pharmacology	9	-
5	Pathology	3	-
6	Community Medicine	3	-
7	Gynaecology	1	-
8	Research Methodology	1	-
9	CBL 4 (Anatomy)*	8	-
10	CBL 7 (Physiology)*	14	-
11	Radiology	2	-
12	Islamic Study	2	-
13	Pakistan Study	2	-
14	Anesthesia	3	-
15	Critical Care	2	-

16	Orthopaedics and Trauma	13	-
17	Family Medicine	2	-
18	Plastic Surgery	2	-
19	Psychiatry	2	-
20	Dermatology	4	-
21	Cardiology	3	-
22	Patient Safety	5	-
23	Infection Control	3	-
<b>Total hours</b>		<b>197</b>	<b>40</b>

\*Minimum 2 hours are allotted for each CBL session per Module

S. No	Tagged Subject	Teaching Hours
1	Behavioral Sciences	4
2	Professionalism	4
3	Communication Skills	4
<b>Total hours</b>		<b>12</b>

## ASSESSMENT BLUEPRINT

### MUSCULOSKELETAL-I MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

**CVS-I MODULE**  
**FIRST PROFESSIONAL MBBS**

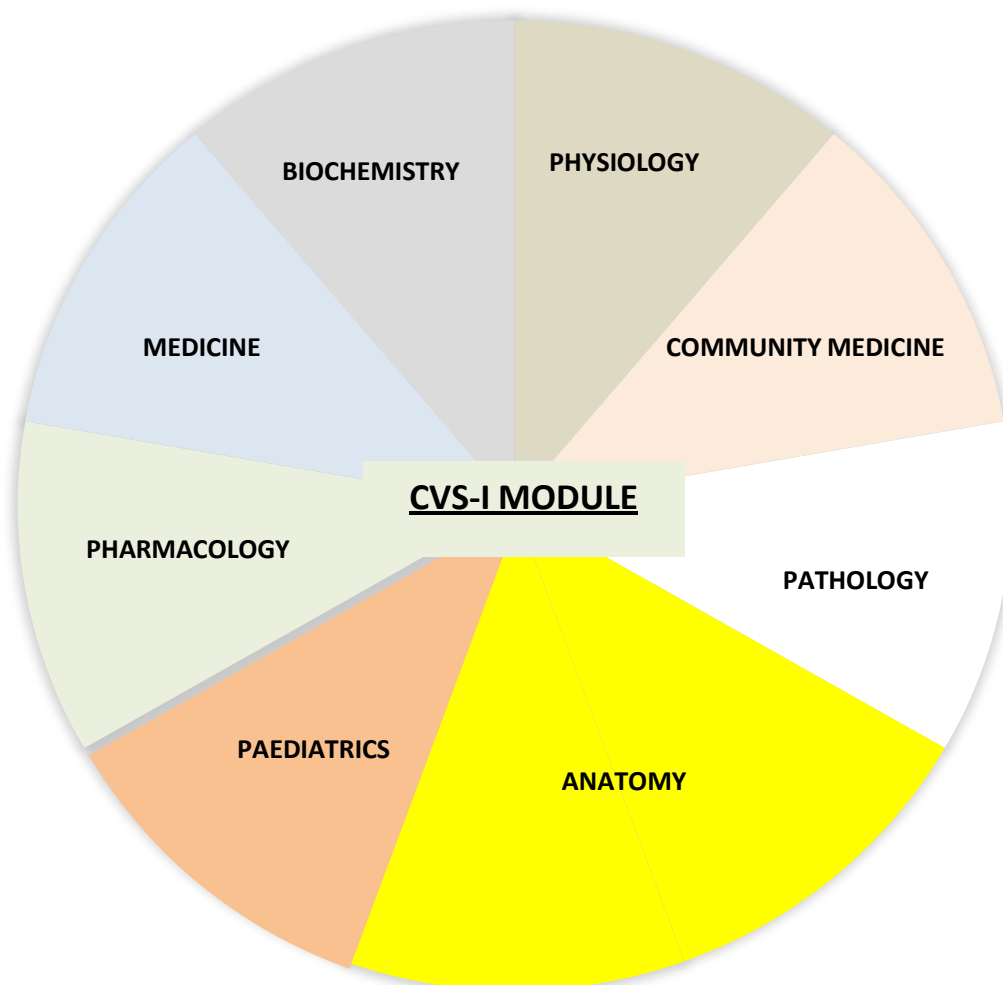


## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application. Integrated curriculum comprises of system-based modules such as Foundation-I, Blood-I, CVS-I, Musculoskeletal-I and Respiratory-I Modules which links basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF CVS-I MODULE

#### MODULE OVERVIEW



#### CVS MODULE-I DETAILS

<b>Course</b>	MBBS
<b>Year</b>	First professional
<b>Duration</b>	4 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations



<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA		
<b>CVS MODULE-I COMMITTEE</b>			
<b>Sr. No</b>	<b>Names</b>	<b>Department</b>	<b>Designation</b>
<b>MODULE COORDINATOR</b>			
1.	Dr. Saqib Baloch	Anatomy	Assistant Professor
2.	Dr. Shahab Hanif	Anatomy	Assistant Professor
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

**Module objectives:**

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student’s overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student’s performance.

**Achievement of objectives:**

- Focuses on information pertaining to examination policy, rules and regulations.

**INTRODUCTION**

This fascinating session will act as a foundation and is crucial to your future practice as physicians. This module includes a number of interactive tasks that are meant to make your learning engaging and fruitful. In order to promote horizontal integration, students will be taught and evaluated on topics including anatomy, physiology, and biochemistry in tandem with the structure and operation of the cardiovascular system during this module. Additionally, we'll assist you in learning the fundamental sciences in a manner that makes sense for their clinical applications (Vertical Integration). We are better preparing you for your future work as a doctor by using this technique, since patients will come to you with issues that are not labeled according to a specific discipline.

**RATIONALE**

This module's main goal is to assist you in developing a cognitive foundation for comprehending the pathophysiology of cardiovascular illnesses, which are a leading source of morbidity and mortality. (third-year cardiovascular diseases module) and cardiovascular medicine practice (final-year clinical rotation). This module will help you get ready for your next work in the medical course, where you will study about managing a variety of cardiovascular diseases as well as assessing and promoting cardiovascular health.

**LEARNING OBJECTIVES**

**General learning Objectives:**

At the end of this module, the students will be able to;

1. Recognize the clinical presentations of common cardiovascular diseases in community.
2. Diagnose these diseases on the basis of history, examination and investigations.
3. Explain pathological findings identified in cardiovascular pathology
4. Identify roll of pharmaceutical agents used for diseases involving cardiovascular system.
6. Enlist clinical features of common cardiovascular pathologies
7. Interpret radiological investigations in relation to cvs.
8. Understand preventive measures for counseling their patients.

9. Practice basic principles of management of common diseases and make appropriate referral
10. Aware of the prognosis to counsel their patients.

### **Knowledge / Cognitive Domain**

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Describe the structure and surface markings of the heart, valves and great vessels
2. Describe the steps of development of the heart
3. Describe the steps of development of arterial, venous and lymphatic system
4. Describe the conduction system of the heart
5. Describe the anatomy of valves of the heart
6. Describe the microscopic structure of myocardium, and blood vessels
7. Describe the cardiac cycle
8. Discuss cardiac output, and venous return
9. Discuss blood pressure and its regulation
10. Discuss coronary circulation and diseases associated with it
11. Describe the mechanisms and types of circulatory shock and associated compensatory mechanisms
12. Describe the anatomy and common pericardial diseases
13. Describe the cardiac enzymes
14. Discuss the hyperlipidemias and the roles lipoproteins and cholesterol in the development of atherogenesis
15. Describe the mechanisms of impulse generation, conduction and excitation of myocardium
16. Discuss normal ECG and common ECG abnormalities
17. Enlist the drugs used in ischemic heart disease and hyperlipidemias
18. Describe preventive strategies of cardiovascular diseases

### **Skills / Psychomotor Domain:**

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

1. Using a sphygmomanometer to measure blood pressure correctly, interpreting the results, and calculating the mean arterial pressure.
2. Locating specific regions of the chest to auscultate the heart sounds.
3. Setting up electrodes, getting an ECG, and analyzing the fundamental results of the ECG.
4. The use of points of identification to identify cardiac tissues and blood arteries under a microscope. (In their histology journals, students must sketch and label microscopic sections of cardiovascular components). The journal will be evaluated at the end-of-module test.
5. Conduct a clinical assessment of the circulatory system.

### **Attitude / Affective Domain:**

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

1. Follow the basic laboratory protocols.
2. Participate in class and practical work efficiently.
3. Maintain discipline of the college.
4. Follow the norms of the college properly.
5. Communicate effectively in a team with colleagues and teachers.
6. Demonstrate professionalism and ethical values in dealing with patients, cadavers, colleagues and teachers.
7. Communicate effectively in a team with colleagues and teachers.
8. Demonstrate the ability to reflect on the performance.

### **Outcomes of CVS-I Module**

1. Knowledgeable
2. Skillful
3. Community Health Promoter
4. Problem-solver
5. Professional
6. Researcher
7. Leader and Role Model

### THEMES FOR CVS-I MODULE

SNO	Theme	Duration
1	Arrhythmias and Myocardial Infarction	1 week
2	Congenital anomalies of Cardiovascular System	1 week
3	Hypertension	1 week
4	Heart Failure	1 week

### SPECIFIC LEARNING OBJECTIVES THEME WISE THEME 1: ARRHYTHMIAS AND MYOCARDIAL INFARCTION

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
01	Define the middle mediastinum. Location and contents of the middle mediastinum. Discuss the fibrous and serous parts of the pericardium. Define pericardial sinuses and nerve supply of the pericardium. Discuss the related clinical conditions.	<b>CVS-1-ANA- G-1</b> Middle Mediastinum and The Pericardium	Interactive lecture	BCQs, SAQs, OSPE, Viva
02	Define Anatomical position of the heart. Identify and name structures constituting the borders and surfaces of the heart. Define the external features of the Chambers of the heart.	<b>CVS-1-ANA- G-2</b> Anatomy of the Heart-1	Demonstration	
03	Describe Internal features of each chamber of heart. Discuss the related clinical conditions.	<b>CVS-1-ANA- G-3</b> Anatomy of the Heart-2	Demonstration	
04	Describe development of cardiogenic field and heart tube. Name the derivatives of heart tube? Define formation of cardiac looping and dextrocardia? How sinus venous and cardiac septa formed.	<b>CVS-1-ANA-E-1</b> Development of the heart tube	Interactive Lecture	
05	How atria and interatrial septum develops? How ventricles and Inter-ventricular septum develops? What are the common congenital anomalies of heart chambers?	<b>CVS-1-ANA-E-2</b> Development of the heart chambers and their septa -1	Interactive Lecture	
06	Describe/Identify the histological features of heart; endocardium, myocardium, epicardium on light microscope.	<b>CVS-1-ANA-H-1</b> Histology of the Heart	Interactive Practical	
<b>PHYSIOLOGY</b>				
07	Describe the Overview of Cardiovascular system Describe the parts of CVS Describe the functions of CVS	<b>CVS-1-PHYS-1</b> Overview of CVS	Interactive Lecture	

08	Describe the properties of muscles of heart. Describe the auto rhythmic cells and contractile cells of heart and mention the components of conductive tissue of the heart	<b>CVS-1-PHYS-2</b> Properties of cardiac muscle	Interactive Lecture	BCQs, SAQs, OSPE, Viva
09	Discuss the properties of heart (automaticity, rhythmicity, conductivity, long refractory period)	<b>CVS-1-PHYS-3</b> Properties of cardiac muscle	Interactive Lecture	

10	Describe the various parts of conducting system of heart and their functions Describe the origin and spread of the electrical impulse from the SA node to the ventricular muscle. Explain the role of the conducting system.	<b>CVS-1-PHYS-4</b> Conducting system of heart	Interactive Lecture	
11	Describe two types of action potential in the heart muscle. Explain the genesis of pacemaker potential at the SA node Describe the effects of vagal and sympathetic stimulations on the pacemaker potential.	<b>CVS-1-PHYS-5</b> Electrical activity of heart	Interactive Lecture	
12	To record the heart rate during sitting & standing & effect on exercise of young adult on power lab.	<b>CVS-1-PHYS-P1</b> Heart rate during standing, sitting and during exercise on power lab	Interactive Practical	

#### BIOCHEMISTRY

13	Introduction of isoenzymes Diagnostic significance of isoenzymes	<b>CVS-1-BIO -1</b> Diagnostic significance of Isoenzymes in cardiovascular disorders	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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#### PATHOLOGY

14	Define ischemic heart diseases? Classify different types of ischemic heart diseases? Discuss causes and clinical manifestation of ischemic heart diseases	<b>CVS-1--PATHO-1</b> Ischemic heart disease	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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#### COMMUNITY MEDICINE

15	To define and classify obesity. To describe the causes of obesity. To understand the concept of BMI and its calculation To discuss the epidemiology and control measures of obesity.	<b>CVS-1-CM-1</b> Epidemiology and control measures of obesity	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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#### MEDICINE (CARDIOLOGY)

16	<p>Define Arrhythmias</p> <p>Recognize the common abnormalities in the rate and rhythm of the heart (tachycardia, bradycardia, flutter, fibrillations, heart blocks and extra-systole failure.</p> <p>Describe the hemodynamic, neuroendocrine and cellular changes that occur in heart failure.</p> <p>Describe the physiological basis of the treatment principles in heart failure.</p>	<p><b>CVS-1-CARDIO-1</b></p> <p>Arrhythmias</p>	<p>Interactive Lecture</p>	<p>BCQs, SAQs, OSPE, Viva</p>
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## THEME 2: CONGENITAL ANOMALIES OF CARDIOVASCULAR SYSTEM

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
17	<p>Describe the composition of the walls and the skeleton of the heart.</p> <p>Describe the conducting system of the heart. Discuss the related clinical conditions.</p>	<p><b>CVS-1-ANA- G-4</b></p> <p>Structure of the heart and The Conducting system of the Heart</p>	<p>Demonstration</p>	<p>BCQs, SAQs, OSPE, Viva</p>
18	<p>How atria and interatrial septum develops?</p> <p>How ventricles and Inter-ventricular septum develops?</p> <p>What are the common congenital anomalies of heart chambers?</p>	<p><b>CVS-1-ANA-E-3</b></p> <p>Development of the heart chambers and their septa -2</p>	<p>Interactive Lecture</p>	
19	<p>Describe septa formation in bulbus cordis and truncus arteriosus.</p> <p>Enlist congenital heart defects; transposition of great vessels, PDA, PTA</p>	<p><b>CVS-1-ANA-E-4</b></p> <p>Development of septa in truncus arteriosus , valves and conducting system</p>	<p>Interactive Lecture</p>	
20	<p>Describe the microscopic features of the arteries Identify the different types of arteries</p>	<p><b>CVS-1-ANA-H-2</b></p> <p>Histology of the Arteries</p>	<p>Interactive Practical</p>	
<b>PHYSIOLOGY</b>				
21	<p>Describe the sequence of events that occur in the heart during the cardiac cycle.</p> <p>Illustrate the pressure changes that occur in a single cardiac cycle.</p>	<p><b>CVS-1-PHYS-6</b></p> <p>Mechanical Events of Cardiac cycle</p>	<p>Interactive Lecture</p>	<p>BCQs, SAQs, OSPE, Viva</p>
22	<p>Relate the genesis of arterial and jugular venous pulses to underlying cardiac events</p> <p>Describe the JVP and the value of CVP measurement</p>	<p><b>CVS-1-PHYS-7</b></p> <p>JVP and CVP in cardiac events and their measurements</p>	<p>Interactive Lecture</p>	
23	<p>Explain the production of the heart sounds and state their significance. Describe the function of the heart valves and genesis of the murmurs. State the timing of the murmur produced by valvular defects and congenital heart disease</p> <p>Describe the Hemodynamic changes in various valvular heart diseases.</p> <p>Define the terms electrocardiogram (ECG) and electrocardiography.</p> <p>Describe the electrical events occurring within the heart</p>	<p><b>CVS-1-PHYS-8</b></p> <p>Heart sounds &amp; murmurs ECG</p>	<p>Interactive Lecture</p>	

24	Describe the structural features, innervation and blood flow of the capillary system. Explain the role of capillaries as exchange vessels. Name and give the approximate values of the Starling's forces. Explain the state of near equilibrium at the arteriolar and Venous end of capillaries.	<b>CVS-1-PHYS-9</b> Capillary Circulation	Interactive Lecture	BCQs, SAQs, OSPE, Viva
25	Describe the lymph capillary and list the factors that determine the lymph flow. List the function of lymphatics Describe the role of lymphatic circulation in maintaining normal Starling forces across the capillary wall. Explain the pathophysiological basis for edema that is increased capillary hydrostatic pressure, hypo albuminemia, lymphatic obstruction and increased capillary permeability	<b>CVS-1-PHYS-10</b> lymphatic flow	Interactive Lecture	
26	Auscultation of heart sounds and murmurs Recognize the heart sounds and differentiate those from murmurs.	<b>CVS-1-PHY-P2</b> Normal and abnormal heart sounds	Interactive Practical	
<b>BIOCHEMISTRY</b>				
27	Describe different aspects related to fatty acids and their clinical significance in the CVS diseases.	<b>CVS-1-BIO-2</b> Fatty acids	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>PATHOLOGY</b>				
28	Define aneurysm Classification of aneurysm What are the true and false aneurysms with their examples Pathogenesis of aneurysm	<b>CVS-1--PATHO-2</b> Congenital anomalies of blood vessels	Interactive Lecture	BCQs, SAQs, OSPE, Viva
29	Define congenital heart disease. Describe etio- pathogenesis. Discuss clinical features	<b>CVS-1--PATHO-3</b> Congenital heart disease.	Interactive Lecture	
<b>COMMUNITY MEDICINE</b>				
30	To discuss the epidemiology of coronary heart disease. To identify the risk factors of coronary heart disease. To discuss the prevention of coronary heart disease.	<b>CVS-1-CM-2</b> Epidemiology and control measures of coronary heart disease	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>PAEDIATRICS</b>				
31	Describe the Hemodynamic changes in various congenital heart diseases including; Mitral Stenosis Mitral regurgitation Stenosis Aortic regurgitation	<b>CVS-1-PAEDS-I</b> Congenital heart diseases	Interactive Lecture	BCQs, SAQs, OSPE, Viva

### THEME 3: HYPERTENSION

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
32	Describe the arterial supply and venous drainage of heart. Describe the branches of major arteries and their distribution. Define the nerve supply of the heart. Describe the cardiac plexus.	<u><b>CVS-1-ANA-G-5</b></u> Blood and nerve supply of the Heart	Interactive Lecture	BCQs, SAQs, OSPE, Viva
33	Discuss development of arterial system; aortic arches, umbilical, vitelline and coronary arteries Name the common congenital anomalies of arteries?	<u><b>CVS-1-ANA-E-5</b></u> Development of arterial system of heart	Interactive Lecture	
34	Discuss development of venous system; cardinal veins, umbilical and vitelline. Name the common congenital anomalies of venous system?	<u><b>CVS-1-ANA-E-6</b></u> Development of venous system of heart	Interactive Lecture	
35	Describe the microscopic structure of the veins	<u><b>CVS-1-ANA-H-3</b></u> Histology of veins	Interactive Practical	
<b>PHYSIOLOGY</b>				
36	Define cardiac output and state its relationship to stroke volume and heart rate. List and explain the factors that regulate cardiac output. Explain the principles of measuring the cardiac output. State the changes in cardiac output in selected conditions.	<u><b>CVS-1-PHYS-11</b></u> Cardiac output	Interactive Lecture	BCQs, SAQs, OSPE, Viva
37	Define the central venous pressure and its importance in venous return. Mention the factors that affect and regulate venous return	<u><b>CVS-1-PHYS-12</b></u> Venous return	Interactive Lecture	
38	Define systolic blood pressure, diastolic blood pressure and mean arterial pressure. List the methods available to measure the blood pressure. Describe the factors affecting on regulation of blood pressure	<u><b>CVS-1-PHYS-13</b></u> Blood pressure & its regulation-I	Interactive Lecture	BCQs, SAQs, OSPE, Viva
39	Define circulation time and state the conditions altering circulation time Explain the auto regulation mechanism of blood flow	<u><b>CVS-1-PHYS-14</b></u> Blood pressure & its regulation-II	Interactive Lecture	
40	Explain the clinical significance of P-R interval and S-T segment. Describe the basis of ECG recording in context of Einthoven's triangle and law Explain the clinical significance of P-R interval and S-T segment. (both prolongation and reduction).	<u><b>CVS-1-PHY-15</b></u> ECG	Interactive Lecture	
41	Demonstrate the location of different ECG leads. Perform ECG on a standardized patient. Calculate the heart rate & measure the P-R interval Interpret the ECG for common abnormalities. List the locations of different ECG leads and draw the shape of	<u><b>CVS-1-PHY-P3</b></u> ECG	Interactive Practical	

	ECG waves in each lead.			
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**BIOCHEMISTRY**

<b>42</b>	Explain the metabolism and function of cholesterol and its clinical significance in CVS diseases	<b>CVS-1-BIO-3</b> Cholesterol	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>43</b>	Describe the prostaglandins & leukotriens , their synthesis and general functions.	<b>CVS-1-BIO-4</b> Prostaglandins and Leukotriens	Interactive Lecture	
<b>44</b>	Demonstrate the estimation of the serum cholesterol	<b>CVS-1-BIO-P1</b> Serum Cholesterol estimation	Interactive practical	

**PHARMACOLOGY**

<b>45</b>	To describe the physiological targets of drugs used in systemic hypertension.	<b>CVS-1-PHARM-1</b> Introduction to targets of drugs used in hypertension	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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**COMMUNITY MEDICINE**

<b>46</b>	To define hypertension and its types. To discuss current status of hypertension To discuss the rule of half in hypertension To discuss the preventive level of hypertension	<b>CVS-1-CM-3</b> Epidemiology and control measures of hypertension	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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**MEDICINE (CARDIOLOGY)**

<b>47</b>	Define hypertension. List the causes of hypertension. Describe the pathogenesis of hypertension. Explain the compensatory measures that maintain the blood pressure on rising from supine positions. Explain the physiological basis of the treatment principles in hypertension	<b>CVS-1-CARDIO-2</b> Hypertension	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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**ANESTHESIA**

<b>48</b>	Discuss the anesthesia agents used	<b>CVS-1-ANESTH-1</b>	Interactive Lecture	BCQs, OSPE, Viva
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**THEME 4: HEART ATTACK**

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
<b>48</b>	Identify different chambers/structures of the heart.	<b>CVS-1-ANA-G-6</b> Model study of the heart	Demonstration on	



49	Identify different chambers/structures of the heart.	<b><u>CVS-1-ANA-G-7</u></b> Model study of the heart	Demonstration on	BCQs, SAQs, OSPE, Viva
50	Describe circulatory changes before and after birth. Name the adult derivatives of embryonic structures?	<b><u>CVS-1-ANA-E-7</u></b> Circulation before and after birth	Interactive Lecture	
51	Identify the capillaries with the help of light microscope.	<b><u>CVS-1-ANA-H-4</u></b> Histology of capillaries	Interactive Practical	
<b>PHYSIOLOGY</b>				
52	Define shock Describe the four major causes of shock and explain giving examples Describe the pathophysiology of circulatory shock. Describe the physiological basis of treatment of circulatory shock. List the factors that make shock refractory. Explain the physiological basis of signs and symptoms of different types of shock. Explain the short and long-term physiological compensation of shock.	<b><u>CVS-1-PHYS-16</u></b> Circulatory Shock	Interactive Lecture	BCQs, SAQs, OSPE, Viva
53	Identify different parts of the stethoscope & sphygmomanometer Differentiate the auscultatory and palpatory methods of the blood pressure measurement. Demonstrate the correct technique for auscultatory and palpatory methods of blood pressure measurement, Hear the Korotkoff's sound during auscultation.	<b><u>CVS-1-PHY-P4</u></b> Record of blood pressure by palpatory and auscultatory methods	Interactive Practical	
<b>BIOCHEMISTRY</b>				
54	Discuss lipoproteins' metabolism and their clinical significance in CVS diseases	<b><u>CVS-1-BIO-5</u></b> Lipoproteins	Interactive lecture	BCQs, SAQs, OSPE, Viva
55	Interpretation of lipid profile and their significance	<b><u>CVS-1-BIO-P2</u></b> Lipid Profile	Interactive Practical	
<b>PATHOLOGY</b>				
56	Define shock Enlist types of shock Describe causes, pathophysiology, signs and symptoms of shock	<b><u>CVS-1-PATHO-4</u></b> Shock	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>MEDICINE (CARDIOLOGY)</b>				

57	Define heart failure. Explain the physiological basis of the common clinical manifestations of heart failure. Describe the different types of heart failure. Describe the hemodynamic, neuroendocrine and cellular changes that occur in heart failure. Describe the physiological basis of the treatment principles in heart failure.	<b>CVS-1-CARDIO-3</b> Heart failure	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>RADIOLOGY</b>				
58	Interpretate Chest radiographs Identify and mention normal heart shadows, cardio thoracic and cardiophrenic angles, aortic knuckle, great vessels locations and borders of heart Identify the heart shadow both in AP and PA views.	<b>CVS-1-RADIO-1</b> Chest Radiograph	Interactive Lecture	BCQs, OSPE, Viva

### TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>PROFESSIONALISM</b>						
es	Accept errors and mistakes in responsible manner	Accept errors and mistakes in responsible manner	Lecture	CVS1	2	MCQ,

### CLINICAL SCIENCES SUBJECTS

<b>CVS MODULE</b>				
S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>ISLAMIC STUDY</b> A prologue on Essential Communication Skills	Gain insight into the physical, moral, spiritual and emotional aspects of Communication.	1	Lecture
		Define effective communication, draw a checklist for effective communication and identify barriers for communicating effectively	1	Lecture
2.	<b>PAKISTAN STUDY</b>	District health information systems	1	Lecture
		Millennium development goals – goals and achievements	1	Lecture

3.	<b>ANAESTHESIA</b>	Describe Hypoxia and its clinical features during and after anesthesia	1	Lecture
	<b>Anesthesia Complications</b>	Explain CO <sub>2</sub> disturbance related to Anesthesia Briefly describe the anesthesia related causes of cardiac arrest	1	Lecture
			1	Lecture
4.	<b>CRITICAL CARE</b>  Circulation	Ventricular Tachycardias	1	Lecture
		Supraventricular Tachyarrhythmias	1	Lecture
		Bradyarrhythmias	1	Lecture
		Management of advanced heart failure	1	Lecture
5.	<b>FAMILY MEDICINE</b>	Periodic Health Examination – Children and Adults	1	Lecture
	Health Promotion and Disease Prevention	CVD Risk Assessment & Prevention	1	Lecture
6	<b>PLASTIC SURGERY</b>	Types of Skin Flaps	1	Lecture
	Skin Flaps	Application of skin Flaps in surgery	1	Lecture
7	<b>PSYCHIATRY</b>	Mental and behavioral disorders due to psychoactive substance use	1	Lecture
	Psychotic Disorders	Mental and behavioral disorders due to substance use disorder	1	Lecture
8	<b>DERMATOLOGY</b>	Acne Vulgaris	1	Lecture
		Psoriasis	1	Lecture
9	<b>CARDIOLOGY</b>	Myocardial Infarction	1	Lecture
	Coronary Artery Disease	Angiography	1	Lecture
		Percutaneous coronary intervention	1	Lecture
		Coronary artery bypass graft	1	Lecture
	Congenital Heart Disease	Atrial Septal Defect	1	Lecture
		Ventricular septal Defect	1	Lecture
		Fellots tetralogy	1	Lecture
		Cardiac Malpositions	1	Lecture
	Valvular Heart Diseases	Mitral Stenosis	1	Lecture
		Mitral Regurgitation	1	Lecture
		Aortic Stenosis	1	Lecture
Aortic Regurgitation		1	Lecture	
10	<b>PATIENT SAFETY</b>	Understanding the Science of Human Factors	1	Lecture

	Human Factors and Safety	Design Principles to Reduce Human Error	1	Lecture
		The Risks and Rewards of Technology	1	Lecture
11	<b>INFECTION CONTROL</b>	Injection safety	1	Lecture
		Infection prevention and control aspect of occupational health in healthcare setting	1	Lecture

### TEACHING HOURS ALLOCATION

S. No	Subject	Teaching Hours	Practical Hours
1	Anatomy	14	8
2	Biochemistry	12	4
3	Physiology	16	8
4	Pharmacology	1	-
5	Pathology	4	-
6	Community Medicine	3	-
7	Pediatrics	1	-
8	Medicine	3	-
9	CBL 4 (Anatomy)*	8	-
10	CBL 4 (Physiology)*	8	-
11	Radiology	1	-
12	Islamic Study	2	-
13	Pakistan Study	2	-
14	Anesthesia	3	-
15	Critical Care	4	-
16	Family Medicine	2	-
17	Plastic Surgery	2	-
18	Psychiatry	2	-
19	Dermatology	2	-

20	Cardiology	12	-
21	Patient Safety	3	-
22	Infection Control	2	-
	<b>Total hours</b>	<b>107</b>	<b>20</b>

\*Minimum 2 hours are allotted for each CBL session per Module

S. No	Tagged Subject	Teaching Hours
1	Professionalism	2
	<b>Total hours</b>	<b>2</b>

### ASSESSMENT BLUEPRINT

#### CVS-I MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
<b>MODULE EXAM</b>	THEORY	MCQ's	100
		SEQ's	100
	PRA OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

### LEARNING RESOURCES

The learning resources for the educational contents of BDS program are available for the students which assist learners to achieve the outcomes and by focusing on educational content. In addition; the names of the books for each subject as a learning resources is available with the educational content of the same subject.

Following learning resources can be used by the undergraduates;

- Books
- Evidence based articles from journals
- Digital library to search the material for self-directed learning
- Video Tapes
- Displays
- Models
- Phantom Heads
- Printed Notes
- Case based scenarios'
- Community Visits

**Recommended Books First YEAR MBBS**

<b>Anatomy</b>		<b>Physiology</b>	<b>Biochemistry</b>
<ul style="list-style-type: none"> <li>• Clinically Oriented Anatomy Keith.L. Moore, Arthur F. Dalley, Anne M.R. Agur 7<sup>th</sup> Or Latest Editio</li> <li>• Gray's Anatomy For Students Drake &amp; Vogl &amp; Mitchell 3<sup>rd</sup> Or Latest Edition                             <ul style="list-style-type: none"> <li>• Clinical Anatomy By Regions (Reference Book) Richard S. Snell 9<sup>th</sup> Edition</li> </ul> </li> <li>• Last's Anatomy: Regional &amp; Applied (Reference Book) Chummy S. Sinnatamby 12<sup>th</sup> Or Latest Edition</li> <li>• Atlas Of Human Anatomy Frank H. Netter 6<sup>th</sup> Edition</li> </ul> <p><b>Embryology</b></p> <ul style="list-style-type: none"> <li>• Langman's Medical Embryology T.W. Sadler 13<sup>th</sup> Edition                             <ul style="list-style-type: none"> <li>• The Developing Human Clinically Oriented Embryology (Reference Book) Moore &amp; Persaud &amp; Torchia 10<sup>th</sup> Edition</li> </ul> </li> </ul> <p><b>Histology</b></p> <ul style="list-style-type: none"> <li>• Medical Histology Laiq Hussain Siddiqui 5<sup>th</sup> Or Latest Edition Wheaters Functional Histology Barbara Young 5<sup>th</sup> Edition</li> <li>• Basic Histology (Text And Atlas) (Reference Book) Luiz Junqueira, Jose Carneiro 11<sup>th</sup> Or Latest Edition</li> </ul>		<ol style="list-style-type: none"> <li>3. Guyton and Hall Textbook of Medical Physiology – 15<sup>th</sup> Edition.</li> <li>4. Ganong's Review of Medical Physiology, 27<sup>th</sup> Edition.</li> </ol>	<ol style="list-style-type: none"> <li>3. Harper's Illustrated Biochemistry, 32 edition.</li> <li>4. Lippincot t' Illustrated Reviews- Biochemistry 7<sup>th</sup> edition.</li> </ol>
<b>Pathology</b>	<b>Community Medicine</b>	<b>Pharmacology</b>	<b>Paediatrics</b>
Robbins & Cotran Pathologic Basis Of Disease Vinay Kumar, Abul K. Abbas, Jon C. Aster 10 <sup>th</sup> Edition	Park's Text book of Preventive And Social Medicine K. Park	<ol style="list-style-type: none"> <li>1. Lippincott Illustrated Reviews: Pharmacology Karen Whalen, Carinda Feild, Rajan Radhakrishnan</li> </ol>	Basis Of Pediatrics Pervez Akbar 10 <sup>th</sup> Edition

**RESPIRATORY-I MODULE**  
**FIRST PROFESSIONAL MBBS**

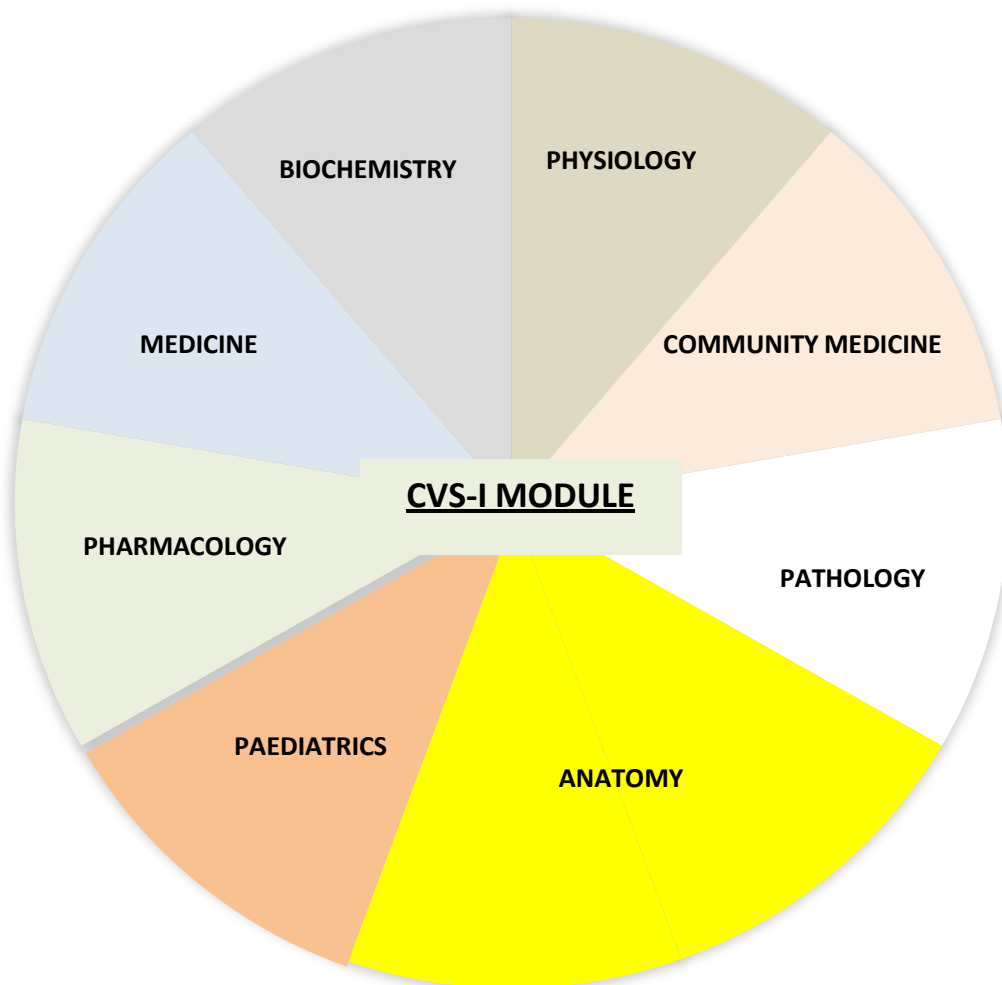


## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Foundation-I, Blood-I, CVS-I, Musculoskeletal-I and Respiratory-I Modules which links basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF RESPIRATORY-I MODULE





## MODULE OVERVIEW

### RESPIRATORY-I MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	First professional
<b>Duration</b>	4 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

### RESPIRATORY-I MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Dr. Saqib Baloch	Anatomy	Assistant Professor
2.	Dr. Shahab Hanif	Anatomy	Assistant Professor
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### Module objectives:

- Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- Highlights information on the contribution of continuous on the student's overall performance.
- Includes information on the assessment methods that will be held to determine every student's performance.

#### Achievement of objectives:

- Focuses on information pertaining to examination policy, rules and regulations.

## INTRODUCTION

This fascinating session will act as a foundation and is crucial to your future practice as physicians. This module includes a number of interactive tasks that are meant to make your learning engaging and fruitful. To comprehend the typical movements of the chest wall, one must have a thorough understanding of the anatomy of the diaphragm and the chest wall. The vital organs that support life, including the heart, lungs, and major blood vessels, are housed inside the protective thoracic cage. Despite the strength of the chest wall, the soft organs can be hurt by sharp or piercing cuts.

A very painful injury, flail chest (also known as stove-in chest) reduces ventilation, which in turn affects blood oxygenation. All of the associated conditions' pathophysiology will be covered in this module

#### RATIONALE

In our community, respiratory illnesses are very common, which may raise morbidity and death rates. Only after gaining a foundational understanding of the anatomy and physiology of the respiratory system can a practitioner effectively treat patients with respiratory illnesses. Acute respiratory infections, such as pneumonia, are particularly dangerous for young individuals, the elderly, and those with compromised immune systems. It is best to explain oxygen administration and artificial ventilation to kids in earlier years of school as these are necessary for the management of some respiratory disorders. Since smoking increases the chance of developing lung cancer and COPD, it is crucial to understand the pathophysiology of smoking. The respiratory module is structured so that students can comprehend its components, pathophysiology, prescriptions, including those for drugs, and can inform the public about illness prevention and health promotion.

To become a world-leading organization in rural health and social care research, training, recruitment and best evidence-based practice.

## LEARNING OBJECTIVES

### Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Describe the anatomy and abnormalities of thoracic cage
2. Describe the development and gross anatomy of the diaphragm
3. Describe the contents of mediastinum and their relations
4. Describe the anatomy of pleura and its reflections
5. Describe the gross and microscopic structure, development, nerve supply and blood supply of trachea, bronchi and lungs
6. Describe the epithelia and connective tissues lining the respiratory passageways.
7. Describe pulmonary ventilation
8. Discuss the mechanisms of gaseous exchange between alveoli, and blood and blood and tissues
9. Elaborate the transport of gases in the blood
10. Describe the mechanisms of regulation of respiration
11. Define hypoxia, and cyanosis
12. Describe the effect of aging on respiratory system
13. Describe the biochemical structure and functions of enzymes
14. Describe the mechanisms of O<sub>2</sub> and CO<sub>2</sub> transport in the blood
15. Classify anti-asthmatic and anti-tuberculous drugs
16. Describe the types and signs of asphyxia
17. Enlist the causes and signs of pneumonias, bronchial asthma, tuberculosis, Acute Respiratory Distress Syndrome (ARDS), and pulmonary edema
18. Describe the parameters of Pulmonary Function Tests (PFTs)

### Skills / Psychomotor Domain:

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

1. Identification of the various respiratory system components under a microscope.
2. Analyze overall lipid characteristics.
3. Conduct cardiopulmonary.
4. Perform spirometry and construct a lung volume graph.
5. Using a pH meter
6. Interpreting Pulmonary Function tests (PFTs) and Arterial Blood Gases (ABGs)

7. Doing a clinical evaluation of the respiratory system

**Attitude / Affective Domain:**

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

1. Comply with standard laboratory procedures
2. Engage in professional classroom and practical work.
3. Work as a team to effectively communicate with instructors, staff, and peers.
4. Act with professionalism and moral principles when interacting with teachers, personnel, cadavers, and patients.
5. Work well as a team to communicate with instructors and peers.
6. Show that you have the capacity to evaluate your performance.

**Outcomes of Respiratory-I Module**

1. Knowledgeable
2. Skillful
3. Community Health Promoter
4. Problem-solver
5. Professional
6. Researcher
7. Leader and Role Model

**THEMES FOR RESPIRATORY-I MODULE**

SNO	Theme	Duration
1	The Chest / Thoracic wall and trauma	1 week
2	Airways and their conditions or diseases	1 week
3	Lung parenchyma & interstitium and the related diseases	2 week

**SPECIFIC LEARNING OBJECTIVES THEME WISE**

**THEME 1: THE CHEST / THORACIC WALL AND TRAUMA**

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
1	Define the anatomical classification of the Respiratory system. Define the structure of the thoracic cage & wall. Define the thoracic inlet & thoracic outlet. Discuss the thoracic outlet syndrome.	<b>RESP-1-ANA-G-1</b> General introduction of the Respiratory system and Anatomy of the thorax	Interactive Lecture	BCQs, SAQs, OSPE, Viva
2	Define the general features of the sternum. Define the general features of the ribs. Differentiate typical and atypical ribs. Define the costal cartilages. Discuss the attachment of various muscles.	<b>RESP-ANA-G-2</b> Osteology of the Ribs and the Sternum	Demonstration	BCQs, SAQs, OSPE, Viva

3	Define the general features of the thoracic vertebra. Differentiate typical and atypical thoracic vertebrae. Discuss the joints of the thoracic walls. Differentiate the	<b><u>RESP-1-ANA-G-3</u></b> Osteology of the thoracic vertebrae	Demonstration	BCQs, SAQs, OSPE, Viva
4	Define the three morphological layers of the muscles of the thoracic wall. Define the intercostal spaces. Define the endothoracic fascia. Discuss the supra-pleural membrane.	<b><u>RESP1-ANA-G-4</u></b> Muscles of the thoracic wall and intercostal spaces	Demonstration	BCQs, SAQs, OSPE, Viva
5	Define the intraembryonic mesoderm and its parts. Discuss the divisions of lateral plate mesoderm into visceral and parietal layers. Define the extent of intraembryonic coelom and its divisions. Discuss the formation of the pleuro-pericardial and pleuro-peritoneal membranes.	<b><u>RESP-1-ANA-E-1</u></b> Formation of the intraembryonic cavity, Serous membranes and thoracic cavity	Interactive Lecture	BCQs, SAQs, OSPE, Viva
6	Discuss the steps of development of diaphragm from its composite embryonic derivatives. Discuss anomalies related with its development.	<b><u>RESP-1-ANA-E-2</u></b> Development of the diaphragm	Interactive Lecture	BCQs, SAQs, OSPE, Viva
7	Describe the histological features of different layers of Trachea. Identify the tracheal epithelium and other microscopic features of the trachea with the help of light microscope.	<b><u>RESP-1-ANA-H-1</u></b> The Histology of the Trachea	Interactive Practical	BCQs, SAQs, OSPE, Viva
<b>PHYSIOLOGY</b>				
8	Describe the Overview of respiration Describe the parts of respiratory tract Role of respiratory tract Describe the functions respiration	<b><u>RESP-1-PHY-1</u></b> Introduction of respiratory tract and functions	Interactive Lecture	BCQs, SAQs, OSPE, Viva
9	Describe the mechanics of pulmonary ventilation and muscles of respiration Briefly describe the function of respiratory passages.	<b><u>RESP-1-PHY-2</u></b> The mechanics of breathing-I	Interactive Lecture	BCQs, SAQs, OSPE, Viva
10	Define alveolar pressure & pleural pressure, alveolar ventilation. Discuss trans pulmonary pressure and its changes during respiration. Define dead space	<b><u>RESP-1-PHY-3</u></b> The mechanics of breathing-II	Interactive Lecture	BCQs, SAQs, OSPE, Viva

11	Describe the compliance of lungs and work of breathing with special reference to various pressure, role of surfactant, ribs, and respiratory muscles. Enlist factors affecting lung compliance. Describe the role of surfactant in maintaining lung compliance. Differentiate compliance work, tissue resistance work & airway resistance work.	<b><u>RESP-1-PHYS-4</u></b> The Lung compliance & work of breathing	Interactive Lecture	BCQs, SAQs, OSPE, Viva
12	List the pulmonary volume & capacity with their normal values & significance in pulmonary function test. Describe the all pulmonary volumes & capacities. Differentiate compliance work, tissue resistance work & airway resistance work. Discuss alveolar ventilation & dead space.	<b><u>RESP-1-PHYS-5</u></b> Lung volumes & capacities & their importance - I	Interactive Lecture	BCQs, SAQs, OSPE, Viva
13	Differentiate compliance work, tissue resistance work & airway resistance work. Discuss alveolar ventilation & dead space.	<b><u>RESP-1-PHYS-6</u></b> Lung volumes & capacities & their importance - II	Interactive Lecture	BCQs, SAQs, OSPE, Viva
14	To record the effect of respiration during sitting & standing of young adult on power lab & plot a graph. To record the effect of swallowing & deglutition on respiration in healthy adult on power lab & plot a graph.	<b><u>RESP-1-PHY-5</u></b> Respiratory adaptations during standing, sitting and swallowing on power lab	Interactive Practical	OSPE, Viva

### BIOCHEMISTRY

15	Concept of pH, Buffers & their mechanism of action, Types of Buffers in humans	<b><u>RESP-1-BIO -1</u></b> Concept of pH, Buffers & their mechanism of action, Types of Buffers in humans	Interactive Lecture	BCQs, SAQs, OSPE, Viva
16	Describe the acid base balance. Explain the respiratory and metabolic acidosis & alkalosis with causes and compensatory mechanisms.	<b><u>RESP-1-BIO -2</u></b> Acid Base Balance/ Metabolic & Respiratory Acidosis & Alkalosis	Interactive Lecture	BCQs, SAQs, OSPE, Viva
17	Description & Biomedical significance of Compound Lipids	<b><u>RESP-1-BIO-3</u></b> Biomedical significance of Compound Lipids	Interactive Lecture	BCQs, SAQs, OSPE,
18	Describe the Synthesis & Functions of Phospholipids. Discuss the Role of Lecithin in Respiration	<b><u>RESP-1-BIO-4</u></b> Synthesis of Phospho- lipids & Role of Lecithin in Respiration	Interactive Lecture	BCQs, SAQs, OSPE, Viva
19	Demonstrate the pH Meter, Significance, interpretation	<b><u>RESP-1-BIO-5</u></b> Introduction to pH Meter, Significance, interpretation	Interactive Practical	BCQs, SAQs, OSPE, Viva

### PATHOLOGY

<b>20</b>	Identify congenital anomalies of lungs. Define acute lung injury Describe the causes ARDS Discuss the characteristic features,	<b><u>RESP-1--PATHO-1</u></b> Congenital anomalies, acute lung injury and ARDS	Interactive Practical	BCQs, SAQs, OSPE, Viva
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	morphology and pathogenesis of ARDS Describe its consequences and clinical course.			
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**COMMUNITY MEDICINE**

<b>21</b>	To describe the sources of air pollution To describe the health hazards of in-door and out-door air pollution To explain the control measures of air pollution	<b><u>RESP-1-CM-1</u></b> Environmental health (Air pollution) Sources of air pollution Health hazards of air pollution	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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**CLINICAL**

<b>22</b>	Define Chayne-stokes breathing and effect on body Define COPD and RLD Differentiate b/w RLD & COLD & effects on body (obstructive & restrictive lung disease) Is COVID-19 RLD or COLD type of disease Define emphysema, chronic bronchitis Define Bronchiectasis Define interstitial lung diseases	<b><u>RESP-1-MED-1</u></b> Obstructive and Restrictive Lung Diseases	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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**THEME 2: AIRWAYS AND THEIR CONDITIONS OR DISEASES**

	<b>LEARNING OBJECTIVES</b>	<b>TOPICS</b>	<b>TEACHING STRATEGY</b>	<b>ASSESSMENT</b>
<b>23</b>	Discuss the attachments of the diaphragm. Define the blood and nerve supply of the diaphragm. Identify the openings in the diaphragm with levels. Define the structures passing through these openings. Define the functions of the diaphragm.	<b><u>RESP-1-ANA-G-5</u></b> The Diaphragm and its Openings	Demonstration	BCQs, SAQs, OSPE, Viva
<b>24</b>	Describe mediastinum Describe boundaries, divisions and structures present in the mediastinum	<b><u>RESP-1-ANA-G-6</u></b> Mediastinum	Interactive Lecture	BCQs, SAQs, OSPE,
<b>25</b>	Define the anatomy of the trachea. Discuss the clinical conditions related with trachea.	<b><u>RESP-1-ANA-G-7</u></b> Anatomy of the trachea	Interactive lecture	BCQs, SAQs, OSPE,
<b>26</b>	Define the anatomy of the principal bronchi. Discuss the clinical conditions related with bronchi.	<b><u>RESP-1-ANA-G-8</u></b> Anatomy of the bronchi	Demonstration	BCQs, SAQs, OSPE,
<b>27</b>	Describe the development of the larynx, trachea and bronchi. Discuss anomalies related with the development of these structures.	<b><u>RESP-1-ANA-E-3</u></b> Formation of the Larynx, Trachea and Bronchi	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>28</b>	Describe the microscopic features of the bronchi. Differentiate the primary bronchioles from the tertiary bronchioles. Identify the general histological features of bronchi and bronchioles with the help of light microscope.	<b><u>RESP-1-ANA-H-2</u></b> The Histology of the Bronchi: Primary and Tertiary Bronchioles	Interactive Practical	BCQs, SAQs, OSPE, Viva

<b>PHYSIOLOGY</b>				
<b>29</b>	Describe the pulmonary circulation & blood flow three various zones of lung(1,2,3). Explain pulmonary capillary dynamics.	<b><u>RESP-1-PHYS-7</u></b> Pulmonary Circulation &V/Q relationships-I	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>30</b>	Explain mechanism of development of pulmonary edema, pleural effusion understands importance of ventilation /perfusion Ratio & effects of mismatching of this ratio	<b><u>RESP-1-PHYS-8</u></b> Pulmonary Circulation &V/Q relationships-II	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>31</b>	Composition of air & Gas pressures Respiratory membrane & functions Gasses exchange across cell membrane Factors affecting exchange Water vapor pressure Effect of gravity	<b><u>RESP-1-PHYS-9</u></b> Exchange of Gasses	Demonstration	BCQs, SAQs, OSPE, Viva
<b>32</b>	Explain the diffusion of respiratory gases via respiratory membrane and factors that affect it Explain the mechanism of transport of CO <sub>2</sub> in blood	<b><u>RESP-1-PHYS-10</u></b> Transport of CO <sub>2</sub> & O <sub>2</sub> -I	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>33</b>	the transport of CO <sub>2</sub> in the blood & gases exchange between blood & body cells.	<b><u>RESP-1-PHYS-11</u></b> Transport of CO <sub>2</sub> & O <sub>2</sub> -II	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>34</b>	Explain the sigmoid shape of curve in terms of its flat and steep portions. Describe right and left shift of Hb-O <sub>2</sub> dissociation curve changes in different conditions. Explain Hb-O <sub>2</sub> curve changes at lung and tissue level Bohar's Effect and Helden's Effect.	<b><u>RESP-1-PHYS-12</u></b> Helden and Bohar Effect Oxygen-Hb dissociation curve	Demonstration	BCQs, SAQs, OSPE, Viva
<b>35</b>	To record the lung volumes & capacities in healthy adult on power lab & plot a graph Interpretation of Pulmonary Function Tests	<b><u>RESP-1-PHY-10</u></b> Record the lung volumes and capacities on power lab & plot a graph & Interpretation of Pulmonary Function Tests	Interactive Practical	OSPE, Viva
<b>BIOCHEMISTRY</b>				
<b>36</b>	Describe the Glycolysis in detail.	<b><u>RESP-1-BIO-6</u></b> Glycolysis	Interactive Lecture	



37	Describe the Role of TCA Cycle in cellular respiration	<b>RESP-1-BIO-7</b> Role of TCA Cycle in cellular respiration	Interactive Lecture	BCQs, SAQs, OSPE, Viva
38	Demonstrate the Arterial blood gases significance Describe the ABG's interpretation with various respiratory disorders	<b>RESP-1-BIO-8</b> Arterial blood gases (ABGs) interpretation	Interactive Practical	
<b>PATHOLOGY</b>				
39	Define chronic obstructive lung disease (COPD) Classify the types of COPD Describe its pathogenesis & clinical features.	<b>RESP-1-PATH-2</b> Chronic obstructive lung diseases (COPD)	Interactive Lecture	BCQs, SAQs, OSPE, Viva

<b>PHARMACOLOGY</b>				
40	Classify drugs used to treat dry and productive cough according to their mechanism of action. Describe the adverse effects, contraindications and drug interactions of the drugs used to treat various types of cough.	<b>RESP-1-PHARM-1</b> The treatment of the dry and productive cough	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>COMMUNITY MEDICINE</b>				
41	To define global warming and climate change To discuss greenhouse effect To describe the effects of climate change and global warming on human health and economy.	<b>RESP-1-CM-2</b> Global warming	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>CLINICAL</b>				
42	Define hypoxia and its types. What are the effects of hypoxia? Explain psychogenic dyspnea & causes of psychogenic dyspnea Define cyanosis How can you prevent cyanosis? What are three principal reasons of cyanosis Define CO2 poisoning What are the effects of CO2 poisoning? How can CO2 poisoning be prevented	<b>RESP-1-MED-2</b> Hypoxia Cyanosis CO2 poisoning	Interactive Lecture	BCQs, SAQs, OSPE, Viva

### THEME 3: LUNG PARENCHYMA AND INTERSTITIUM AND THEIR CONDITIONS OR DISEASES

S#	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
43	Define the anatomy of the pleura What is the nerve supply of the pleura	<b><u>RESP-1-ANA-G-9</u></b> Anatomy of the pleurae	Interactive Lecture	BCQs, SAQs,
44	Describe the anatomy of the lungs. The lobes and fissures of the lungs Discuss the phases of the respiration	<b><u>RESP-1-ANA-G-10</u></b> Anatomy of the lungs Mechanism of the respiration-1	Demonstration	BCQs, SAQs, OSPE, Viva
45	Define the bronchopulmonary segments. Define the types of the respiration. Discuss the clinical conditions related with lungs.	<b><u>RESP-1-ANA-G-11</u></b> Anatomy of the lungs Mechanism of the respiration-2 (bronchopulmonary segment)	Demonstration	BCQs, SAQs, OSPE, Viva
46	Define the blood and nerve supply of the lungs. Discuss the clinical conditions related with lungs	<b><u>RESP-1-ANA-G-12</u></b> Anatomy of the lungs-3 (Blood supply)	Interactive Lecture	BCQs, SAQs, OSPE,
47	Define the significance of chest X-ray in respiratory diseases. Diagnose the different clinical conditions on the basis of chest X-ray	<b><u>RESP-1-ANA-G-13</u></b> Radiology: Basics of chest X-ray	Interactive Lecture	BCQs, SAQs, OSPE, Viva
48	Discuss the formation of laryngo-tracheal groove & respiratory diverticulum or lungbuds. Define the anomalies related with the development of the lung buds. Discuss the stages of development /maturation of the lungs. Discuss the anomalies related with the lung maturation	<b><u>RESP-1-ANA-E-4</u></b> Formation of the lungbuds The maturation of the lungs	Interactive Lecture	BCQs, SAQs, OSPE, Viva

49	Describe the structure of the alveoli and interalveolar septum. Relate the functions of different types of cells, forming the alveolar wall. Describe the structure and function of the blood air barrier. Identify the alveoli with the help of light microscope.	<b><u>RESP-1-ANA-H-3</u></b> The Histology of the Lungs: Alveoli	Interactive Practical	BCQs, SAQs, OSPE, Viva
<b>PHYSIOLOGY</b>				

50	Describe mechanisms of nervous regulation of respiration Describe the respiratory centers & factor effecting on respiratory centers	<b><u>RESP-1-PHYS-13</u></b> Nervous regulation of respiration Respiratory reflexes-I	Interactive Lecture	BCQs, SAQs, OSPE, Viva
51	Describe reflexes involve in nervous regulation Describe cough, deglutition & sneezereflexes	<b><u>RESP-1-PHYS-14</u></b> Nervous regulation of respiration Respiratory reflexes-I	Interactive Lecture	BCQs, SAQs, OSPE, Viva
52	Explain chemoreceptor involved in chemical respiration Describe the regulation of respirationduring exercise Explain Periodic breathing	<b><u>RESP-1-PHYS-15</u></b> Chemical regulation of respiration Regulation during exercise	Interactive Lecture	BCQs, SAQs, OSPE, Viva
53	Define Aviation Physiology Effects of low oxygen pressure on bodyDefine space, physiological effects of space travel Explain the effect of CO <sub>2</sub> & H <sub>2</sub> O vapor decrease the alveolar oxygen on body What is acclimatization; define respiratorychanges associated with high altitude Acute & chronic mountain sickness Effects of acceleratory forces on the body in aviation & space	<b><u>RESP-1-PHYS-16</u></b> Aviation, spacePhysiology	Demonstration	BCQs, SAQs, OSPE, Viva
54	Explain deep sea diving physiology Explain effects of high partial pressureNitrogen necrosis Acute & Chronic oxygen poisoning Describe SCUBA gear & its function	<b><u>RESP-1-PHYS-17</u></b> Deep sea Divingphysiology	Interactive Lecture	BCQs, SAQs, OSPE, Viva
55	To record the effect of exercise on respiration in healthy adult on power lab& plot a graph Demonstrate the effects of hyperventilation & hypoventilation onpower lab	<b><u>RESP-1-PHY-15</u></b> Record the effect of exercise on respiration onPower lab & plot a graph	Interactive Practical	BCQs, SAQs, OSPE, Viva
56	To record the effect of stress on respiration in healthy adult on power lab& plot a graph	<b><u>RESP-1-PHY-16</u></b> Record the effect of stress on respiration Power lab & plot a graph	Interactive Practical	BCQs, SAQs OSPE, Viva

<b>BIOCHEMISTRY</b>				
<b>57</b>	Describe the organization of the ElectronTransport Chain	<b><u>RESP-1-BIO-9</u></b> Organization of Electron Transport Chain	Interactive lecture	BCQs, SAQs OSPE, Viva
<b>58</b>	Describe the Oxidative phosphorylation &ATP Synthesis	<b><u>RESP-1-BIO-10</u></b> Oxidative phosphorylation & ATP Synthesis	Interactive lecture	BCQs, SAQs OSPE, Viva
<b>59</b>	Demonstrate the Role of Emulsification inrespiration and digestion.	<b><u>RESP-1-BIO-11</u></b> Role of Emulsification in respiration and digestion	Interactive Practical	BCQs, SAQs OSPE, Viva
<b>PATHOLOGY</b>				
<b>60</b>	Define pneumonia Discuss the etiological classification of pneumonia Discuss its clinical presentation Describe the diagnostic tools for pneumonia.	<b><u>RESP-1-PATHO-3</u></b> Pneumonia	Interactive lecture	BCQs, SAQs, OSPE, Viva
<b>COMMUNITY MEDICINE</b>				
<b>61</b>	To describe the chemical composition oftobacco To describe habits of tobacco smokingDiscuss the situation of tobacco in Pakistan To discuss the health effects of smokingand second hand smoking of tobacco To explain the tobacco control program/control measure of tobacco To discuss tobacco free initiative	<b><u>RESP-1-CM-3</u></b> Tobacco and health: Effects of tobacco smoking on health of community	Interactive Lecture	BCQs, SAQs OSPE, Viva

62	To learn about disease burden of Tuberculosis To discuss the etiological Agent, source of infection, mode of transmission. To describe Environmental Factors as risk factor of developing the Tuberculosis To describe Post Primary Tuberculosis To discuss the diagnostic method of T.B. To describe the Control measures of Tuberculosis In Pakistan and its Prevention.	<b>RESP-1-CM-4</b> Communicable Disease		
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#### CLINICAL

63	What is RDS Define the sign and symptoms of the Respiratory distress syndrome What are the causes of the respiratory distress syndrome? Discuss the management	<b>RESP-1-MED-3</b> Respiratory distress syndrome	Interactive Lecture	BCQs, SAQs OSPE, Viva
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#### RADIOLOGY

64	Interpretate the normal landmarks, artifacts and soft and bony shadows of chest xray. Identify normal lung shadows, pulmonary recesses, posterior ribs number in lung fields and position of Mediastinum	<b>RESP-1-RADIO-1</b> Chest Radiograph	Interactive Lecture	BCQs, OSPE, Viva
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### TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>PROFESSIONALISM</b>						
<b>Social accountability</b>	Describe social accountability	Definition, types, components, theoretical background	Lecture	Respiration 1	2	MCQ
<b>LEADERSHIP AND MANAGEMENT</b>						
<b>Self-management skills</b>	Attributes and style of leadership	Describe different attributes and styles of leader in their own cultural context	Lecture/ Group Discussion	Respiratory 1	2	MCQs

## CLINICAL SCIENCES SUBJECTS

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>ISLAMIC STUDY</b>  Etiquettes of visiting the Patient	Discuss Protocols and etiquettes of visiting the patients in hospital or in outpatient settings	1	Lecture
		Describe briefly the importance of empathy	1	Lecture
2.	<b>PAKISTAN STUDY</b>	National surgical obstetric and anaesthetic plan – vision 2025	1	Lecture
		Sustainable development goals - universal health coverage	1	Lecture
3.	<b>ANAESTHESIA</b>  Principles of Anesthesia	Preoperative assessment of patients	1	Lecture
		Pre-medications for anesthesia	1	Lecture
		Discuss the common, age-related changes in airway management	1	Lecture
4.	<b>CRITICAL CARE</b>  Respiratory	Airway management	1	Lecture
		Acute asthma and COPD in the ICU	1	Lecture
		Acute Respiratory Distress Syndrome	1	Lecture
		Extrapulmonary causes of respiratory failure	1	Lecture
5.	<b>FAMILY MEDICINE</b> Diverse Health Issues	Irrational Use of Medications	1	Lecture
		ECGs not to Miss	1	Lecture
6.	<b>Plastic Surgery</b>  Applications	Use of plastic surgery to manage difficult and complex tissue loss	1	Lecture
		Harvesting of rib bone graft	1	Lecture
7.	<b>Psychiatry</b>  Psychotic Disorders	Schizophrenia	1	Lecture
		Delusional disorders	1	Lecture
8.	<b>Dermatology</b>	Erythema Multiform	1	Lecture
9.	<b>Cardiology</b>  Hypertension	Primary and Secondary Pulmonary Hypertension	1	Lecture
10.	<b>Patient Safety</b>  Team work and communication	Fundamentals of Teamwork and Communication	1	Lecture
		Tools and Techniques for Effective Communication	1	Lecture
		Safety During Transitions Across the Continuum of Care	1	Lecture
11.	<b>Pulmonology</b>  Respiratory Disorders	Acute respiratory infections of upper and lower respiratory tracts	2	Lecture
		Pneumonia and its types	1	Lecture
		Cystic fibrosis	1	Lecture
		Asthma, etiology, clinical features	1	Lecture
		COPD, emphysema	1	Lecture

	Disorders of Pleura, Hila and Mediastinum	TB, etiology, clinical features Bronchitis Atelectasis Bronchiolitis Bronchiectasis Bullous lung disease Croup Exposure to High Altitude Upper airway obstruction Lung Collapse Neurologic insults	1 1 1 1 1 1 1 1 1 1 1	Lecture Lecture Lecture Lecture Lecture Lecture Lecture Lecture Lecture Lecture Lecture
16.	<b>Infection Control</b>	Sharpe injuries & management of exposure to blood borne pathogens	1	Lecture

### TEACHING HOURS ALLOCATION

S. No	Subject	Teaching Hours	Practical Hours
1	Anatomy	24	6
2	Biochemistry	11	4
3	Physiology	20	8
4	Medicine	1	-
5	Pathology	3	2
6	Community Medicine	4	-
7	Pharmacology	3	-
8	CBL 4 (Anatomy)*	8	-
9	CBL 4 (Physiology)*	8	-
10	Radiology	1	-
11	Islamic Study	2	-
12	Pakistan Study	2	-
13	Anesthesia	3	-
14	Critical Care	4	-
15	Family Medicine	2	-
16	Plastic Surgery	2	-

17	Psychiatry	2	-
18	Dermatology	1	-
19	Cardiology	1	-
20	Patient Safety	3	-
21	Pulmonology	17	-
22	Infection Control	1	-
<b>Total hours</b>		<b>123</b>	<b>20</b>

\*Minimum 2 hours are allotted for each CBL session per Module

S. No	Tagged Subject	Teaching Hours
1	Professionalism	2
2	Leadership and Management	2
<b>Total hours</b>		<b>4</b>

### ASSEMENT BLUEPRINT

**RESPIRATORY-I MODULE** Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	PRA OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300



**NERVOUS SYSTEM-I MODULE**  
**SECOND PROFESSIONAL MBBS**

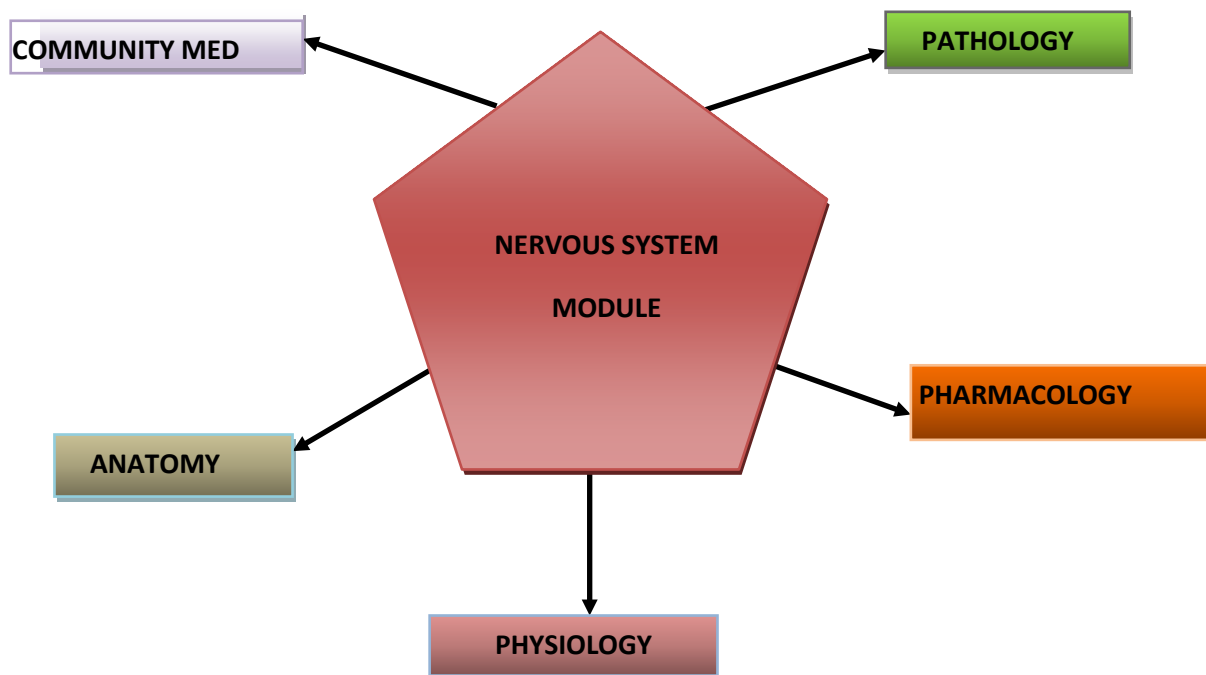


## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Head & neck and special senses, Nervous System-I, Git and Liver-I, Endocrinology-I, Renal & Excretory-I and Reproductive System-I modules which link basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF NERVOUS SYSTEM-I MODULE



## MODULE OVERVIEW

### NERVOUS SYSTEM-I MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Second professional
<b>Duration</b>	5 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

### NERVOUS SYSTEM-I MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Dr. Saqib Baloch	Anatomy	Assistant Professor
2.	Dr. Shahab Hanif	Anatomy	Assistant Professor
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### Module objectives:

- Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- Highlights information on the contribution of continuous on the student's overall performance.
- Includes information on the assessment methods that will be held to determine every student's performance.

#### Achievement of objectives:

- Focuses on information pertaining to examination policy, rules and regulations.

## INTRODUCTION

This is the neurology module. Welcome. This amazing module will be crucial to your future careers as physicians. With its interactive exercises, this module aims to make learning engaging and effective for you. By combining the teaching of the anatomy, physiology, and function of various nervous system structures with the biochemistry of neurotransmitters, which will be studied and evaluated collectively (Horizontal Integration), this module offers a basic understanding. It also covers the fundamental pharmacology and pathology related to disorders of the central and peripheral nervous systems, as well as their pertinent clinical applications (Vertical Integration).

We are better preparing you for your future work as a doctor by using this technique, since patients will come to you with issues that are not labeled according to a specific discipline.

We have revised the fundamental science curriculum to center it around a few significant health-related scenarios (real-life events) that second-year medical students are likely to face in order to support your integrated learning. To help you understand the material and learn more effectively, you will be required to consider the situations and take part in case-based learning sessions. It will also assist you in concentrating on the goals you have set for yourself in relation to the lectures, exercises, and tutorials that are scheduled for this module.

### **RATIONALE**

Nervous system disorders are widespread worldwide. Morbidity and death are avoided when acute central nervous system issues, such as infections and cerebrovascular accidents, are diagnosed and treated promptly. To lessen the incidence of disability burden on the community, early diagnosis and timely treatment of degenerative and demyelinating disorders, such as multiple sclerosis and Parkinson's disease, are crucial. Diagnosis and treatment of diseases depend on an understanding of the anatomy, physiology, and interaction between the nervous system and disease pathogenesis.

## **LEARNING OBJECTIVES**

### **Knowledge / Cognitive Domain**

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Understand the major divisions and functions of the central, peripheral, and autonomic nervous systems.
2. Acknowledge the major divisions, components, and roles of the central, peripheral, and autonomic nervous systems, including the hypothalamus.
3. Analyze the different clinical manifestations of illnesses affecting the spinal cord in relation to its anatomy, organization, and function.
4. Determine the location of common lesions in the brain stem and cranial nerves by identifying the structure of the brainstem and the corresponding cranial nerves.
5. Recognize the differences between upper and lower motor neuron lesions and pyramidal and extrapyramidal disorders based on your understanding of the types and structures of fiber bundles that run through your brain and their respective roles.
6. By recognizing the surfaces, lobes, sulci, and gyri of each cerebral hemisphere, one can distinguish between the functions of the dominant and non-dominant hemispheres as well as between different regions within each hemisphere.
7. Establish a relationship between the topographic structure and function of basal nuclei and the clinical manifestation of Parkinson's disease.
8. Remember the structure and functioning of the limbic system to better understand the changes in behavior, emotions, and personality.
9. Examine the effects of elevated intracranial pressure in relation to the ventricular system, the structure of the cranio-spinal meninges, and the processes involved in the creation, flow, drainage, and chemistry of CSF in both healthy and pathological conditions.
10. Connect the various brain ischemia and ischemic myelopathy syndromes to the brain and spinal cord's vascular supply pattern and your understanding of the blood-brain barrier.
11. Use your understanding of venous drainage and dural venous sinuses to identify the consequences of venous stasis and obstruction.
12. Recognize different congenital brain and spinal cord malformations by understanding the embryological basis of neurulation, the neural tube's metamorphosis into the central nervous system, and any defects that arise during these processes.
13. Determine the neuro-anatomic cause of incoordination and ataxia by using your understanding of the cerebellar cortex, nuclei, and peduncles.

14. Describe the general structure of the nervous system as well as the anatomy of the brain and spinal cord.
15. Examine the nerve system's physiology and the neuro-metabolites' biochemistry.
16. Describe the mechanisms of cerebral bleeding, ischemia, hypoxia, and infarction.
17. Describe the strategy for a patient with neurologic symptoms and its screening.

#### **Skills / Psychomotor Domain:**

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

1. Identification of nerve tissues using points of identification under a microscope. (In their histology journals, students must sketch and label microscopic slides of nervous system components. The journal will be evaluated at the end of the module.)
2. Conduct a clinical nervous system evaluation.
3. Perform various cranial nerves examination
4. Examine a patient with cerebellar disorders

#### **Attitude / Affective Domain:**

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

1. Comply with standard laboratory procedures
2. Engage in professional classroom and practical work.
3. Work as a team to effectively communicate with instructors, staff, and peers.
4. Act with professionalism and moral principles when interacting with teachers, personnel, cadavers, and patients.
5. Work well as a team to communicate with instructors and peers.
6. Show that you have the capacity to evaluate your performance.

#### **Outcomes of Nervous System-I Module**

1. Knowledgeable
2. Skillful
3. Community Health Promoter
4. Problem-solver
5. Professional
6. Researcher
7. Leader and Role Model

### **LEARNING METHODOLOGIES**

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Skills session
- Practicals
- Self-Directed Study

#### **• INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to Anatomy, Physiology and Biochemistry have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

### THEMES FOR NERVOUS SYSTEM MODULE

SNO	Theme	Duration
1	Lower motor neuron lesions & the corticospinal tracts	2 week
2	Gait abnormalities and the thalamic disorders	2 week
3	Upper motor neuron lesions & the Parkinson's disease	1 week

### SPECIFIC LEARNING OBJECTIVES THEME WISE

#### THEME 1: LOWER MOTOR NEURON LESIONS & THE CORTICOSPINAL TRACT

#### NERVOUS SYSTEM MODULE

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b><u>NEUROANATOMY</u></b>				
01	Describe organization and components of Nervous System. Describe the parts of Brain and Spinalcord. Describe the components of Peripheral Nervous System. Describe the cranial and spinal nerves. Describe the components of Autonomic Nervous System. Associated clinical correlates and Imaging techniques.	<b><u>NS-ANA-G-1</u></b> Introduction to Nervous System	Interactive Lecture	BCQs, SAQs, OSPE, Viva

<b>02</b>	<b>Describe external &amp; internal morphology of spinal cord. Clinical correlates</b>	<b><u>NS-ANA-G-2</u></b> Structure of the Spinal cord	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>03</b>	Describe different nuclei in three columns of spinal cord Clinical correlates	<b><u>NS-ANA-G-3</u></b> Nuclei of the Spinal cord	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>04</b>	Describe Ascending and descending tracts. Clinical correlates	<b><u>NS-ANA-G-4</u></b> The Ascending and descending tracts of the Spinal cord	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>05</b>	Describe the detailed Anatomy of medulla oblongata Describe External & Internal structure at four different levels Explain the Applied anatomy of medulla oblongata	<b><u>NS-ANA-G-5</u></b> Introduction to Brainstem (Anatomy of the Medulla Oblongata)	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>06</b>	Describe the detailed Anatomy of Pons Describe External & Internal structure at two different levels of Pons Explain the Applied anatomy of Pons	<b><u>NS-ANA-G-6</u></b> Anatomy of the Pons	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>07</b>	Describe the detailed Anatomy of Midbrain Describe External & Internal structure at two different levels of Midbrain Explain the Applied anatomy of Midbrain	<b><u>NS-ANA-G-7</u></b> Anatomy of the Midbrain	Interactive Lecture	BCQs, SAQs, OSPE, Viva

<b>08</b>	Describe the development of neural tube, and neural crest cells and their derivatives.	<b><u>NS-ANA-E-1</u></b> Development of neural tube	Interactive Lecture	BCQs, SAQs, OSPE,
<b>09</b>	Describe the development of spinal cord. Describe the derivatives of alar & basal plates Development of neurons, neuroglial cells and spinal nerves Explain the positional changes of spinal cord. Clinical correlates of neural tube	<b><u>NS-ANA-E-2</u></b> Development of spinal cord	Interactive Lecture	BCQs, SAQs, OSPE,
<b>10</b>	Describe the nervous tissue Define neuron, its structure and function & types of neurons Define neuroglia, their types and functions	<b><u>NS-ANA-H-1</u></b> Histology of the Nervous tissue (Types of Neuron and neuroglia )	Interactive Practical	BCQs, SAQs, OSPE, Viva
<b>11</b>	Describe the histological features of peripheral nerve and ganglia	<b><u>NS-ANA-H-2</u></b> Peripheral nerve and Ganglia	Interactive Practical	BCQs, SAQs, OSPE, Viva
<b>NEURO-PHYSIOLOGY</b>				
<b>12</b>	Definition & Organization of the nervous system Know about Physiological division of nervous system Determine Levels of nervous system	<b><u>NS-PHYS-1</u></b> Nervous system – overview	Interactive Lecture	BCQs, SEQs, OSPE, Viva

<b>13</b>	Discuss electrical properties of neuron Discuss generation of action potential conduction across the neuronal membrane and transmission of nerve signals List functions of neuroglial cells Discuss synthesis and physiology of cerebro spinal fluid (CSF) Define Myelin sheath Define Salutatory conduction Regeneration of nerve fibre Blood brain barrier	<b><u>NS-PHYS-2</u></b> Neurons and Neuroglias	Demonstration	BCQs, SEQs, OSPE, Viva
<b>14</b>	Define Synapse, types and properties of synapse Determine Structure of synapses Discuss transmission of electrical signals between neurons	<b><u>NS-PHYS-3</u></b> Synapses and neural integration	Interactive Lecture	BCQs, SEQs, OSPE, Viva
<b>15</b>	Define Plan of sensory system Describe general characteristics of	<b><u>NS-PHYS-4</u></b> Spinal	Interactive Lecture	BCQs, SEQs, OSPE, Viva

	Receptors Classify receptors according to location and Modalities of sensation. Define receptor potential and transduction Define Touch & its receptors Define Pressure & its receptors Define Vibration & its receptors Define Tickle & itch, its receptors	<b>Sensory/Somatic system and Receptors</b>		
<b>16</b>	List different types of sensory pathway, their location, tracts, sensory modalities and receptors. Discuss dorsal column medial laminiscal system, its location, receptors, tracts and sensory modalities. Discuss Antero-lateral system (spino- thalamic), its location, receptors, tracts and sensory modalities.	<b><u>NS-PHYS-5</u></b> Sensory /Ascending pathways <b>(DCMLP)</b> (Anterio lateral pathway)	Demonstration	BCQs, SEQs, OSPE, Viva
<b>17</b>	To perform superficial & deep reflexes and its significance in different neurological disorders. To perform Corneal reflexes To perform Abdominal reflexes To perform Plantar reflexes To perform superficial deep reflexes and its significance	<b><u>NS-PHYS-6</u></b> Superficial reflexes and deep reflexes	Interactive Practical	BCQs, SEQs, OSPE, Viva

**PHARMACOLOGY**



18	Define sedative and hypnotics Classify the drugs Discuss their mechanism of action Enlist the therapeutic uses of the drugs	<b><u>NS-Phar-1</u></b> Sedative and hypnotics	Interactive Lecture	BCQs, SAQs, OSPE, Viva
19	Classify the drugs Discuss their mechanism of action Enlist the therapeutic uses of the drugs	<b><u>NS-Phar-2</u></b> Opioid agonist and antagonist	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>PATHOLOGY</b>				
20	Enlist the causes of meningitis. Discuss the CSF findings of different types of meningitis	<b><u>NS-Patho-1</u></b> Meningitis	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>COMMUNITY MEDICINE</b>				
21	To discuss the epidemiology of rabies. Describe agent, host environment factors and modes of transmission. To discuss the prevention and control measures of rabies	<b><u>NS-CM-1</u></b> Rabies	Interactive Lecture	BCQs, SAQs, OSPE, Viva

## THEME 2: GAIT ABNORMALITIES AND THE THALAMIC DISORDERS

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>NEUROANATOMY</b>				
22	Describe the detailed Anatomy of cerebellum Explain the anatomical & physiological divisions of cerebellum Discuss characteristic features of cerebellar cortex; gray matter, white matter & deep cerebellar nuclei.	<b><u>NS-ANA-G-8</u></b> Anatomy of the cerebellum-I	Interactive Lecture	BCQs, SAQs, OSPE, Viva
23	Explain connections of cerebellar cortex and deep cerebellar nuclei. Clinical correlates.	<b><u>NS-ANA-G-9</u></b> Anatomy of the cerebellum-II	Interactive Lecture	BCQs, SAQs, OSPE, Viva
24	Describe the structure of Diencephalon Describe divisions of Diencephalon (thalamus, hypothalamus, subthalamus, epithalamus) Explain the boundaries of diencephalon and 3 <sup>rd</sup> ventricle	<b><u>NS-ANA-G-10</u></b> Introduction to Diencephalon-1	Interactive Lecture	BCQs, SAQs, OSPE, Viva
25	Narrate the functions, nuclei and connections of Thalamus. Narrate the functions, nuclei and connections of Epithalamus, subthalamus and third ventricle. Narrate the functions, nuclei and connections of hypothalamus. Clinical correlates.	<b><u>NS-ANA-G-11</u></b> Introduction to diencephalon-II (Thalamus and hypothalamus)	Interactive Lecture	BCQs, SAQs, OSPE, Viva
26	Identify the location, components & connections of limbic system. Describe clinical aspects related to limbic system.	<b><u>NS-ANA-G-12</u></b> The reticular formation and Limbic system	Interactive Lecture	BCQs, SAQs, OSPE, Viva

27	Describe topographical anatomy of cerebral gray matter, gyri, sulci and lobes of cerebral hemispheres Describe the surfaces of cerebral cortex; superolateral, inferior and medial along with specific lobes present in them.	<b><u>NS-ANA-G-13</u></b> The Cerebrum-I	Interactive Lecture	BCQs, SAQs, OSPE, Viva
28	Describe the development of medulla oblongata Describe the development of pons Describe the development of cerebellum. Describe the development of midbrain	<b><u>NS-ANA-E-3</u></b> Development of Hind brain (Myelencephalon Metencephalon and mesencephalon)	Interactive Lecture	BCQs, SAQs, OSPE, Viva

29	Describe the development of thalamus Describe the development of hypothalamus To understand the development of pituitary gland	<b><u>NS-ANA-E-4</u></b> Development of Diencephalon, Optic structures & Hypophysis	Interactive Lecture	BCQs, SAQs, OSPE, Viva
30	Describe white matter. Describe Gray Matter. Identify structures in the gray and white matter.	<b><u>NS-ANA-H-3</u></b> Histology of the Spinal Cord	Interactive Practical	BCQs, SAQs, OSPE, Viva

#### NEUROPHYSIOLOGY

31	Define Pain Types, qualities and receptors Which Pathways are involved, discuss dual pathways for transmission of pain signals into CNS Define Analgesic system of brain & its physiological role What is Referred pain, differentiate btw somatic & Visceral pain Define Methods of analgesia What are Pain abnormalities Define Hyperalgesia List pain suppression and brain opioid system. Define Headache, types and patho-physiology	<b><u>NS-PHYS-7</u></b> Pain pathways & Analgesic pathway	Interactive Lecture	BCQs, SAQs, OSPE, Viva
32	Describe Scheme of motor activity & Motor areas of the cerebral cortex To explain the motor function of spinal cord. To explain the structure & function of muscle spindle. To determine the muscle, stretch reflex & its clinical applications. To explain the mechanism of Golgi tendon reflex. & its significance in controlling motor activities. Define brown-sequard syndrome & its pathophysiology. Describe the physiology of CSF synthesis, list functions of CSF and its importance.	<b><u>NS-PHYS-8</u></b> Spinal level of Motor control & CSF	Demonstration	BCQs, SAQs, OSPE, Viva

33	To perform superficial deep reflexes and its significance	<b>NS-PHYS-9</b> Deep reflexes	Interactive Practical	BCQs, SEQs, Structured Viva
34	Define Pyramidal tracts features & its Pathway, What are lesions of UMN & clinical correlates	<b>NS-PHYS-10</b> Descending pathways-1 (Pyramidal Tract)	Interactive Lecture	BCQs, SEQs, Structured Viva

35	Define Extra pyramidal tracts features & its Pathway What are Lesions of LMN & its clinical correlates Differentiate btw Decerebrate & decorticate rigidity	<b>NS-PHYS-11</b> Descending pathways-2 (Extrapyramidal Tract)	Interactive Lecture	BCQs, SEQs, Structured Viva
36	Give the special features of cerebellum Name its physiological divisions & their function Explain the internal neuronal circuit of cerebellum and its functioning Describe the features of cerebellar lesions	<b>NS-PHYS-12</b> Cerebellum & its lesion	Interactive Lecture	BCQs, SEQs, Structured Viva
37	To perform cerebellar function tests and to identify associated disorders.	<b>NS-PHYS-13</b> Cerebral function tests	Interactive Practical	BCQs, SEQs, OSPE, Viva

#### PHARMACOLOGY

38	Define epilepsy and seizures Tell the difference between epilepsy and seizures Discuss the etiology of epilepsy Elaborate the types of epilepsy Classification of anti-epileptic drugs Discuss the side effects of anti-epileptic drugs Identify the Possible mechanism of action of anti-epileptics	<b>CNS-Phar-3</b> Anti-Epileptic Drugs	Interactive Lecture	BCQs, SAQs, OSPE, Viva
39	Describe stages of general anesthesia and the anesthetic agents used Define the mode of action of different general anesthetics Classify local anesthetic drugs Define the mode of action of different local anesthetics Recognize complications related to different agents.	<b>CNS-Phar-4</b> Drugs Of General & Local Anesthesia	Interactive Lecture	BCQs, SAQs, OSPE, Viva

#### COMMUNITY MEDICINE

40	To define diphtheria Describe agent, host environment factors and modes of transmission. To discuss the epidemiology and prevention of diphtheria	<b>CNS-CM-2</b> Diphtheria	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>NEUROANATOMY</b>				
41	Explain the dominance & non-dominance correlation with structure & functions of cerebral cortex Describe functional areas of cerebral cortex Discuss lesions of functional areas of cerebral cortex	<b><u>NS-ANA-G-11</u></b> Introduction to cerebral hemispheres-II (Functional areas)	Interactive Lecture	BCQs, SAQs, OSPE, Viva
42	Describe different types of fibers in cerebral hemisphere; association, projection & commissural fibers. Explain parts of corpus callosum and fornix. Name the parts and tracts of internal capsule. Blood supply of internal capsule Clinical correlates.	<b><u>NS-ANA-G-12</u></b> Introduction to cerebral hemispheres-III (White matter )	Interactive Lecture	BCQs, SAQs, OSPE, Viva
43	Identify the location and components of basal nuclei. Explain the connections of basal nuclei. Describe clinical aspects related to basal nuclei.	<b><u>NS-ANA-G-13</u></b> Basal nuclei and their connections	Interactive Lecture	BCQs, SAQs, OSPE, Viva
44	Define the organization, connections and distribution of the cranial nerves from cranial nerve-I to VI Clinical correlates	<b><u>NS-ANA-G-14</u></b> Cranial nerve Nuclei and their central connections-1	Interactive Lecture	BCQs, SAQs, OSPE, Viva
45	Define the organization, connections and distribution of the cranial nerves from cranial nerve-VII-XII Clinical correlates	<b><u>NS-ANA-G-15</u></b> Cranial nerve nuclei and their central connections-2	Interactive Lecture	BCQs, SAQs, OSPE, Viva
46	Describe and identify the layers of cerebellar cortex Describe and identify the cells of cerebellar cortex	<b><u>NS-ANA-H-3</u></b> Histology of Cerebellar Cortex	Interactive Practical	BCQs, SAQs, OSPE, Viva
47	Describe the organization and division of the autonomic nervous system. Define preganglionic and post ganglionic sympathetic and parasympathetic fibers	<b><u>NS-ANA-G-16</u></b> The Autonomic nervous system	Interactive Lecture	BCQs, SAQs, OSPE, Viva
48	Identify the ventricles of brain along with their location; Lateral, 3 <sup>RD</sup> & 4 <sup>TH</sup> ventricles of brain + choroid plexus Explain the normal CSF secretion and circulation. Define the Blood brain barrier	<b><u>NS-ANA-G-17</u></b> Ventricular System	Interactive Lecture	BCQs, SAQs, OSPE, Viva

49	Describe division of the arterial system into Carotid & Vertebral Systems Identify areas of brain supplied by different branches of these arterial systems & blood supply of areas other than cerebral cortex Explain applied aspects related to the blockage & Hemorrhage of blood vessels supplying brain & spinal cord.	<b><u>NS-ANA-G-18</u></b> Blood supply of brain and spinal cord	<b>Interactive</b> Lecture	BCQs, SAQs, OSPE, Viva
50	Describe the development of cerebral hemispheres Describe the development of basal nuclei	<b><u>NS-ANA-E-5</u></b> Development of Telencephalon	Interactive Lecture	BCQs, SAQs, OSPE,
51	Mention the development of cranial nerves To understand the functional components of various cranial nerves. Describe the congenital defects of brain	<b><u>NS-ANA-E-6</u></b> Development of Cranial nerves and autonomic nervous system	Interactive Lecture	BCQs, SAQs, OSPE, Viva
52	Explain and identify the different types of cells of cerebral cortex Describe and identify the layers of cerebral cortex	<b><u>NS-ANA-H-4</u></b> Histology of cerebral cortex	Interactive Practical	BCQs, SAQs, OSPE, Viva

#### NEUROPHYSIOLOGY

53	Name the basal ganglia List the functions of basal ganglia Describe the functions of caudate & putamen circuits Describe the lesions of basal ganglia (Parkinson's disease)	<b><u>NS-PHYS-14</u></b> Basal nuclei and its' diseases	Interactive Lecture	BCQs, SEQs, OSPE ,Viva
54	To explain vegetative functions of hypothalamus To explain the different functions of limbic system To mention the role of hypothalamus in limbic system. To explain the functions of reward and punishment centers. To elaborate the functions of hippocampus and amygdala. To describe the effects of Kluver-Bucy syndrome.	<b><u>NS-PHYS-15</u></b> Hypothalamus & Limbic System	Demonstration	BCQs, SEQs, OSPE ,Viva
55	To examine body temperature and to related abnormalities	<b><u>NS-PHYS-16</u></b> Body temperature	interactive practical	

56	To explain the physiology of slow wave sleep & rapid eye movement (REM) sleep. To explain the basic theories of sleep Describe the names & origin of brain waves. Describe epilepsy & clinical correlates	<b><u>NS-PHYS-17</u></b> Sleep & its disorders	Interactive Lecture	BCQs, SEQs, Structured Viva
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57	Define memory Give various types of memory & their importance Describe neural mechanism involved in memory Give disorders of memory (Alzheimer's disease) Define speech Name motor and sensory cortical areas of speech & their function Describe speech disorders	<b>NS-PHYS-18</b> Memory & Speech and its disorders	Demonstration	BCQs, SEQs, Structured Viva
58	Define following terms & their physiological importance: Preganglionic & Postganglionic Sympathetic & Parasympathetic Define Dual innervations of viscera Adrenal medulla Define Sympathetic discharge Differentiate btw Receptors, Neurotransmitters & drugs	<b>NS-PHYS-19</b> Autonomic nervous system	Demonstration	BCQs, SEQs, Structured Viva
59	To examine brain waves with the help of powerlab.	<b>NS-PHYS-20</b> EEG	Interactive Practical	BCQs, SAQs,

#### PHARMACOLOGY

60	List three different classes of antipsychotic drugs and describe the main pharmacological effects they produce Describe the common adverse effects and specific neurological conditions caused by antipsychotic drugs	<b>NS-Phar-5</b> Anti-Psychotic Drugs	Interactive Lecture	BCQs, SAQs, OSPE, Viva
61	Classification of anti-depressants Discuss the signs and symptoms of depression Enlist the differential diagnosis Discuss the possible Causes of this disorder Describe the management options and treatment	<b>NS-Phar-6</b> Anti-Depressants	Interactive Lecture	BCQs, SAQs, OSPE, Viva

#### COMMUNITY MEDICINE

62	To define Tetanus Describe agent, host and modes of transmission. To discuss the epidemiology and prevention of tetanus	<b>NS-CM-3</b> Tetanus	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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#### RADIOLOGY

63	Interpretate the Normal CT Scan of Brain Identify the ventricle, skull, brain tissue, orbits and eyeballs.	<b>NS-Radio-3</b> CT scan of Brain	Interactive Lecture	BCQs, OSPE, Viva
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### TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>PROFESSIONALISM AND BEHAVIORAL SCIENCES</b>						

<b>Social accountability</b>	Definition and concept of social accountability	Describe the concept of social accountability	Lecture/ Small group Teaching	Neurosciences	1	MCQ
<b>Mental illness</b>	Definition, types, components, theoretical background	Define mental illness, its importance, impact, and prevention	Lecture/ Small group Teaching	Neuroscience	1	MCQ
<b>Social psychology, health &amp; terrorism</b>	Definition, types, components, theoretical background	Describe social psychology, and its relation on health and terrorism	Lecture	Neurosciences	1	MCQ
<b>RESEARCH</b>						
<b>Qualitative research methodology</b>	Introduction to qualitative research methodology	Describe qualitative research methodology.	Lecture/ Group Discussion	Neurosciences	3	MCQs/Assignment

### CLINICAL SCIENCES SUBJECTS

#### Nervous system

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>ISLAMIC STUDY</b>  Ethical issues in organ transplantat ion  Research: its importance and need	Evaluate the various ethical issues involved in organ transplantation in light of the Islamic Perspective	1	Lecture
		Recognize the Importance of research in national development. Explain the importance of research according to the teachings of the Holy Quran and Sunnah.	1	Lecture
2.	<b>PAKISTAN STUDY</b>	Awareness campaigns	1	Lecture
		Role of WHO	1	Lecture
3.	<b>ANAESTHESIA</b>  Regional Anesthesia	Describe the basic principles of regional anesthesia	1	Lecture
		Anatomy of Spinal Space	1	Lecture
		Discuss Spinal and epidural methods	1	Lecture
		Discuss complications of spinal and general anesthesia	1	Lecture
4.	<b>CRITICAL CARE</b>  Neurology	Evaluation of a patient with altered consciousness in ICU	1	Lecture
		Metabolic Encephalopathy	1	Lecture
		Cerebrovascular disease	1	Lecture
		Status epilepticus		
5.	<b>ORTHOPAEDICS &amp; TRAUMA</b> Grafting	Skin grafting	1	Lecture
		Biopsy	1	Lecture
		Bone Grafting	1	Lecture
6.	<b>Family Medicine</b> Common Mental Health	Anxiety, Depression, Dementia and Psychosis	1	Lecture
		Psychotherapy / Counseling	1	Lecture

Problems	Acute Mental Health presentations	1	Lecture
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### TEACHING HOURS ALLOCATION

S. No	Subject	Hours	Practical Hours
1	Anatomy	27	8
2	Physiology	26	6
3	Pharmacology	6	-
4	Community Medicine	3	-
5	Pathology	1	-
6	CBL 2 (Anatomy)*	4	-
7	CBL 5 (Physiology)*	10	-
8	Radiology	1	-
9	Islamic Study	2	-
10	Pakistan Study	2	-
11	Anesthesia	4	-
12	Critical Care	4	-
13	Orthopaedics & Trauma	3	-
14	Family Medicine	3	-
<b>Total hours</b>		<b>96</b>	<b>14</b>

\*Minimum 2 hours are allotted for each CBL session per Module

S. No	Tagged Subject	Teaching Hours
1	Professionalism and Behavioral Sciences	3
2	Research	3
<b>Total hours</b>		<b>6</b>



**ASSESSMENT BLUEPRINT****NERVOUS SYSTEM-I MODULE**

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

## LEARNING RESOURCES

The learning resources for the educational contents of BDS program are available for the students which assist learners to achieve the outcomes and by focusing on educational content. In addition; the names of the books for each subject as a learning resources is available with the educational content of the same subject.

Following learning resources can be used by the undergraduates;

- Books
- Evidence based articles from journals
- Digital library to search the material for self-directed learning
- Video Tapes
- Displays
- Models
- Phantom Heads
- Printed Notes
- Case based scenarios'
- Community Visits

### Recommended Books First YEAR MBBS

Anatomy	Physiology	Biochemistry
<ul style="list-style-type: none"> <li>• Clinically Oriented Anatomy Keith.L. Moore, Arthur F. Dalley, Anne M.R. Agur 7<sup>th</sup> Or Latest Editio</li> <li>• Gray's Anatomy For Students Drake &amp; Vogl &amp; Mitchell 3<sup>rd</sup> Or Latest Edition               <ul style="list-style-type: none"> <li>• Clinical Anatomy By Regions (Reference Book) Richard S. Snell 9<sup>th</sup> Edition</li> </ul> </li> <li>• Last's Anatomy: Regional &amp; Applied (Reference Book) Chummy S. Sinnatamby 12<sup>th</sup> Or Latest Edition</li> <li>• Atlas Of Human Anatomy Frank H. Netter 6<sup>th</sup> Edition</li> </ul> <p><b>Embryology</b></p> <ul style="list-style-type: none"> <li>• Langman's Medical Embryology T.W. Sadler 13<sup>th</sup> Edition               <ul style="list-style-type: none"> <li>• The Developing Human Clinically Oriented Embryology (Reference Book) Moore &amp; Persaud &amp; Torchia 10<sup>th</sup> Edition</li> </ul> </li> </ul> <p><b>Histology</b></p> <ul style="list-style-type: none"> <li>• Medical Histology Laiq Hussain Siddiqui</li> </ul>	<ol style="list-style-type: none"> <li>5. Guyton and Hall Textbook of Medical Physiology – 15<sup>th</sup> Edition.</li> <li>6. Ganong's Review of Medical Physiology, 27<sup>th</sup> Edition.</li> </ol>	<ol style="list-style-type: none"> <li>5. Harper's Illustrated Biochemistry, 32 edition.</li> <li>6. Lippincot t' Illustrated Reviews- Biochemistry 7<sup>th</sup> edition.</li> </ol>

<p>5<sup>th</sup> Or Latest Edition  Wheaters Functional  Histology <a href="#">Barbara Young</a>  5<sup>th</sup> Edition</p> <ul style="list-style-type: none"> <li>Basic Histology (Text And  Atlas) (Reference Book)  <a href="#">Luiz Junqueira, Jose Carneiro</a>  11<sup>th</sup> Or Latest Edition</li> </ul>			
<b>Pathology</b>	<b>Community Medicine</b>	<b>Pharmacology</b>	
Robbins & Cotran Pathologic Basis Of Disease <a href="#">Vinay Kumar, Abul K. Abbas, Jon C. Aster</a> 10 <sup>th</sup> Edition	Park's Text book of Preventive And Social Medicine <a href="#">K. Park</a>	1. Lippincott Illustrated Reviews: Pharmacology <a href="#">Karen Whalen, Carinda Feild, Rajan Radhakrishnan</a>	



**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you? Y  N
- B. The course contents met with your expectations  
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned  
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with  
l. Too few examples 5. Adequate examples
- E. The level of the course was  
l. Too low 5. Too high
- F. The course contents compared with your expectations  
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices  
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?  
l. Not at all 5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand  
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used  
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate  
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful  
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes  No

F. Please give overall rating of the course

90% - 100% (    )

60% - 70% (    )

80% - 90% (    )

50% - 60% (    )

70% - 80% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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**HEAD & NECK AND SPECIAL SENSES MODULE**  
**SECOND PROFESSIONAL MBBS**



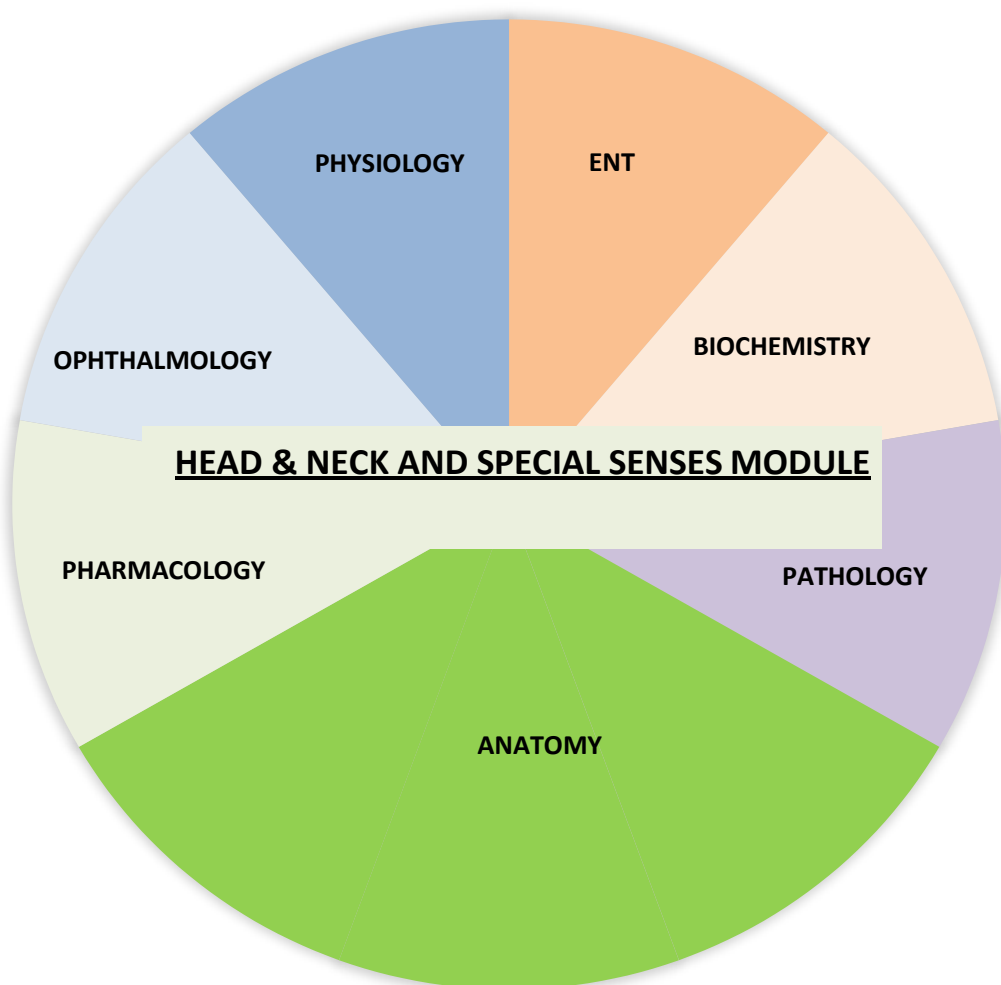
## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Head & neck and special senses, Nervous System-I, Git and Liver-I, Endocrinology-I, Renal & Excretory-I and Reproductive System-I modules which link basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF HEAD & NECK AND SPECIAL SENSES MODULE

#### MODULE OVERVIEW



#### HEAD & NECK AND SPECIAL SENSES MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Second professional
<b>Duration</b>	7 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment

<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

<b>HEAD &amp; NECK AND SPECIAL SENSES MODULE COMMITTEE</b>			
<b>Sr. No</b>	<b>Names</b>	<b>Department</b>	<b>Designation</b>
<b>MODULE COORDINATOR</b>			
1.	Dr. Saqib Baloch	Anatomy	Assistant Professor
2.	Dr. Shahab Hanif	Anatomy	Assistant Professor
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### **Module objectives:**

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

#### **Achievement of objectives:**

- Focuses on information pertaining to examination policy, rules and regulations.

### **LEARNING METHODOLOGIES**

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Skills session
- Practicals
- Self-Directed Study

#### • **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

#### • **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.



- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to Anatomy, Physiology and Biochemistry have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

The head and neck module covers both the morphological structures of the head and neck as well as the physiological aspects of certain structures, such as the physiology of the specific senses of the eyes (vision), ears (hearing and balancing), nose (olfaction), and mouth (taste). Despite not being a separate system, the head and neck region contains vital organs such as the mouth, larynx, ears, nose, and eyes, thus understanding it as a whole is crucial. These are all close to one another, and illnesses that affect one of them frequently have a consequential effect on other organs. Head, face, and neck injuries are linked to high rates of both morbidity and mortality.

The goal of the second-year MBBS head and neck module (HNM) is to integrate basic and clinical sciences. Students studying fundamental sciences will be able to explain the gross and microscopic anatomy of the head, neck, eyes, and ears as well as pertinent biochemistry, pathology, and neurophysiology. Students will be able to apply their knowledge from a meaningful clinical viewpoint with the assistance of integration with pertinent clinical sciences areas. The fundamentals of the anatomy and physiology of the head and neck's constituent parts are covered in this module.

### RATIONALE

Important anatomical features of the head and neck include the larynx, pharynx, oral cavity, ears, nose, and eyes. Both the anatomy and function of these structures should be thoroughly understood by students. Conditions affecting these structures, such as tonsillitis, rhinitis, sore throats, red eyes, etc., are highly prevalent. A student would be able to assist patients in their community who suffer from these prevalent ailments if they had expertise of basic science and pertinent clinical knowledge acquired through clinical lectures and case-based scenarios. As a result, individuals may contribute to society and act as a responsible community member.

## LEARNING OBJECTIVES

### Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Overview the head and neck regions
2. Identify the derivatives of pharyngeal arches and pouches
3. Identify the abnormalities of pharyngeal arches and pouches
4. Identify the features of the vault & base of skull
5. Recognize the importance of scalp in the region of head

6. Identify the views of skull
7. Enumerate the contents of orbital region
8. Correlate the structures of eye with its functions
9. Identify the disorders of optical system at different levels
10. Explain the biochemical functions of vitamin A and effects of vitamin A deficiency on vision
11. Describe the major and minor salivary glands
12. Enumerate the structures of the temporal region
13. Recognize the importance of mandibular region in the face of an individual
14. Identify the structures of ear & histological features of ear
15. Identify the parts of auditory pathway and describe the mechanism of transmission of sound
16. Describe mechanism of balance how the body regulate balance
17. Identify the structures of nose & Para-nasal Sinuses
18. Identify the structure and function of oral cavity & related disorders
19. Describe sense of olfaction with relation to anatomical & biochemical function of related structures
20. Describe the deep structures in the neck.
21. Enumerate 12 cranial nerves Explain clinical effects of injury to each cranial nerve

**Skills / Psychomotor Domain:**

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

1. Observation and Assistance
2. Performing the skill under supervision
3. Performing the skill independently
4. Obtain a comprehensive history of patient with gastrointestinal and hepatobiliary disorders.

**Attitude / Affective Domain:**

It involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

1. Comply with standard laboratory procedures
2. Engage in professional classroom and practical work.
3. Work as a team to effectively communicate with instructors, staff, and peers.
4. Act with professionalism and moral principles when interacting with teachers, personnel, cadavers, and patients.
5. Work well as a team to communicate with instructors and peers.
6. Show that you have the capacity to evaluate your performance.

**Outcomes of Head & Neck and Special Senses Module**

1. Knowledgeable
2. Skillful
3. Community Health Promoter
4. Problem-solver
5. Professional
6. Researcher
7. Leader and Role Model

## THEMES FOR HEAD & NECK AND SPECIAL SENSES MODUL

SNO	Theme	Duration
1	Fractures of the Skull & Scalp injuries	1 week
2	Facial injuries and the bell's palsy	1 week
3	Disorders of the salivary glands and neck lesions	1 week
4	Waldeyer's ring, Tonsillitis and oral cancers	1 week
5	Visual field defects, Glaucoma, Role of Vitamin A	2 weeks
6	Deafness, vertigo, otitis media	1 week

### SPECIFIC LEARNING OBJECTIVES THEME WISE

#### THEME 1: FRACTURES OF THE SKULL & SCALP INJURIES

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY (GROSS ANATOMY)</b>				
01	Explain the overview of neck regions Explain the overview of head surface, muscles, innervations, blood supply & venous drainage	<b>HN-ANA-G-1</b> Overview of the head and neck regions	Interactive Lecture	BCQs, SAQs, OSPE, Viva
02	Define axial skeleton Describe bones of skull and cranium Explain overview of Skull Geography & Sutures Differentiate the various views of the skull	<b>HN-ANA-G-2</b> Osteology of the Skull and the vault	Interactive lecture	BCQs, SAQs, OSPE, Viva
03	Define norma frontalis Explain the different regions of it Enumerate the muscle attachment Describe Boundaries and features of its structure.	<b>HN-ANA-G-3</b> Skull: Norma frontalis	Demonstration	BCQs, SAQs, OSPE, Viva
04	Enlist various bones in norma lateralis Describe the Cranial and facial subdivisions Define External acoustic meatus	<b>HN-ANA-G-4</b> Norma lateralis and occipitalis	Demonstration	BCQs, SAQs, OSPE, Viva
05	Describe bones forming the base of skull Explain the details of anterior, middle and posterior part of base of skull Identify different foramina and structures passing through them at the base Explain the attachments and relations of base of skull	<b>HN-ANA-G-5</b> Norma Basalis Anterior, middle and posterior parts	Demonstration	BCQs, SAQs, OSPE, Viva

06	Describe bones forming the cranial cavity Explain the details of anterior, middle and posterior fossae of the cranial cavity Identify different foramina and structures passing through them.	<b>HN-ANA-G-6</b> Cranial cavity	Demonstration	BCQs, SAQs, OSPE, Viva
07	Describe the meninges of the brain and spinal cord. Discuss the venous sinuses. Discuss the related clinicals.	<b>HN-ANA-G-7</b> The meninges of brain and spinal cord & the venous sinuses	Interactive lecture	BCQs, SAQs, OSPE, Viva
08	Explain the extent of scalp Describe five layers of scalp Identify the nerves and vessels of scalp Enumerate the clinical correlates	<b>HN-ANA-G-8</b> Scalp (layers, Nerves & Vessels)	Interactive Lecture	BCQs, SAQs, OSPE, Viva

09	Describe development of pharyngeal Apparatus List the Parts of pharyngeal apparatus. Describe development of pharyngeal arches. Enlist the derivatives of pharyngeal arches. Describe the related congenital anomalies.	<b>NS-ANA-E-1</b> Pharyngeal Apparatus. Pharyngeal Arches	Interactive Lecture	BCQs, SAQs, OSPE, Viva
10	Describe development of pharyngeal pouches & clefts. Enlist the derivatives of pharyngeal pouches & clefts. Describe the related congenital anomalies.	<b>NS-ANA-E-2</b> Pharyngeal pouches & clefts.	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>PHYSIOLOGY</b>				
11	To perform the movements of eye ball and muscles controlling these movements Accommodation reflex & pupillary light reflex their pathway Diplopia, squint, Nystagmus, strabismus.	<b>HN-PHY-1</b> Examination of oculomotor, Trochlear and Abducent nerve	Interactive Practical	BCQs, SAQs, OSPE

## THEME: 2 FACIAL INJURIES AND THE BELL'S PALSY

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
12	Describe the boundaries and contents of temporal fossa. Describe the type, formation, neurovascular supply and movements of Temporomandibular joint. Clinically correlate disorders of the TM joint. Describe the muscles of mastication.	<b>HN-ANA-G-9</b> Temporal Region & Temporo-mandibular Joint and muscles of mastication	Interactive Lecture	BCQs, SAQs, OSPE, Viva
13	Describe boundaries and contents of Pterygopalatine & Infratemporal fossae. Describe the muscles of mastication.	<b>HN-ANA-G-10</b> Pterygopalatine & Infratemporal fossae.	Interactive Lecture	BCQs, SAQs, OSPE, Viva

14	Describe Parts of mandible Explain general and special features of each part. Describe Blood and nerve supply of mandible Interpret Applied anatomy of mandible. Explain general and special features of Hyoid bone.	<b><u>HN-ANA-G-11</u></b> Mandible & Hyoid bone.	Demonstration	BCQs, SAQs, OSPE, Viva
15	Describe the boundaries of face Enumerate the muscles and innervations of face Describe the disorders and applied of face	<b><u>HN-ANA-G-12</u></b> Muscles of the facial expression	Interactive Lecture	BCQs, SAQs, OSPE, Viva
16	Describe the cutaneous supply of the head and neck regions.	<b><u>HN-ANA-G-13</u></b> Cutaneous supply of the head & neck region	Interactive Lecture	BCQs, SAQs, OSPE, Viva
17	Describe arterial supply of head and neck Major venous drainage to sinuses, Head and neck major veins.	<b><u>HN-ANA-G-14</u></b> Arteries & Veins of the Head & Neck.	Interactive Lecture	BCQs, SAQs, OSPE, Viva
18	Describe the Developmental stages of Face Explain the congenital Anomalies of face Describe the development of the nasal cavity Describe the development of the paranasal sinuses. Explain the congenital Anomalies of face	<b><u>HN-ANA-E-3</u></b> Development of Face and nose	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>PHYSIOLOGY</b>				
19	To examine muscle of facial expression To define and classify Bell's facial palsy Correlate between 5th and 6th nerve Interpret the problems of trigeminal nerve injury	<b><u>HN-PHY-P-2</u></b> Examination of facial and trigeminal nerve.	Interactive Practical	BCQs, SAQs

### THEME :3 DISORDERS OF THE SALIVARY GLANDS AND NECK LESIONS

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>GROSS ANATOMY</b>				
20	Explain the parotid region. Describe the anatomy parotid gland. Define what is otic ganglion. Interpret Applied anatomy of parotid gland	<b><u>HN-ANA-G-15</u></b> Parotid region	Interactive Lecture	BCQs, SAQs, OSPE, Viva
21	Explain the submandibular region. List the Suprahyoid muscles. Describe the submandibular gland. Describe the sublingual gland. Define what is submandibular ganglion	<b><u>HN-ANA-G-16</u></b> Submandibular region	Interactive Lecture	BCQs, SAQs, OSPE, Viva
22	Describe the deep cervical fascia Explain the four parts of deep cervical fascia and the structures it encloses: the investing layer, pretrachial fascia, prevertebral fascia & the carotid sheath. Define platysma muscle.	<b><u>HN-ANA-G-17</u></b> Deep Cervical Fascia & Platysma	Interactive Lecture	BCQs, SAQs, OSPE, Viva

23	Discuss the boundaries and divisions of the anterior triangle of neck List the subdivision of anterior triangle of neck. Describe the boundaries and contents of sub divisions of anterior triangle.	<b><u>HN-ANA-G-18</u></b> Anterior triangle of neck	Interactive Lecture	BCQs, SAQs, OSPE, Viva
24	Describe the division and boundaries of posterior triangle of neck List the contents of posterior triangle of neck Discuss the clinical conditions associated with posterior triangle of neck	<b><u>HN-ANA-G-19</u></b> Posterior triangle of neck	Interactive Lecture	BCQs, SAQs, OSPE, Viva
25	Discuss the formation and branches of cervical plexus Discuss the origin, course, branches and functions of cranial nerve XI.	<b><u>HN-ANA-G-20</u></b> cervical plexus & cranial nerve XI.	Interactive Lecture	BCQs, SAQs, OSPE, Viva
26	Name the Salivary glands and their location. Describe histology of parotid gland Describe histology of submandibular gland Describe histology of sublingual gland.	<b><u>HN-ANA-H-1</u></b> Salivary Glands	Interactive Practical	BCQs, SAQs, OSPE, Viva

#### PATHOLOGY

27	To describe the etiology, pathogenesis and major subtypes of Inflammatory, non- neoplastic lesions of salivary glands	<b><u>HN-Path-1</u></b> Inflammatory and non- neoplastic lesions of salivary glands	Demonstration	BCQs, SEQs, Viva
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#### PHYSIOLOGY

28	To perform and interpret the function of nerves The gag reflex. To observe shrugging of shoulders with and without resistance Check movements of tongue in all directions Test the sensation of taste To assess the deviation of the tongue when extended toward the weak side	<b><u>HN-PHY-3</u></b> Examination of Glossopharyngeal Vagus , Accessory and Hypoglossal nerves.	Interactive Practical	BCQs, SEQs
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#### THEME: 4 WALDEYER'S RING, TONSILLITIS AND ORAL CANCERS

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>GROSS ANATOMY</b>				
29	Describe the anatomy of external nose. Define the boundaries of nasal cavity. Describe the lateral wall of nose. Identify & Describe Arterial & Venous supply of nose and nasal cavity. Describe Nerve supply of nose and nasal cavity	<b><u>HN-ANA-G-21</u></b> External Nose & Nasal Cavity	Demonstration	BCQs, SAQs, OSPE, Viva

30	Define & list names of paranasal sinuses Describe functions of paranasal sinuses. Identify Radiographic Protocols for sinuses Explain diseases of sinuses.	<b>HN-ANA-G-22</b> Para-nasal Sinuses	Demonstration	BCQs, SAQs, OSPE, Viva
31	Define the boundaries of oral cavity (the roof, lateral walls and floor of oral cavity). Describe the hard & soft palate. Describe the vasculature and innervation of the oral cavity & palate. Define the muscles of the soft palate.	<b>HN-ANA-G-23</b> Oral Cavity Hard and soft palate	Interactive Lecture	BCQs, SAQs, OSPE, Viva
32	Describe what is tongue and Papilla. Enumerate the Extrinsic and Intrinsic muscles of the tongue Define the sensory & motor nerve supply of the tongue.	<b>HN-ANA-G-24</b> The Tongue	Interactive Lecture	BCQs, SAQs, OSPE, Viva
33	Explain the structure, functions of various parts of pharynx & their blood supply & innervation. Interpret related applied anatomy.	<b>HN-ANA-G-25</b> Pharynx	Interactive Lecture	BCQs, SAQs, OSPE, Viva
34	Explain the structure , cartilages and functions of the various parts of larynx.	<b>HN-ANA-G-26</b> Larynx-1	Demonstration	BCQs, SAQs, OSPE, Viva
35	Describe the muscles, blood supply & innervation of the larynx. Interpret related applied anatomy.	<b>HN-ANA-G-27</b> Larynx-2	Demonstration	BCQs, SAQs, OSPE, Viva
36	Identify the microscopic features of the nose and paranasal sinuses. Discuss the respiratory epithelium. Explain the Olfactory epithelium.	<b>NS-ANA-H-2</b> Histology of the Nasal cavity	Interactive Practical	BCQs, SAQs, OSPE, Viva
37	Describe the different parts of oral cavity. Explain the histology of cheek and lip. Describe microscopic features of tongue.	<b>NS-ANA-H-3</b> Histology of Oral cavity	Interactive Practical	BCQs, SAQs, OSPE, Viva
<b>PHYSIOLOGY</b>				
38	Primary tastes & taste receptors Taste transduction, Taste pathway Olfactory mucosa, Smell pathway Role of smell in memory & sex	<b>HN-PHY-4</b> Chemical senses Taste & smell	Demonstration	BCQs, SAQs, OSPE, Viva
39	To examine and interpret the sense of taste and smell in a subject	<b>HN-PHY-5</b> Examination of s taste & smell sensations	Interactive Practical	BCQs, SAQs, OSPE, Viva
<b>EAR-NOSE-THROAT (ENT)</b>				
40	Discuss clinical significance of tonsils	<b>HN-ENT-1</b> Tonsillitis	Interactive Lecture	BCQs, SAQs, OSPE, Viva
41	Correlate causes with clinical presentation of epistaxis	<b>HN-ENT-2</b> Epistaxis	Interactive Lecture	BCQs, SAQs, OSPE, Viva

**THEME: 5 VISUAL FIELD DEFECTS, GLAUCOMA, ROLE OF VITAMIN A**

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
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<b>GROSS ANATOMY</b>				
<b>42</b>	Describe the boundaries of the orbit Define the openings of the orbital cavity and their contents Define the orbital fascia	<b><u>HN-ANA-G-28</u></b> The Orbit (boundaries & openings)	Demonstration	BCQs, SAQs, OSPE, Viva
<b>43</b>	Explain the Extrinsic muscles and their innervations Explain the structures supplied by nerves of orbital cavity. Describe the blood vessels of orbit.	<b><u>HN-ANA-G-29</u></b> Contents of the orbital cavity (Extraocular muscles, nerves & vessels )	Demonstration	BCQs, SAQs, OSPE, Viva
<b>44</b>	Describe the palpebral fissure Explain the different layers of the eyelid and its muscles. Enumerate the blood supply and innervations of eyelids. Illustrate lacrimal apparatus ciliary ganglion and their disorders. Interpret related applied anatomy.	<b><u>HN-ANA-G-30</u></b> Eyelids & lacrimal Apparatus & Ciliary Ganglion	Demonstration	BCQs, SAQs, OSPE, Viva
<b>45</b>	Enlist the coats of Eyeball. Describe the Cornea & Sclera Describe the Choroid, Ciliary body & Iris Describe the Retina	<b><u>HN-ANA-G-31</u></b> Structure of the eye Eyeball-1 (Coats)	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>46</b>	Describe the Aqueous humor, Vitreous body & lens Interpret related applied anatomy.	<b><u>HN-ANA-G-32</u></b> Eyeball-2 (Contents)	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>47</b>	Describe the steps of development of human eye. Explain the derivatives of different embryonic primitive eye layers. Describe the development of various layers of eye individually, along with optic nerve.	<b><u>HN-ANA-E-4</u></b> Development of Eye	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>48</b>	Describe the histology of Eyelids , Conjunctiva & Lacrimal Apparatus.	<b><u>HN-ANA-H-4</u></b> Histology of Eyelids, Conjunctiva, Lacrimal Apparatus	Interactive Practical	BCQs, SAQs, OSPE, Viva
<b>PHYSIOLOGY</b>				
<b>49</b>	Describe the physiological anatomy of eye, Its layers, Its chambers & Its systems Describe the Lens and its attachment Describe the Formation, composition, circulation & functions of aqueous humor	<b><u>HN-PHY-6</u></b> Physiological Anatomy Aqueous humor	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>50</b>	Describe the physical principles of optics Describe accommodation reflex & its control Describe the refracting surfaces of eye Describe the errors of refraction and their correction	<b><u>HN-PHY-7</u></b> Optics of vision	Interactive Lecture	BCQs, SAQs, OSPE, Viva



51	Describe the functional anatomy of retina Describe the special features of photoreceptors i.e. rods & Cones Describe the neuronal circuits within retina Discuss Importance of Pigmented Layer of the Retina (albinos) Describe Blind spot & Fovea & their importance	<b>HN-PHY-8</b> Retina	Demonstration	BCQs, SAQs, OSPE, Viva
52	Describe the basic mechanism of photo-transduction Describe the structure of rhodopsin and its bleaching by light Describe the role of Bipolar and ganglion cells in photo-transduction Describe the steps involved in photo-transduction	<b>HN-PHY-9</b> Photo-transduction	Interactive Lecture	BCQs, SAQs, OSPE, Viva
53	Name the three primary color Describe Young - Helmholtz - theory of color vision. Describe color vision pathway Describe color blindness and tests to detect it Describe the mechanism of dark adaptation Describe the mechanism of light adaptation Describe night blindness & its cause	<b>HN-PHY-10</b> Color vision Duplicity of vision & adaptation	Demonstration	BCQs, SAQs, OSPE, Viva
54	Describe visual pathway & its order neurons Describe the lesions of visual pathway Describe functions of superior colliculi and lateral geniculate body. Describe visual cortex Describe structure & function of lacrimal gland	<b>HN-PHY-11</b> Visual pathway & its lesions Lacrimal apparatus	Interactive Lecture	BCQs, SAQs, OSPE, Viva
55	To demonstrate visual acuity of eye using Snelling eye chart in a subject provided To interpret the visual acuity recording To examine the color vision of a subject using ishiara eye chart. To perform the technique of plotting visual field. Read and interpret a given perimeter chart. Examine pupillary reflexes	<b>HN-PHY-12</b> examination of the Optic nerve	Interactive Practical	BCQs, SAQs, OSPE, Viva

#### BIOCHEMISTRY

56	Sources, RDA, Active forms, Absorption, Functions	<b>HN-BIO-1</b> Vitamin A (I)	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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57	Deficiency states & Hypervitaminosis. Visual Cycle	<b>HN-BIO-2</b> Vitamin A (II)	Interactive Lecture	BCQs, SAQs, OSPE, Viva
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#### OPHTHALMOLOGY

58	Define & Describe Refractive Errors, Emmetropia, Hypermetropia, Astigmatism	<b>HD-OPH-1</b> Errors of refraction, presbyopia and their correction	Interactive Lecture	BCQs, SAQs, OSPE, Viv
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59	Describe Distribution of cranial nerves Explain Functional classification of cranial nerves, their pathways Explain Clinical features related to the disorders	<b>HD-OPH-2</b> Cranial nerve palsy affecting the eye and pupillary disorder	Interactive Lecture	BCQs, SAQs, OSPE, Viv
60	Blockage of drainage (Glaucoma) Discuss the Anatomy of angle, production and drainage of Aqueous	<b>HD-OPH-3</b> Glaucoma & its treatment	Interactive Lecture	BCQs, SAQs, OSPE, Viv
61	Define cataract Describe the types of cataract Discuss its management	<b>HN-OPH-4</b> Cataract & its treatment	Interactive Lecture	BCQs, SAQs, OSPE, Viv
<b>PHARMACOLOGY</b>				
62	To describe principles of pharmacological treatment. To describe the adverse effects of drug used To describe the mechanism of action of drug used	<b>HN- PHARMA- 1</b> Pharmacological treatment of glaucoma	Interactive Lecture	BCQs, SAQs, OSPE, Viv
63	To observe effect of Atropine on frogs eye	<b>HN- PHARMA-2</b> Effects of Atropine	Interactive Practical	BCQs, SAQs, OSPE, Viv
64	To observe effect of Pilocarpine on frogs eye	<b>HN- PHARMA-3</b> Effects of Pilocarpine	Interactive Practical	BCQs, SAQs, OSPE, Viv

### THEME 6: DEAFNESS, VERTIGO, OTTITIS MEDIA

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>GROSS ANATOMY</b>				
65	Describe Parts of ear. Explain gross features of middle ear. Describe the applied anatomy of middle ear.	<b>HN-ANA-G-33</b> External Ear & Middle Ear	Demonstration	BCQs, SAQs, OSPE, Viva
66	Explain Organ of hearing and balance. Interpret applied anatomy of inner ear.	<b>HN-ANA-G-34</b> Inner Ear (cochlea & semicircular canals)	Demonstration	BCQs, SAQs, OSPE, Viva
67	Explain development of inner ear. Describe development of middle ear. Elaborate development of external ear	<b>NS-ANA-E-5</b> Development of Ear	Interactive Lecture	BCQs, SAQs, OSPE, Viva
68	Describe the histology of the different parts of the Ear	<b>HN-ANA-H-5</b> Histology of the Ear	Practical	BCQs, SAQs, OSPE, Viva
<b>PHYSIOLOGY</b>				
69	Define sound and describe its characteristics Describe tympanic membrane as resonator Name ossicles of middle ear and their lever system Define impedance matching & describe attenuation reflex Define Masking	<b>HN-PHY-13</b> External & middle ear	Interactive Lecture	BCQs, SAQs, OSPE, Viva

70	Physiologic anatomy of cochlea & organ of Corti Describe passage of sound waves to inner ear Describe Sound transduction Describe Pitch & loudness discrimination Describe Auditory pathway	<b>HN-PHY-14</b> Inner ear	Demonstration	BCQs, SAQs, OSPE, Viva
71	Head movements Functional anatomy of vestibular apparatus To determine the role of utricle & saccule in static equilibrium. To determine the role of semicircular Ducts in Angular Acceleration.	<b>HN-PHY-15</b> Vestibular Apparatus	Interactive Lecture	BCQs, SAQs, OSPE, Viva
72	To perform and examine the Rinne's & weber's test by using a tuning fork Identify conductive and sensorineural deafness based on the result and interpretation of tuning fork tests.	<b>HN-PHY-16</b> Examination of the Vestibulocochlear nerve	Interactive Practical	BCQs, SAQs, OSPE, Viva
<b>EAR-NOSE-THROAT (ENT)</b>				
73	describe the causes of deafness describe the types of deafness discuss the management of deafness	<b>HN-ENT-3</b> Deafness	Interactive Lecture	BCQs, SAQs, OSPE, Viva
74	Define vertigo Describe the pathophysiology of Meniere 's disease	<b>HN-ENT-4</b> Vertigo & Meniere's disease	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>RADIOLOGY</b>				
73	Interpretate the normal features of Head X-ray (skull bones, orbits, nasal concha, sinuses, teeth and mandible)	<b>HN-RADIO-1</b> Head Radiograph	Interactive Lecture	BCQs, OSPE, Viva

### TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>PROFESSIONALISM AND BEHAVIORAL SCIENCES</b>						
<b>Dealing with patients</b>	Culture, Life style, and Belief System in the society	Serve the patient as an individual, considering lifestyle, beliefs and support system	Lecture	Head and neck and Special Senses	2	MCQ
<b>Power Dynamics</b>	Power dynamics, bullying, harassment, its influences on interrelationship	Avoids misuse of power for personal gains.	Lecture Group Discussion/ Role Play.	Head and neck and Special Senses	1	MCQ

### CLINICAL SCIENCES SUBJECTS

#### HEAD AND NECK AND SPECIAL SENSES MODULE

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>ISLAMIC STUDY</b> Dealing with human tissues, cadavers and animals in medical practice, medical risks and Islamic concepts.	Describe the importance of respecting human body, organs and tissues in light of the Islamic teachings and medical ethics. Recognize the health risks in handling cadaveric / body tissues	1	Lecture
		Demonstrate respect of human body, organs and tissues while studying medical sciences and managing patients.	1	Lecture
2.	<b>PAKISTAN STUDY</b>	Innovations in improving health care delivery – private public partnership	1	Lecture
		Prevention of diseases - strategies – medical, surgical, trauma, obstetric	1	Lecture
3.	<b>ANAESTHESIA</b> Patient Preparation	Preparation of Patient for general anaesthesia	1	Lecture
		Patient fitness and necessary lab investigations prior to anaesthesia	1	Lecture
		Management of airway during general anaesthesia	1	Lecture
4.	<b>CRITICAL CARE</b> Nutrition	Nutritional Therapy in critically ill	1	Lecture
		Parenteral and enteral nutrition in ICU	1	Lecture
5.	<b>ORTHOPAEDICS &amp; TRAUMA</b>	Debridement and soft tissue handling	1	Lecture
		Intra articular Injections	2	Skill session
		Principles of traction Application	2	Skill session
		POP application, principles and techniques	2	Skill session
6.	<b>FAMILY MEDICINE</b> Non Communicable Disease	Hypertension	1	Lecture
		Diabetes Mellitus	1	Lecture
		Dyslipidaemia	1	Lecture

#### TEACHING HOURS ALLOCATION

S. No	Subject	Hours	Practical Hours
1	Anatomy	53	10
2	Physiology	18	12
3	ENT	19	-
4	Ophthalmology	4	-
5	Biochemistry	2	-
6	Pharmacology	1	-
7	Pathology	1	-
8	CBL 3 (Anatomy)*	6	-
9	CBL 6 (Physiology)*	12	-

10	CBL 1 (Biochemistry)*	2	-
11	Radiology	1	-
12	Islamic Study	2	-
13	Pakistan Study	2	-
14	Anesthesia	3	-
15	Critical Care	2	-
16	Orthopaedics and Trauma	7	-
17	Family Medicine	3	-
<b>Total hours</b>		<b>138</b>	<b>22</b>

\*Minimum 2 hours are allotted for each CBL session per Module

S. No	Tagged Subject	Teaching Hours
1	Professionalism and Behavioral Sciences	3
<b>Total hours</b>		<b>3</b>

### ASSESSMENT BLUEPRINT

#### HEAD & NECK AND SPECIAL SENSES MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

**GIT AND LIVER-I MODULE**  
**SECOND PROFESSIONAL MBBS**

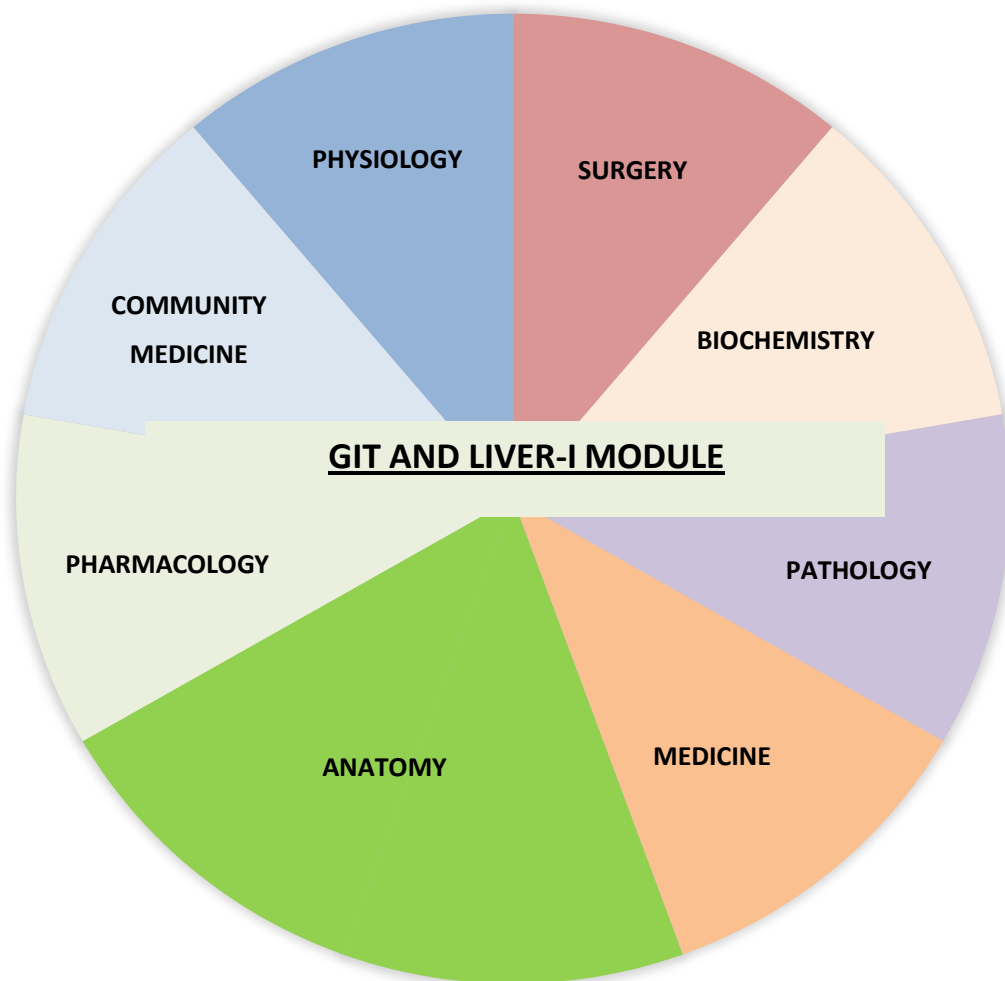


## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Head & neck and special senses, Nervous System-I, Git and Liver-I, Endocrinology-I, Renal & Excretory-I and Reproductive System-I modules which link basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF GIT AND LIVER-I MODULE



## MODULE OVERVIEW

### GIT AND LIVER-I MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Second professional
<b>Duration</b>	7 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

### GIT AND LIVER-I MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Dr. Saqib Baloch	Anatomy	Assistant Professor
2.	Dr. Shahab Hanif	Anatomy	Assistant Professor
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### Module objectives:

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

#### Achievement of objectives:

- Focuses on information pertaining to examination policy, rules and regulations.

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Skills session
- Practicals
- Self-Directed Study
- **INTERACTIVE LECTURES:**  
Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they



have learned throughout the session and are asked questions, students actively participate in the learning process.

- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to Anatomy, Physiology and Biochemistry have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

The goal of this module is to give students a thorough understanding of the GIT and biliary system, two of the most important bodily systems, and to assist them in developing the skills they'll need to use that knowledge to solve health-related issues that the general public faces. In order to identify and cure a disease, this module attempts to give students the opportunity to comprehend the fundamentals of integrating their knowledge of gross anatomy, histology, and embryology connected to the GIT and liver with physiology, biochemistry, pathology, and pharmacology of the GI system. The basic anatomy, physiology, and biochemistry of the liver and viscera of the GIT will be taught to the students. They will also explore the many secretions of the GIT and how they function in the processes of digestion and absorption. Additionally, they will gain a rudimentary understanding of the pathophysiology of common liver and gastrointestinal disorders in our nation. In order to assist students in developing their clinical approach to comprehend and solve the clinical problem by connecting their foundational knowledge of anatomy, physiology, biochemistry, and pathology with findings of a clinical case, real-life scenarios have been added to the module and will be discussed in small groups.

### RATIONALE

GIT disorders are widespread across our nation. Reducing morbidity and mortality requires early diagnosis and treatment of the illness. To accomplish the purpose, a basic understanding of the GIT's composition and operation is required. This module offers a comprehensive comprehension of anatomy, physiology, biochemistry, pharmacology, and pathology pertaining to the digestive and biliary systems, as well as specific and therapeutically applicable material.

## LEARNING OBJECTIVES

### Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Explain how the foregut, midgut, and hindgut development.

2. Talk about the GI abnormalities.
3. Describe the microscopic and gross anatomy of the different GIT parts.
4. Describe the biliary system's and the liver's microscopic and gross characteristics.
5. Describe the GIT's physiology.
6. Describe the digestive juices' biochemistry.
7. Explain the biochemistry involved in the digestion and absorption of lipids, proteins, and carbohydrates
8. Recognize and describe the liver's metabolic mechanism.
9. Describe the abnormal features found in the pathophysiology of the GIT.
10. List the gastrointestinal tract's pathologies.
11. Determine the function of pharmaceuticals used to treat GIT disorders such diarrhoea and vomiting.
12. Analyze radiological findings in light of the GIT.

### **Skills / Psychomotor Domain:**

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

1. Observation and Assistance
2. Performing the skill under supervision
3. Performing the skill independently
4. Link the structure and functional abnormalities of the gastrointestinal tract based on the clinical history and signs and symptoms)
5. Obtain a comprehensive history of patient with gastrointestinal and hepatobiliary disorders.
6. Know the basic steps of examination of GIT system
7. Perform superficial examination of the abdomen and abdominal viscera

### **Attitude / Affective Domain:**

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

- A. Comply with standard laboratory procedures
- B. Engage in professional classroom and practical work.
- C. Work as a team to effectively communicate with instructors, staff, and peers.
- D. Act with professionalism and moral principles when interacting with teachers, personnel, cadavers, and patients.
- E. Work well as a team to communicate with instructors and peers.
- F. Show that you have the capacity to evaluate your performance.

### **Outcomes of GIT and Liver-I Module**

1. Knowledgeable
2. Skillful
3. Community Health Promoter
4. Problem-solver
5. Professional
6. Researcher
7. Leader and Role Model

## HEMES FOR GIT AND LIVER MODULE

SNO	Theme	Duration
1	The anterior abdominal wall and the Hernias	2 week
2	Upper Gastrointestinal tract disorders	1 week
3	Hepatic and Portal system disorders	2 week
4	Lower Gastrointestinal tract disorders	1 week
5	Vascular disorders	1 week

**SPECIFIC LEARNING OBJECTIVES THEME WISE**

**THEME 1: THE ANTERIOR ABDOMINAL WALL AND THE HERNIAS**

<b>GASRO-INTESTINAL TRACT-LIVER MODULE</b>				
<b>GROSS ANATOMY</b>				
<b>S. NO</b>	<b>LEARNING OBJECTIVES</b>	<b>TOPIC</b>	<b>TEACHING STRATEGY</b>	<b>ASSESSMENT</b>
<b>01</b>	Describe divisions & components of GIT Describe the planes and nine abdominal regions. Identify four quadrants of abdomen. Describe the arrangement of viscera in nine abdominal regions.	<b><u>GIL-ANA-G1</u></b> An Overview of GIT & Surface anatomy of Abdomen	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>02</b>	Discuss the attachment of the fasciae and muscles of antero-lateral abdominal wall in relation to its clinical importance. Explain formation of rectus sheath with its contents	<b><u>GIL-ANA-G2</u></b> Anterior abdominal wall- 1	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>03</b>	Describe nerve supply, blood supply and lymphatic drainage of antero-lateral abdominal wall Identify and palpate the bony landmarks of the abdomen like anterior superior iliac spine, pubic tubercle. Identify surface marking of inguinal ligament, mid inguinal point, McBurney's point and lateral border of rectus abdominis.	<b><u>GIL-ANA-G3</u></b> Anterior abdominal wall- 2	Demonstration	BCQs, SAQs, OSPE, Viva
<b>04</b>	Describe the inguinal canal under following heads: 1. Location and Dimension 2. Walls of inguinal canal 3. Inguinal rings 4. functions and mechanics of the inguinal canal.	<b><u>GIL-ANA-G4</u></b> Inguinal canal	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>05</b>	Explain coverings and contents of spermatic cord Contents of inguinal canal in male & female Define hernia and describe direct & indirect inguinal hernia Differentiate between inguinal and femoral hernia	<b><u>GIL-ANA-G5</u></b> Spermatic cord	Interactive Lecture	BCQs, SAQs, OSPE, Viva
	Explain the development of the inguinal canal and briefly give the overview of the Scrotum, testis and epididymides. Briefly define the labia majora.	<b><u>GIL-ANA-G6</u></b> Development of inguinal canal and Overview of the male and female genitalia	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>06</b>	Define peritoneum and peritoneal cavity. Discuss intraperitoneal and retroperitoneal relationships. Explain peritoneal ligaments. Define omenta and mesenteries.	<b><u>GIL-ANA-G7</u></b> Peritoneum-1: General arrangement	Interactive Lecture	BCQs, SAQs, OSPE, Viva

07	Discuss in detail the peritoneal pouches, recesses, spaces and gutters. Describe the boundaries of greater and lesser sac Define the nerve supply of the peritoneum. Discuss the functions of the peritoneum. Discuss the clinical conditions related with peritoneum.	<b><u>GIL-ANA-G8</u></b> The peritoneum-2: Pouches, Recesses, Spaces & Gutters	Demonstration	BCQs, SAQs, OSPE, Viva
8	Explain the process of development of GIT and divisions of primitive gut.	<b><u>GIL-ANA-E1</u></b> Overview of the GIT development	Interactive Lecture	BCQs, SAQs, OSPE, Viva
9	Discuss general plan of histology of the wall of alimentary canal Identify histological features of different layers of GIT. Give an overview of different parts of esophagus Identify the microscopic features of thoracic and abdominal parts of esophagus.	<b><u>GIL-ANA-H1</u></b> General plan of GIT histology Histology of Esophagus	Interactive Practical	BCQ's, SAQ's, OSPE
<b>PHYSIOLOGY</b>				
10	Mention primary/basic functions of GIT Describe physiological anatomy of gastrointestinal wall Describe electrical activity of gastrointestinal smooth muscle	<b><u>GIT-1-PHY-1</u></b> Overview of GIT physiology	Interactive Lecture	BCQs, SAQs, OSPE, Viva
11	Describe enteric nervous system and its two main plexuses Mention the role of enteric nervous system in control of GIT function Mention the role of autonomic nervous system in control of GIT function Define three types of gastrointestinal reflexes that are essential to gastrointestinal control	<b><u>GIT-1-PHY-2</u></b> Neural control of GIT function	Demonstration	BCQs, SAQs, OSPE, Viva
<b>BIOCHEMISTRY</b>				
12	composition, functions and regulation of saliva and gastric juice	<b><u>GIT-1-BIO-1</u></b> saliva and gastric juice	Interactive Lecture	BCQs, SAQs, OSPE,
13	composition, functions and regulation of pancreatic, bile and intestinal juice	<b><u>GIT-1-BIO-2</u></b> pancreatic juice, bile juice and intestinal juice	Interactive Lecture	BCQs, SAQs, OSPE, Viva
14	sites and enzymes involved in digestion, classification and functions of glucose transporters, factors affecting rate of absorption, lactose intolerance	<b><u>GIT-1-BIO-3</u></b> digestion and absorption of carbohydrates	Interactive Lecture	BCQs, SAQs, OSPE, Viva
15	describe the process and enzymes involved in digestion and absorption of proteins. Explain hartnup and maple serup disease.	<b><u>GIT-1-BIO-4</u></b> Digestion & Absorption of proteins	Interactive Lecture	BCQs, SAQs, OSPE, Viva

16	describe the process of digestion and absorption. Explain steatorrhea	<b><u>GIT-1-BIO-5</u></b> Digestion & Absorption of lipids and fatty acids	Interactive Lecture	BCQs, SAQs, OSPE, Viva
17	Interpret the normal levels of HCL	<b><u>GIT-1-BIO-P1</u></b> Interpretation of HCL	Interactive practical	BCQs, SAQs, OSPE,
<b>PATHOLOGY</b>				
18	Define atresia, fistulae, duplications diaphragmatic hernia, omphalocele, gastroschisis ectopia, meckel diverticulum, pyloric stenosis and Hirsch sprung disease	<b><u>GIL-1-Path-1</u></b> Congenital Abnormalities of GIT	Interactive Lecture	BCQ'S, SAQ's, OSPE, Viva

## THEME 2: UPPER GASTROINTESTINAL DISORDERS

### GASRO-INTESTINAL TRACT-LIVER MODULE

#### GROSS ANATOMY

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
18	Explain gross features of esophagus in relation to its location and dimensions. Mention its important relations especially in posterior mediastinum. Describe its blood supply, nerve supply & lymphatic drainage. Discuss its different areas of compression and their clinical importance	<b><u>GIL-ANA-G9</u></b> Oesophagus	Interactive Lecture	BCQs, SAQs, OSPE, Viva
19	Mention different parts of stomach. Describe gross anatomical features of stomach including interior of stomach. Give blood, nerve supply and lymphatic drainage. Identify the structures forming stomach bed. Explain peritoneal covering of the stomach and mention different peritoneal folds related to this organ along with contents.	<b><u>GIL-ANA-G10</u></b> Stomach	Demonstration	BCQs, SAQs, OSPE, Viva
20	Mention different parts of small intestine. Describe different parts of duodenum along with relations of each part. Mention the vessels and nerves supplying the duodenum.	<b><u>GIL-ANA-G11</u></b> Small intestine (duodenum)	Demonstration	BCQs, SAQs, OSPE, Viva
21	Explain basic anatomy of jejunum and ileum. Distinguish between jejunum and ileum regarding their anatomical features. Explain the terms mesentry, duodenal flexure and Meckel's diverticulum.	<b><u>GIL-ANA-G12</u></b> Small intestine (jejunum and ileum)	Interactive Lecture	BCQs, SAQs, OSPE, Viva

22	<p>Explain the process of development of GIT and divisions of primitive gut, List the derivatives of foregut and Describe the development of:</p> <p>I. Esophagus li. Stomach lii. Lesser &amp; greater sac</p> <p>Discuss the following congenital anomalies: I. Esophageal atresia/stenosis li. Congenital hypertrophic pyloric stenosis lii. Duodenal atresia/ stenosis</p>	<b><u>GIL-ANA-E2</u></b> Foregut	Interactive Lecture	BCQs, SAQs, OSPE, Viva
23	<p>Explain the development of the duodenum. Describe development of liver, biliary apparatus and gall bladder.</p> <p>Discus extrahepatic biliary atresia</p>	<b><u>GIL-ANA-E3</u></b> Development of the Duodenum, Liver and gall bladder	Interactive Lecture	BCQs, SAQs, OSPE, Viva
24	<p>Identify various layers of the wall of stomach Describe histology of gastric mucosa including different glands and cell types in different regions of stomach.</p> <p>Identify different cells of mucosa under microscope and mention their functions.</p>	<b><u>GIL-ANA-H2</u></b> Histology of Stomach	Interactive Practical	BCQ's, SAQ's, OSPE
25	<p>Identify the parts of small intestine</p> <p>Identify microscopically different layers of small intestine</p> <p>Identify modifications of the luminal surface Describe the glands and cells present in the small intestine</p> <p>Discuss special microscopic features of duodenum, jejunum and ileum</p>	<b><u>GIL-ANA-H3</u></b> Histology of Small intestine	Interactive Practical	BCQ's, SAQ's, OSPE
<b>PHYSIOLOGY</b>				
26	<p>Mention major salivary glands</p> <p>Describe the composition and function of saliva Describe the role of saliva in oral hygiene Explain regulation/control of salivary secretion</p>	<b><u>GIT-1-PHY-3</u></b> Saliva; its composition, function and regulation	Interactive Lecture	BCQs, SAQs, OSPE, Viva
27	<p>Define mastication/chewing and mention its importance</p> <p>Define swallowing/deglutition and name its stages Describe mechanism of each Stage</p> <p>Mention function of lower esophageal sphincter</p>	<b><u>GIT-1-PHY-4</u></b> Mastication and Deglutition	Interactive Lecture	BCQs, SAQs, OSPE, Viva
28	<p>Describe physiological anatomy of gastric glands Describe composition of gastric juice</p> <p>Mention functions of important constituents of gastric juice</p> <p>Describe regulation/control of gastric juice secretion</p>	<b><u>GIT-1-PHY-5</u></b> Gastric juice; its composition, function and regulation	Demonstration	BCQs, SAQs, OSPE, Viva

29	Describe the mechanism of HCl secretion by parietal cells of oxyntic/gastric glands Mention function of gastric NCI Describe regulation of gastric acid secretion	<b><u>GIT-1-PHY-6</u></b> Mechanism of gastric acid (NCI) secretion and its control	Interactive Lecture	BCQs, SAQs, OSPE, Viva
30	Describe the motor functions of stomach Explain how the gastric emptying is regulated	<b><u>GIT-1-PHY-7</u></b> Motor functions of stomach	Interactive Lecture	BCQs, SAQs, OSPE, Viva
31	Define the indications , contraindications and the complications of the nasogastric tube	<b><u>GIT-1-PHY-P1</u></b> Nasogastric Tube-1	Interactive Practical	BCQs, SAQs, OSPE,

#### COMMUNITY MEDICINE

32	Determine the common gastrointestinal tract issues of public health importance. Determine the magnitude of diarrheal diseases worldwide Understand the epidemiology and potential risk factors of cholera in Pakistan. Elucidate the strategies in Pakistan for prevention and control of diarrheal diseases.	<b><u>GIL-CM-1</u></b> Gastrointestinal tract Issues and Diarrheal diseases (Cholera)	Interactive Lecture	BCQs
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#### RADIOLOGY

33	Interpretate the normal X-ray of Upper Gastrointestinal viscera (Esophagus, Stomach, Liver) Identify the esophageal shadow, fundus gas shadow, Right and left dome of diaphragm	<b><u>GIL-RADIO-1</u></b> Upper GI Xrays	Interactive Lecture	BCQs
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### THEME 3: HEPATIC & PORTAL SYSTEM DISORDERS

#### GASRO-INTESTINAL TRACT-LIVER MODULE

#### GROSS ANATOMY

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
33	Identify location of liver Describe the surfaces and different peritoneal relations Discuss formation of anatomical and functional (physiological) lobes of liver. Identify porta hepatis and its contents. Mention blood vessels especially describing blood circulation through the liver Discuss lymphatic drainage and nerve supply.	<b><u>GIL-ANA-G13</u></b> Liver	Demonstration	BCQs, SAQs, OSPE, Viva
34	Explain the hepatic portal circulation Discuss basic anatomy of portal vein. Mention its tributaries Discuss the sites of porto-systemic anastomosis with clinical importance.	<b><u>GIL-ANA-G14</u></b> Hepatic portal system	Demonstration	BCQs, SAQs, OSPE, Viva



<b>35</b>	Describe location and parts of gall bladder Mention its important relations Name blood and lymph vessels including nerves supplying this organ. Describe clinical correlates of biliary system.	<b><u>GIL-ANA-G15</u></b> Gall bladder	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>36</b>	List different components of intra & extra- hepatic biliary system Describe formation and termination of common bile duct. Mention its important relations Name blood vessels supplying different parts of bile duct including lymphatic drainage.	<b><u>GIL-ANA-G16</u></b> Duct system of liver (hepatic biliary system)	Demonstration	BCQs, SAQs, OSPE, Viva
<b>37</b>	Discuss location and gross features of pancreas Mention its peritoneal relations Describe the arterial supply, venous drainage and nerve supply of pancreas. Discuss the clinical correlates	<b><u>GIL-ANA-G17</u></b> Pancreas	Demonstration	BCQs, SAQs, OSPE, Viva
<b>38</b>	Explain location, surfaces and borders of spleen. Mention its important relations with surrounding organs Discuss peritoneal folds connecting spleen with other organs Mention the vessels and nerves supplying spleen	<b><u>GIL-ANA-G18</u></b> Spleen	Demonstration	BCQs, SAQs, OSPE, Viva
<b>39</b>	Describe the development of pancreas Describe the following anomalies of pancreas: I. Annular pancreas II. Accessory pancreatic tissue	<b><u>GIL-ANA-E4</u></b> Development of the Pancreas	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>40</b>	List the derivatives of midgut Describe the development of mid gut under following headings. Physiological herniation, Rotation of the mid gut Retraction of herniated loops Fixation of intestines Discuss the following congenital anomalies involving midgut: <b>i.</b> Body wall defects <b>ii.</b> Vitelline duct abnormalities <b>iii.</b> Gut rotation defects <b>iv.</b> Gut atresias and stenoses	<b><u>GIL-ANA-E5</u></b> Midgut	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>41</b>	Explain general hepatic structure. Discuss the concept of three hepatic lobules. Describe the histology of classical hepatic lobule.	<b><u>GIL-ANA-H 4</u></b> Histology of liver	Interactive Practical	BCQ's, SAQ's, OSPE
<b>42</b>	Describe the different components of biliary tract Describe the microscopic structure of gall bladder	<b><u>GIL-ANA-H5</u></b> Histology of Gall bladder	Interactive Practical	BCQ's, SAQ's, OSPE

43	Identify microscopically exocrine and endocrine pancreas Discuss the histological features of secretory and duct part of exocrine pancreas Identify and explain endocrine pancreas and its different cell types.	<b><u>GIL-ANA-H6</u></b> Histology of Pancreas	Interactive Practical	BCQ's, SAQ's, OSPE
<b>PHYSIOLOGY</b>				
44	Mention physiological anatomy of exocrine part of pancreas Describe composition of pancreatic juice Mention functions of pancreatic juice Mention importance of trypsin inhibitor Describe basic stimuli that cause pancreatic secretion Mention phases of pancreatic secretion	<b><u>GIT-1-PHY-8</u></b> Pancreatic juice; its composition, function and regulation	Interactive Lecture	BCQs, SAQs, OSPE, Viva
45	Describe the main functions of liver Describe composition of bile juice Mention difference between hepatic bile and gallbladder bile	<b><u>GIT-1-PHY-9</u></b> Functions of liver and composition of bile	Interactive Lecture	BCQs, SAQs, OSPE, Viva
46	List the functions of bile Mention the role of bile acids/salts in fat digestion and absorption Describe enterohepatic circulation of bile salts Describe regulation of bile secretion Describe mechanism of gallbladder emptying	<b><u>GIT-1-PHY-10</u></b> Function and regulation of bile secretion	Demonstration	BCQs, SAQs, OSPE, Viva
47	Demonstrate the procedure of how to pass the nasogastric tube	<b><u>GIL-PHY-P2</u></b> Nasogastric Tube-II	Interactive Practical	BCQs, SAQs, OSPE,
<b>BIOCHEMISTRY</b>				
48	Definition / Site/ Substrate required for gluconeogenesis Pathway of Gluconeogenesis Regulatory Enzymes / Steps of gluconeogenesis Stimulator & Inhibitor Factors of Gluconeogenesis Pathway	<b><u>GIL-BIO-6</u></b> Gluconeogenesis & cori's cycle	Interactive Lecture	BCQs, SAQs, OSPE, Viva
49	Definition / Site Types or Phases of HMP Shunt Name of regulatory Enzyme Biochemical importance of HMP Shunt Role of NADPH compound in Human Life Regulatory Steps of HMP Shunt & Their regulatory factors	<b><u>GIL-BIO-7</u></b> HMP Shunt	Interactive Lecture	BCQs, SAQs, OSPE, Viva
50	Definition / Site / Substrates Pathway of Glycogenesis & glycogenolysis Regulatory Steps/ Enzymes Biomedical Importance of Glycogenesis & glycogenolysis	<b><u>GIL-BIO-8</u></b> Glycogenesis Glycogenolysis	Interactive Lecture	BCQs, SAQs, OSPE, Viva

51	Regulatory Enzymes of Glycogen metabolism Glycogen Storage Diseases	<b><u>GIL-BIO-9</u></b> Regulation of glycogen metabolism & glycogen storage diseases	Interactive Lecture	BCQs, SAQs, OSPE, Viva
52	Site/ Substrates Pathways, Regulatory Steps/ Regulatory Factors Biomedical Importance Clinical Importance of Fructose & Sorbitol Pathway	<b><u>GIL-BIO-10</u></b> Fructose & Sorbitol Metabolism	Interactive Lecture	BCQs, SAQs, OSPE, Viva
53	Define Amino Acids Pool Describe Protein turn over Describe Protein Degradation Define Nitrogen Balance Describe Positive & Negative Nitrogen Balance	<b><u>GIL-BIO-11</u></b> Amino Acids Pool & nitrogen balance	Interactive Lecture	BCQs, SAQs, OSPE, Viva
54	Describe Transamination & its Biomedical importance, Describe Deamination & Its Biomedical importance, Describe Transmethylation & Biomedical importance Describe Decarboxylation & its Biomedical Importance	<b><u>GIL-BIO-12</u></b> Amino Acids Reactions	Interactive Lecture	BCQs, SAQs, OSPE, Viva
55	Definition/ Site/ Substrate/ Products Pathways Mitochondrial/ Cytosol Steps Regulatory Enzymes, Regulatory Factors of Urea Cycle. Relation of Urea Cycle with TCA Cycle Disorders of urea Cycle	<b><u>GIL-BIO-13</u></b> Urea Cycle	Interactive Lecture	BCQs, SAQs, OSPE, Viva
56	Definition Types, Clinical Manifestation & their biochemical causes of clinical features Names of Enzymes involve in Ammonia Intoxication Definition of Uremia Normal Level of Blood Urea & Ammonia Causes of Hyperuremia	<b><u>GIL-BIO-14</u></b> Ammonia Intoxication	Interactive Lecture	BCQs, SAQs, OSPE, Viva
57	Metabolic Pathway of Phenylalanine, Tyrosine, Tryptophan, Describe Phenylketonurea Describe tyrosinemia & Types Describe Albinism , Describe Alkaptonurea	<b><u>GIL-BIO-15</u></b> Metabolism of Aromatic Amino Acids	Interactive Lecture	BCQs, SAQs, OSPE, Viva
58	Describe Metabolic Pathway of Methionine/ Cysteine & Cystine Describe their metabolic disorder	<b><u>GIL-BIO-16</u></b> Metabolism of Sulphur containing Amino Acids	Interactive Lecture	BCQs, SAQs, OSPE, Viva
59	Types of Oxidation of F.A Definition of Alpha/ beta/ Omega Oxidation Explain the Metabolic Pathway of Beta Oxidation Biomedical importance of Beta Oxidation ATP molecules formation in Beta oxidation	<b><u>GIL-BIO-17</u></b> Oxidation of Fatty Acids	Interactive Lecture	BCQs, SAQs, OSPE, Viva

60	<p>Definition / Site / Substrates/ Products &amp; Metabolic Pathway of Ketogenesis Regulatory Steps or Enzymes of Ketogenesis</p> <p>Definition of Ketonemia/ Ketonurea/ Ketosis</p> <p>Diabetic ketoacidosis Definition / Sites / Substrates Describe the metabolic Pathway of ketolysis Regulatory Enzymes &amp; Regulatory Factors Role of thiophorase enzyme</p> <p>Clinical Importance of ketolysis</p>	<p><b><u>GIL-BIO-18</u></b> Ketonegenesis &amp; ketolysis</p>	Interactive Lecture	BCQs, SAQs, OSPE, Viva
61	<p>Enlist the components of L.F.T</p> <p>Explain the functions of different components of L.F.T</p> <p>Estimation of serum SGOT, SGPT.</p> <p>Role of the L.F.T in the diagnosis/ prognosis of clinical disorders</p>	<p><b><u>GIL-BIO-19</u></b> Liver function Test</p>	Interactive Lecture	BCQs, SAQs, OSPE, Viva
62	<p>To estimate normal serum urea level.</p> <p>Describe the conditions of increased or decreased urea levels.</p>	<p><b><u>GIL-BIO-P2</u></b> estimation of serum urea</p>	Interactive Practical	BCQs, SAQs, OSPE,
63	<p>To estimate albumin: globulin ratio from given sample</p>	<p><b><u>GLI-BIO-P3</u></b> Albumin: Globulin ratio</p>	Interactive Practical	BCQs, SAQs, OSPE,
64	<p>Enlist the components of L.F.T,</p> <p>Explain the functions of different components of L.F.T Estimation of serum SGOT, SGPT.</p> <p>Role of the L.F.T in the diagnosis/ prognosis of clinical disorders</p>	<p><b><u>GIL-BIO-P4</u></b> Liver function Test</p>	Interactive Practical	BCQs, SAQs, OSPE, Viva
65	<p>To estimate serum bilirubin direct &amp; indirect from given sample</p>	<p><b><u>GLI-BIO-P5</u></b> Serum bilirubin direct &amp; indirect</p>	Interactive Practical	BCQs, SAQs, OSPE,
66	<p>To interpretate the PT &amp; APTT</p>	<p><b><u>GLI-BIO-P6</u></b> Interpretation of PT &amp; APTT</p>	Interactive Practical	BCQs, SAQs, OSPE,
<b>PATHOLOGY</b>				
67	<p>Explain aetiology, pathogenesis, mode of transmission, clinical diagnosis of Hepatitis</p>	<p><b><u>GIL1-Path-2</u></b> Hepatitis</p>	Interactive lecture	BCQ'S, SAQ's, OSPE
<b>COMMUNITY MEDICINE</b>				
68	<p>Understand and determine the global burden of Hepatitis. Describe the epidemiology of Hepatitis A, B, C, D, E and its different types in Pakistan. determine the factors responsible for the spread of Hepatitis.</p> <p>Elucidate the preventive measures of Hepatitis at different level of prevention</p> <p>Discuss the strategies of Hepatitis control program in Pakistan</p>	<p><b><u>GIT3 COM2</u></b> Hepatitis: Types, Prevention and Control</p>	Interactive Lecture	BCQ'S, SAQ's, OSPE

**THEME 4: THE LOWER GASTROINTESTINAL DISORDERS**

<b>GASRO-INTESTINAL TRACT-LIVER MODULE</b>				
<b>GROSS ANATOMY</b>				
<b>S. NO</b>	<b>LEARNING OBJECTIVES</b>	<b>TOPIC</b>	<b>TEACHING STRATEGY</b>	<b>ASSESSMENT</b>
<b>69</b>	Identify different parts of large intestine. Mention general characteristics of most of large intestine. Discuss basic anatomical differences between large and small intestine. Explain basic anatomy of cecum and vermiform appendix. Identify different positions of the appendix and give clinical importance.	<b><u>GIL-ANA-G19</u></b> Large intestine-1 Cecum and Vermiform appendix	Demonstration	BCQs, SAQs, OSPE, Viva
<b>70</b>	Discuss gross features of different parts of colon: Ascending colon, Transverse colon, descending colon and mention their peritoneal covering. Give blood and nerve supply.	<b><u>GIL-ANA-G20</u></b> Large intestine-2 Colon	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>71</b>	Describe location, course and other gross anatomical features of rectum. Mention important relations. Explain blood supply, lymph drainage & nerve supply. Discuss clinical correlates of rectum Explain the difference of peritoneal covering in a male and female.	<b><u>GIL-ANA-G21</u></b> Rectum	Demonstration	BCQs, SAQs, OSPE, Viva
<b>72</b>	Describe the ano-rectal junction Discuss the location and basic structure of anal canal Describe the difference of neurovascular supply and lymphatic drainage between upper and lower half of anal canal. Explain the relations of the anal canal. Discuss the anatomy of anal sphincters. Discuss the clinical correlates. Describe ischio-rectal fossa.	<b><u>GIL-ANA-G22</u></b> Anal canal	Demonstration	BCQs, SAQs, OSPE, Viva
<b>73</b>	List the derivatives of hindgut. Describe the developmental process of the following. Partitioning of the cloaca. Anal canal Discuss main features related to abnormalities of hindgut including: Recto-anal atresia, fistula imperforate anus Congenital megacolon	<b><u>GIL-ANA-E6</u></b> Hind gut	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>74</b>	Discuss the important gross and histological features of large intestinal wall. Identify intestinal glands and different cell types. Identify and explain the lymphoid ring around the vermiform appendix. Differentiate between gross and microscopic features of large and small intestine. Describe the histology of anorectal junction	<b><u>GIL-ANA-H7</u></b> Histology of Large intestine	Interactive Practical	BCQ's, SAQ's, OSPE

<b>PHYSIOLOGY</b>				
<b>75</b>	Mention physiological anatomy of small intestine Describe secretion of small intestine Mention function and regulation of small intestinal secretion Mention enzymes present in the brush border of small intestine Describe movements of small intestine	<b><u>GIT-1-PHY-11</u></b> Secretion and movements of small intestine	Demonstration	BCQs, SAQs, OSPE, Viva
<b>76</b>	Mention physiological anatomy of large intestine Describe the secretions of large intestine and mention their function Describe movements of large intestine Describe defecation and defecation reflex	<b><u>GIT-1-PHY-12</u></b> Secretion and movements of large intestine	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>PHARMACOLOGY</b>				
<b>77</b>	Classify drugs used in gastrointestinal tract disorders. Explain the mechanism of action of these drugs Enlist the side effects of these drugs	<b><u>GIL-PHARM-1</u></b> Overview of Pharmacotherapy in GIT Disorders-I	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>78</b>		<b><u>GIL-PHARM-2</u></b> Disorders-II	Interactive Lecture	
<b>COMMUNITY MEDICINE</b>				
<b>79</b>	Describe the global epidemiology of food borne diseases. classify food borne diseases. Determine the factors responsible for spread of food borne diseases. discuss the prevention of food borne diseases	<b><u>GIL-CM-3</u></b> Food Borne Diseases	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>RADIOLOGY</b>				
<b>80</b>	Interpretate the normal X-ray of Lower Gastrointestinal viscera (small and Large intestine) Identify the intestinal shadows, gas shadows, vertebral spines levels, contrast xrays showing contrast media in rectum and large intestine.	<b><u>GIL-RADIO-2</u></b> Lower GI Xray	Interactive Lecture	BCQs

### THEME 5: VASCULAR DISORDERS

<b>GASRO-INTESTINAL TRACT-LIVER MODULE</b>				
<b>GROSS ANATOMY</b>				
<b>S. NO</b>	<b>LEARNING OBJECTIVES</b>	<b>TOPIC</b>	<b>TEACHING STRATEGY</b>	<b>ASSESSMENT</b>
<b>80</b>	Describe general characteristics of lumbar vertebrae Explain the attachments of lumbar fascia. Discuss attachment of muscles of posterior abdominal wall	<b><u>GIL-ANA-G23</u></b> Posterior abdominal wall-I: Lumbar vertebrae & muscles	Demonstration	BCQs, SAQs, OSPE, Viva

82	Discuss lumbosacral plexus Explain formation of cisterna chyli and thoracic duct Discuss nerve supply, lymphatic drainage of abdominal walls and viscera	<b>GIL-ANA-G24</b> Posterior abdominal wall-II	Demonstration	BCQs, SAQs, OSPE, Viva
83	Describe the location of abdominal aorta in respect of beginning, course and termination mentioning important relations and vertebral levels. Identify paired and unpaired branches and area of their supply.	<b>GIL-ANA-G25</b> Blood supply of the GIT -I Abdominal Aorta	Demonstration	BCQs, SAQs, OSPE, Viva
84	Describe the formation, course and termination of inferior vena cava List the tributaries of inferior vena cava	<b>GIL-ANA-G26</b> Blood supply of the GIT -II Inferior vena cava	Demonstration	BCQs, SAQs, OSPE, Viva
85	Name the groups of lymph nodes draining the abdomen. Explain them. Describe lymphatic trunks, cisterna chily and thoracic duct.	<b>GIL-ANA-G27</b> Lymphatic drainage of GIT	Demonstration	BCQs, SAQs, OSPE, Viva
<b>PHYSIOLOGY</b>				
86	List important hormones secreted from the GIT mucosa Describe the role of these hormones in regulation/control of GIT function	<b>GIT-1-PHY-13</b> Hormones of GIT	Interactive lecture	BCQs, SAQs, OSPE, Viva

<b>CLINICAL CLASSES</b>				
S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
87		<b>GIL-MEDICINE</b> The Acute Medical abdominal Medical	Interactive lecture	BCQs, SAQs, OSPE, Viva
88		<b>GIL-SURGERY</b> Major Surgeries of the Abdomen	Interactive lecture	

### TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>PROFESSIONALISM AND BEHAVIOURAL SCIENCES</b>						
<b>Stigma and ReactionS to illness</b>	Stigma and Reactions to illness, Strategies for not being judgmental	Describe Stigma and reactions to illness, and how not to be judgmental	Lecture	GIT	1	MCQ
<b>COMMUNICATION SKILLS</b>						

<b>Verbal and non-verbal communication skills</b>	Verbal and non-verbal communication skills	Develop and Demonstrate effective verbal and non-verbal communication skills	Role play, Group Discussion	GIT 1	1	MCQ
<b>Listening skills</b>	Listening skills	Develop and demonstrate active listening skills for learning purposes and to the patient's problems	Role play, Group Discussion	GIT1	1	MCQ
<b>Reading skills</b>	Reading skills	Develop and Demonstrate effective reading skills	Role play, Group Discussion	GIT 1	1	MCQ
<b>RESEARCH</b>						
<b>Sample size</b>	Sample Size Calculation	Calculate sample size for different research projects. Calculate sample size for a specific research project.	Lecture and Hands on Exercise in Computer lab	GIT 1	2	MCQs/Assignment

## CLINICAL SCIENCES SUBJECTS

### GIT MODULE

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>ISLAMIC STUDY</b>  Ethics of Bio-medical research  Confidentiality in the light of ISLAM  Halal and Haram	Describe the importance of research as an obligation for a Muslim.	1	Lecture
		Identify the paradigms of ethics for biomedical research		
		Evaluate current practices of maintaining patient confidentiality in light of the teachings of Islam.	1	Lecture
		Comprehend and internalize the concept of Halal (allowed) and forbidden in Islam and its application to professional life	1	Lecture
2.	<b>PAKISTAN STUDY</b>	Role of NGOs	1	Lecture
3.	<b>ANAESTHESIA</b>  Fluid Electrolytes	Describe Hyponatremia and Hypernatremia	1	Lecture
		Describe Hypokalemia and Hyperkalemia	1	Lecture
		Classify and briefly describe rehydration solutions	1	Lecture
		Discuss Fluid Electrolytes	1	Lecture



4.	<b>CRITICAL CARE</b> Gastroenterology	Upper & Lower GI bleeding	1	Lecture
		Acute Pancreatitis	1	Lecture
		Evaluation & Management of Liver failure	1	Lecture
		Diarrhea	1	Lecture
5.	<b>FAMILY MEDICINE</b> Non Communicable Diseases	Comorbidities IHD, CCF, CVA	1	Lecture
		Hepatitis and CLD	1	Lecture
		Secondary Prevention	1	Lecture

### TEACHING HOURS ALLOCATION

S. No	Subject	Hours	Practical Hours
1	Anatomy	50	14
2	Physiology	17	4
3	Biochemistry	19	12
4	Pharmacology	2	-
5	Pathology	2	-
6	Community Medicine	3	-
7	Medicine	1	-
8	Surgery	1	-
9	CBL 4 (Anatomy)*	8	-
10	CBL 7 (Physiology)*	14	-
11	CBL 7 (Biochemistry)*	14	-
12	Radiology	2	-
13	Islamic Study	3	-
14	Pakistan Study	1	-
15	Anesthesia	4	-
16	Critical Care	4	-
17	Family Medicine	3	-
<b>Total hours</b>		<b>148</b>	<b>30</b>

\*Minimum 2 hours are allotted for each CBL session per Module

S. No	Tagged Subject	Teaching Hours
1	Professionalism and Behavioral Sciences	1
2	Communication Skills	3
3	Research	2
	<b>Total hours</b>	<b>6</b>

## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

- Student must report to examination hall/venue, in time for smooth conduction of the exams.
- No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
- No students will be allowed to sit in exam without College ID Card, and Lab Coat
- Students must sit according to their roll numbers mentioned on the seats.
- Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
- Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
- Students must not possess any written material or communicate with their fellow students
- Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
- **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### ASSESSMENT

#### Internal: Total 10% (20 marks)

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with

all the concerned departments.

### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to final marks.

## **METHODS OF ASSESSMENT**

### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

### **Short Essay Questions (SEQs):**

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize

his/her thoughts

## ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## WEEKLY TESTS

- The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.
  - The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.
  - It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.
  - Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

## POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD

Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class

PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail or Non gradable

## ASSESSMENT BLUEPRINT

### GIT AND LIVER-I MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	PRA OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

**ENDOCRINOLOGY-I MODULE**  
**SECOND PROFESSIONAL MBBS**

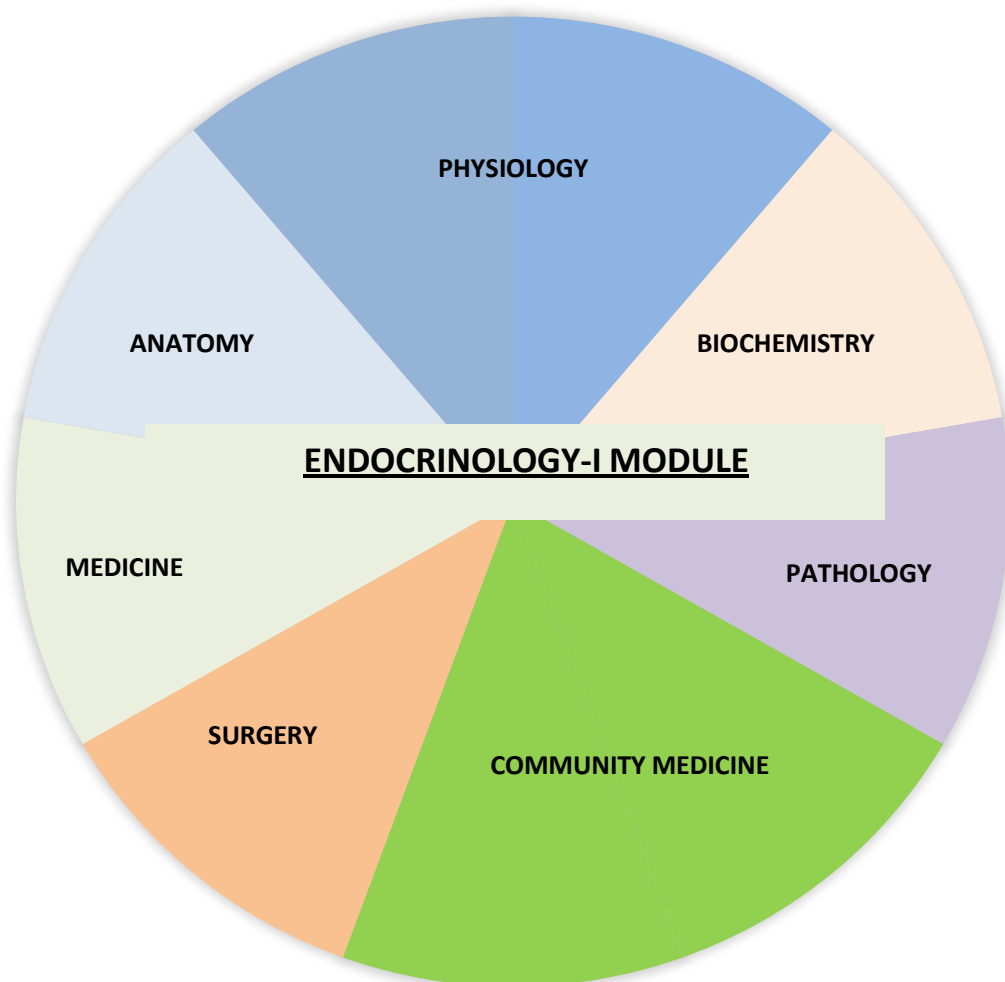


## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Head & neck and special senses, Nervous System-I, Git and Liver-I, Endocrinology-I, Renal & Excretory-I and Reproductive System-I modules which link basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF ENDOCRINOLOGY-I MODULE



## MODULE OVERVIEW

### ENDOCRINOLOGY-I MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Second professional
<b>Duration</b>	4 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

### ENDOCRINOLOGY-I MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Dr. Saqib Baloch	Anatomy	Assistant Professor
2.	Dr. Shahab Hanif	Anatomy	Assistant Professor
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### **Module Objectives:**

- Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- Highlights information on the contribution of continuous on the student's overall performance.
- Includes information on the assessment methods that will be held to determine every student's performance.

#### **Achievement of objectives:**

- Focuses on information pertaining to examination policy, rules and regulations.

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Skills session
- Practicals
- Self-Directed Study



**INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

**SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

**CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

**SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

**PRACTICALS:**

Basic science practical related to Anatomy, Physiology and Biochemistry have been schedule for student learning.

**• SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

**INTRODUCTION**

The ductless glands that comprise the Endocrine System produce chemicals directly into the bloodstream, transmit information, and keep the body's internal environment stable.

They reach their intended organ or tissue through the bloodstream, where they are recognized and responded to by receptors in the target organ or tissue. Endocrine system hormones regulate and coordinate several bodily processes, including development, metabolism, temperature regulation, stress response, and reproduction.

This module aims to enhance students' comprehension of the fundamental principles of endocrine hormones, including their structure, physiological functions, and diseases related to primary etiology. Additionally, it will highlight how this information can aid in diagnosis and treatment decisions.

This module on the endocrine system will make it easier to identify the clinical manifestations of common metabolic and endocrinological illnesses and connect those manifestations to the fundamental sciences.

**RATIONALE**

Endocrine illnesses, such as diabetes mellitus and diseases connected to the thyroid, are widespread throughout Pakistan. In the second spiral of the curriculum, this module serves as the foundation for second-year MBBS students to acquire not just knowledge application but also how to connect the normal and the aberrant.

**LEARNING OBJECTIVES**

At the end of this module, the students will be able to;

**General Learning Outcomes:**

- i. To elucidate the function of the endocrine system in preserving homeostasis, coordinating development and growth, and encouraging fruitful reproduction.
- ii. To investigate the histological characteristics of various glands.
- iii. To differentiate between messengers that are autocrine, paracrine, and endocrine.
- iv. To explain the mechanisms of action and chemical makeup of hormones.
- v. To explain how hormones are synthesized and secreted.
- vi. To describe the fundamentals of both positive and negative feedback mechanisms that govern the regulation of hormone secretion.
- vii. To describe the blood's hormone transport system and the effects of several hormones' reversible binding to plasma proteins.
- viii. To describe the principles behind biological activity measurement and hormone tests.
- ix. To discuss the significance of hormone activation and breakdown as well as the metabolism of hormones in blood and tissues.
  - x. To talk about hormone excretion and clearance as well as the metabolic derivatives of hormones.
  - xi. To describe and talk about how hormones function physiologically
  - xii. To elucidate the effects of both excessive and insufficient hormone production.
- xiii. To outline and go over the function of hormone receptors in the action of hormones, including their kind, location, and signaling pathways.
- xiv. To identify the pathophysiological causes and effects of particular endocrine illnesses by using endocrinological concepts.
  - xv. To comprehend pharmacology's function in treating common endocrine diseases.
- xvi. Talk about the causes and effects of iodine deficiency as well as the key components of Pakistan's iodine control program.
- xvii. Describe Pakistan's diabetes mellitus epidemiology from a global viewpoint.
- xviii. Explain the various approaches to diabetes mellitus prevention and management.

**Knowledge / Cognitive Domain**

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Identify the various endocrine glands their Anatomy, Physiology & Biochemistry & pathology.
2. Describe the, synthesis, structure, histological features, functions and Pathophysiology of various hormones secreted by endocrine glands.
3. Describe the regulation of hormones (Positive & Negative feedback mechanism).
4. Describe the conditions associated with dysfunction of endocrine glands.
5. Describe the basic mechanism of action of drugs used to treat these disorders.
6. Identify and mention the microscopic features of Pituitary & Pineal gland, Thyroid and parathyroid gland and Endocrine gland.

**Skills / Psychomotor Domain:**

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

1. Carry out practical work as instructed in an organized and safe manner
2. Make and record observations accurately.
3. Determine the serum levels of different hormones by ELIZA technique and have knowledge of normal and abnormal value.
4. Determine the different blood sugar level HbA1c and have knowledge of normal and abnormal value.
5. To detect Hormonal level by ELISA method

6. Thyroid function test (TSH, T3, T4)
7. Laboratory diagnosis of diabetes mellitus (HbA1C, GCT, OGTT, FBS, RBS)
8. To calculate BMI (Body Mass Index)

**Attitude / Affective Domain:**

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

- A. Comply with standard laboratory procedures
- B. Engage in professional classroom and practical work.
- C. Work as a team to effectively communicate with instructors, staff, and peers.
- D. Act with professionalism and moral principles when interacting with teachers, personnel, cadavers, and patients.
- E. Work well as a team to communicate with instructors and peers.
- F. Show that you have the capacity to evaluate your performance.

**Outcomes of Endocrinology-I Module**

1. Knowledgeable
2. Skillful
3. Community Health Promoter
4. Problem-solver
5. Professional
6. Researcher
7. Leader and Role Model

**THEMES FOR ENDOCRINOLOGY MODULE**

SNO	Theme	Duration
1	Short/Tall stature and the role of the pituitary gland	1 week
2	Neck swelling with bulging eyes & Tetany and the role of the thyroid gland	1 week
3	Increased thirst and urination (Diabetes Mellitus/ Diabetes Insipidus) and the role of the pancreas	1 week
4	Moon face and the role of the adrenal gland	1 week

**SPECIFIC LEARNING OBJECTIVES THEME WISE**

**THEME 1: SHORT/TALL STATURE AND THE ROLE OF THE PITUITARY GLAND**

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				

01	Define the endocrine system. Classify the endocrine system. What are the functions of the endocrine system.	<b>Endo-1-Ana-G-1</b> Introduction of the anatomy of the Endocrine system	Interactive lecture	BCQ's, SAQ's, OSPE
02	Describe the embryological development & congenital anomalies of pituitary & Pineal gland.	<b>Endo-1-Ana-E-1</b> Embryological development of pituitary and Pineal gland.	Interactive lecture	BCQ's, SAQ's, OSPE
03	Describe the gross anatomy, neurovascular supply & Clinical correlates of Pituitary & Pineal gland	<b>Endo-Ana-G-2</b> Gross Anatomy of Pituitary and Pineal gland.	Interactive lecture	BCQ's, SAQ's, OSPE
04	Discuss the microscopic features of Pituitary & Pineal gland	<b>Endo-Ana-H-1</b> Microscopic Anatomy of Pituitary & Pineal gland	Interactive Practical	BCQ's, SAQ's, OSPE
<b>BIOCHEMISTRY</b>				
05	How Hormones are classified on the basis of their Chemical Nature	<b>Endo-1-Bio-1</b> Classification of Hormones on the basis of chemical Nature.	Interactive Lecture	BCQ/SAQ/OSPE
06	How hormones act through cAMP/cGMP/Tyrosine kinase pathway	<b>Endo-1-BIO-2</b> Mechanism of action of Hormones (second messenger system)	Interactive Lecture	BCQ/SAQ/OSPE
<b>PHYSIOLOGY</b>				
07	Define different types of chemical messengers Describe the functional relationships between the Hypothalamus - Pituitary Axis	<b>Endo-1-PHY-1</b> Introduction to endocrinology Hypothalamus-pituitary Axis	Interactive Lecture	BCQs/SAQs
08	Describe the hormones secreted by the anterior pituitary gland and describe their hypothalamic control & regulation by positive and negative feedback Mechanism	<b>Endo-1-PHY-2</b> Classification of hormones, Regulation of secretion	Demonstration	BCQs/OSPE
09	Explain the structure, mechanism of action and physiological effects of Growth hormone.	<b>Endo-1-PHY-3</b> Physiology and regulation of Growth hormone	Interactive Lecture	BCQ's, SAQ's, OSPE
10	Describe the functions of Pineal gland, how it control body's circadian rhythm.	<b>Endo-1-PHY-4</b> Physiological effects of pineal gland	Interactive Lecture	BCQ
<b>MEDICINE</b>				
11	Define the clinical conditions related to the pineal and the pituitary gland	<b>Endo-1-Med-1</b> Clinical conditions related with pineal and pituitary gland.	Interactive lecture	BCQ/SAQ
<b>PATHOLOGY</b>				
12	Describe the different types of Anterior Pituitary gland disorders.	<b>Endo-1-Path-1</b> Disorders of Pituitary gland.	Interactive lecture	BCQ's, SAQ's, OSPE

## THEME 2: NECK SWELLING WITH BULGING EYES & TETANY AND THE ROLE OF THE THYROID GLAND

<b>ANATOMY</b>				
<b>13</b>	Describe the embryological development & congenital anomalies of Thyroid & Parathyroid gland.	<b><u>Endo-1-Ana-E-2</u></b> Embryological development of Thyroid & Parathyroid gland.	Interactive lecture	BCQ'S, SAQ's, OSPE
<b>14</b>	Describe the gross anatomy, neurovascular supply & Clinical correlates of Thyroid & Parathyroid gland.	<b><u>Endo-1-Ana-G-3</u></b> Gross Anatomy of Thyroid & Parathyroid gland.	Interactive lecture	BCQ'S, SAQ's, OSPE
<b>15</b>	Discuss the microscopic features of Thyroid & Parathyroid gland.	<b><u>Endo-1-Ana-H-2</u></b> Microscopic Anatomy of Thyroid & Parathyroid gland.	Interactive Practical	BCQ'S, SAQ's, OSPE
<b>BIOCHEMISTRY</b>				
<b>16</b>	Describe the biosynthesis of thyroid hormones from Tyrosine and Iodine trapping by thyroid gland.	<b><u>Endo-1-Bio-3</u></b> Synthesis of thyroid hormones	Interactive Lecture	BCQ/ SAQ/ OSPE
<b>17</b>	What are thyroid function tests (TFTs)? Describe their biochemical interpretation.	<b><u>Endo-1-Bio-4</u></b> Biochemical Interpretation of Thyroid Function Tests (TFTs)	Interactive Lecture	BCQ/ SAQ/ OSPE
<b>18</b>	Describe the biochemical role of parathyroid hormones in Calcium and phosphate metabolism in humans.	<b><u>Endo-1-Bio-5</u></b> Biochemical actions of parathyroid hormones	Interactive Lecture	BCQ/ SAQ/ OSPE
<b>19</b>	Estimation of thyroid hormones	<b><u>Endo-1-Bio-6</u></b> Estimation of thyroid hormones	Interactive Practical	BCQ/ SAQ/ OSPE
<b>PHYSIOLOGY</b>				
<b>20</b>	Describe formation, Secretion and transport of thyroid hormones	<b><u>Endo-1-PHY-5</u></b> Introduction of Thyroid hormones	Interactive Lecture	BCQ/ SAQ/ OSPE
<b>21</b>	Describe Physiological effects of Thyroid Hormone on Growth, metabolism and body systems	<b><u>Endo-1-PHY-6</u></b> Physiological role of thyroid hormones	Interactive Lecture	BCQ/ SAQ/ OSPE
<b>22</b>	Explain Mechanism of action/target organ of PTH Describe Effect of Parathyroid Hormone on Calcium regulation	<b><u>Endo-1-PHY-7</u></b> Physiological role of PTH hormones	Interactive Lecture	BCQ/ SAQ/ OSPE
<b>23</b>	Explain the function, secretion and regulation of Vitamin D and Calcitonin Describe Effect of Describe Effect of Parathyroid Hormone on Calcium regulation Vitamin D and calcitonin Hormone on Calcium regulation	<b><u>Endo-1-PHY-8</u></b> Physiological role of Vitamin D and Calcitonin	Demonstration	BCQ/ SAQ/ OSPE
<b>PATHOLOGY</b>				

24	Discuss the different disorders of Thyroid gland	<b>Endo1-Path-2</b> Disorders of Thyroid gland	Interactive lecture	BCQ'S, SAQ's,
<b>SURGERY</b>				
25	Define the procedure of thyroidectomy. What are the indications for thyroid surgery? What are the complications related to this surgery?	<b>Endo-1-Surg-1</b> Thyroidectomy	Interactive lecture	BCQ/ SAQ OSPE
<b>COMMUNITY MEDICINE</b>				
26	Discuss the epidemiology and consequences of iodine deficiency Explain Prevalence and causes of Endemic goiter Discuss Preventive measures of iodine Deficiency at different level of prevention Discuss the strategies of Iodine control program in Pakistan.	<b>Endo-1-CM-1</b> Iodine Control Program In Pakistan	Interactive Lecture	BCQ'S, SAQ's, OSPE

### THEME-3 INCREASED THIRST AND URINATION AND THE ROLE OF THE PANCREAS

<b>ANATOMY</b>				
27	Describe the embryological development & congenital anomalies of Endocrine Pancreas.	<b>Endo-1-Ana-E-3</b> Embryological development of Endocrine Pancreas	Interactive lecture	BCQ'S, SAQ's, OSPE
28	Describe the gross anatomy, neurovascular supply & Clinical correlates of Endocrine Pancreas.	<b>Endo-1-Ana-G-4</b> Gross Anatomy of Endocrine Pancreas	Interactive lecture	BCQ'S, SAQ's, OSPE
<b>BIOCHEMISTRY</b>				
29	Biosynthesis of Insulin. Structure of Insulin. Mechanism of action of Insulin and Glucagon. Factors affecting Insulin secretion. Metabolic functions of Insulin and Glucagon.	<b>Endo-1-BIO-7</b> Insulin and glucagon	Interactive lecture	BCQ'S, SAQ's, OSPE
30	How blood glucose is maintained throughout a day in humans during different metabolic states	<b>Endo-1-Bio-8</b> Maintenance of blood sugar during starvation and in well-fed states	Interactive Lecture	BCQ/ SAQ/ OSPE
31	What are Ketotic & non ketotic Complications of Diabetes Mellitus and Explain their Biochemical basis.	<b>Endo-1-BIO-9</b> Ketotic & Non ketotic Complications associated with Diabetes Mellitus	Interactive Lecture	BCQ/ SAQ/ OSPE

32	Estimation of serum Insulin	<b>Endo-1-Bio-10</b> Estimation of serum Insulin	Interactive Practical	BCQ/ SAQ
<b>PHYSIOLOGY</b>				
33	Describe secretion and physiological functions of ADH Describe SIADH (syndrome of inappropriate Anti Diuretic Hormone)	<b>Endo-1-PHY-9</b> Post pituitary	Demonstration	BCQ/ SAQ/ OSPE
34	Name the hormones of pancreas. Explain Mechanism of action of insulin. Describe the Control of Insulin Secretion	<b>Endo-1-PHY-10</b> Endocrine Pancreas	Interactive Lecture	BCQ/ SAQ/OSPE

35	Describe the effects of insulin on carbohydrates, proteins and Fats metabolism	<b>Endo-1-PHY-11</b> Pancreas (Insulin)	Interactive Lecture	BCQ/ SAQ/ OSPE
36	Describe regulation of glucagon and its effects on body	<b>Endo-1-PHY-12</b> Pancreas (Glucagon)	Interactive Lecture	BCQ/ SAQ
<b>MEDICINE</b>				
37	Define diabetes mellitus. Types, risk factors, causes, clinical features, complications of DM	<b>Endo-1-MED-2</b> Diabetes Mellitus	Interactive lecture	BCQ/ SAQ
<b>PATHOLOGY</b>				
38	Describe the different types of Endocrine Pancreas & discuss briefly the Diabetes Mellitus.	<b>Endo-1-Path-3</b> Disorder of Endocrine Pancreas, Diabetes Mellitus	Interactive lecture	BCQ'S, SAQ's, OSPE
<b>COMMUNITY MEDICINE</b>				
39	Describe the epidemiology and risk factors of Diabetes Mellitus Describe the classification of diabetes mellitus adopted by WHO. Understand the importance of DM as a global health issue. Explain Complications and discuss Preventive measures of Diabetes Mellitus at different level of prevention	<b>Endo-1-CM-2</b> Epidemiology of diabetes in Pakistan, Preventive measures for Diabetes Mellitus at different level of prevention	Interactive Lecture	BCQs/ SAQs/ SEQs

#### THEME 4: MOON FACE AND THE ROLE OF THE ADRENAL GLAND

<b>ANATOMY</b>				
40	Describe the embryological development & congenital anomalies of Adrenal gland.	<b>Endo-1-Ana-E-4</b> Embryological development of Adrenal gland.	Interactive lecture	BCQ'S, SAQ's, OSPE
41	Describe the gross anatomy, neurovascular supply & Clinical correlates of Adrenal gland.	<b>Endo-1-Ana-G-5</b> Gross anatomy of Adrenal gland.	Interactive lecture	BCQ'S, SAQ's, OSPE

42	Discuss the microscopic features of Adrenal gland.	<b><u>Endo-1-Ana-H-3</u></b> Microscopic Anatomy of Adrenal Gland	Interactive Practical	BCQ'S, SAQ's, OSPE
<b>BIOCHEMISTRY</b>				
43	Describe the actions of mineralocorticoid hormones in water and electrolyte balance.	<b><u>Endo-1-Bio-11</u></b> Biochemical actions of mineralocorticoids.	Interactive Lecture	BCQ/SAQ/OSPE
44	Describe the Biochemical actions of Glucocorticoid hormones.	<b><u>Endo-1-Bio-12</u></b> Biochemical actions of Glucocorticoids	Interactive Lecture	BCQ/SAQ/OSPE
45	Estimation of serum Cortisol	<b><u>Endo-1-Bio-13</u></b> Estimation of serum Cortisol	Interactive Practical	BCQ/SAQ
<b>PHYSIOLOGY</b>				
46	Name the hormones of adrenal cortex, and regulation of adrenal cortex hormone secretion.	<b><u>Endo-1-PHY-13</u></b> Adrenal cortex Regulation of secretion	Interactive Lecture	BCQ/SAQ/OSPE
47	Describe the physiological effects of Aldosterone	<b><u>Endo-1-PHY-14</u></b> Physiological effects of Aldosterone	Interactive Lecture	BCQ/SAQ
48	Describe Effects of Cortisol on Carbohydrate, Proteins and Fat Metabolism, role of Cortisol in Stress, Inflammation and Allergy	<b><u>Endo-1-PHY-15</u></b> Physiological effects of Glucocorticoid (Cortisol)	Demonstration	BCQs/SAQ
49	To describe BMI. To calculate BMI To describe factors affecting BMI To classify obesity and describe the factors affecting obesity	<b><u>Endo-1-PHY-16</u></b> To calculate BMI	Interactive Practical	BCQ/SAQ/OSPE
<b>MEDICINE</b>				
50	Define the clinical conditions related with the Adrenal gland	<b><u>Endo-1-MED-3</u></b> Clinical conditions related with Adrenal gland	Interactive lecture	BCQ/SAQ
<b>PATHOLOGY</b>				
51	Describe the hyper-secretory & hypo-secretory disorders of adrenal cortex & Medulla	<b><u>Endo-1-Path-4</u></b> Hyper and Hypo-secretion of hormones from adrenal medulla & cortex	Interactive lecture	BCQ'S, SAQ's, OSPE

### TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>RESEARCH</b>						



<b>Data Collection Procedures</b>	Data Collection Procedures	Discuss procedure of data collection for your study.	Lecture/ Group Discussion	Endocrine 1	2	MCQ and Assignment
<b>Ethical Review</b>	Ethical principles for medical research Application for ethical approval	Describe ethical principles for the purpose of medical research	Lecture	Endocrine 1	1	MCQ and Assignment

### CLINICAL SCIENCES SUBJECTS

#### ENDOCRINE MODULE

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>ISLAMIC STUDY</b>  Euthanasia and other end of life care issues  Islamic concepts of response to pandemics	Evaluate the contemporary issues related to end-of-life care in light of the Islamic teachings	1	Lecture
		Comprehend the concept of saving human life at all costs. Discuss Role of the Moral code of Islam in preventing human life during pandemics even by restricting basic obligatory Ibadah	1	Lecture
2.	<b>CRITICAL CARE</b>  Endocrine Disturbance	Thyroid storm and myxedema coma	1	Lecture
		Addisons disease and syndrome	1	Lecture
		Hyperglycemia management in ICU	1	Lecture
		Disorders of calcium, phosphate and magnesium	1	Lecture

### TEACHING HOURS ALLOCATION

S. No	Subject	Hours	Practical Hours
1	Anatomy	12	6
2	Physiology	20	2
3	Biochemistry	13	6
4	Medicine	3	-
5	Pathology	4	-
6	Community Medicine	2	-
7	Surgery	1	-

8	CBL 4 (Physiology)*	8	-
9	CBL 2 (Anatomy)*	4	-
10	Islamic Study	2	-
11	Critical Care	4	-
<b>Total hours</b>		<b>73</b>	<b>14</b>

\*Minimum 2 hours are allotted for each CBL session per Module

S. No	Tagged Subject	Teaching Hours
1	Professionalism	3
<b>Total hours</b>		<b>3</b>

## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

- Student must report to examination hall/venue, in time for smooth conduction of the exams.
- No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
- No students will be allowed to sit in exam without College ID Card, and Lab Coat
- Students must sit according to their roll numbers mentioned on the seats.
- Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
- Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
- Students must not possess any written material or communicate with their fellow students
- Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
- **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### ASSESSMENT

#### Internal: Total 10% (20 marks)

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.

- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

#### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to final marks.

### **METHODS OF ASSESSMENT**

#### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

#### **Short Essay Questions (SEQs):**

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

#### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions

for students will be used to answer on the provided answer copy.

- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

### ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### WEEKLY TESTS

The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.

It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.

Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

### POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD

Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class

PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+

75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail or Non gradable

## ASSESSMENT BLUEPRINT

### ENDOCRINOLOGY-I MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

## LEARNING RESOURCES

The learning resources for the educational contents of MBBS program are available for the students which assist learners to achieve the outcomes and by focusing on educational content. In addition; the names of the books for each subject as a learning resources is available with the educational content of the same subject.

Following learning resources can be used by the undergraduates;

- Books
- Evidence based articles from journals
- Digital library to search the material for self-directed learning
- Video Tapes
- Displays
- Models
- Phantom Heads
- Printed Notes
- Case based scenarios'
- Community Visits

**Recommended Books Second YEAR MBBS**

<b>Anatomy</b>		<b>Physiology</b>		<b>Biochemistry</b>	
<ul style="list-style-type: none"> <li>Clinically Oriented Anatomy <a href="#">Keith.L. Moore, Arthur F. Dalley, Anne M.R. Agur</a> 7<sup>th</sup> Or Latest Editio</li> <li>Gray's Anatomy For Students <a href="#">Drake &amp; Vogl &amp; Mitchell</a> 3<sup>rd</sup> Or Latest Edition                             <ul style="list-style-type: none"> <li>Clinical Anatomy By Regions (Reference Book) <a href="#">Richard S. Snell</a> 9<sup>th</sup> Edition</li> </ul> </li> <li>Last's Anatomy: Regional &amp; Applied (Reference Book) <a href="#">Chummy S. Sinnatamby</a> 12<sup>th</sup> Or Latest Edition</li> <li>Atlas Of Human Anatomy <a href="#">Frank H. Netter</a> 6<sup>th</sup> Edition</li> </ul> <p><b>Embryology</b></p> <ul style="list-style-type: none"> <li>Langman's Medical Embryology <a href="#">T.W. Sadler</a> 13<sup>th</sup> Edition                             <ul style="list-style-type: none"> <li>The Developing Human Clinically Oriented Embryology (Reference Book) <a href="#">Moore &amp; Persaud &amp; Torchia</a> 10<sup>th</sup> Edition</li> </ul> </li> </ul> <p><b>Histology</b></p> <ul style="list-style-type: none"> <li>Medical Histology <a href="#">Laiq Hussain Siddiqui</a> 5<sup>th</sup> Or Latest Edition Wheaters Functional Histology <a href="#">Barbara Young</a> 5<sup>th</sup> Edition</li> <li>Basic Histology (Text And Atlas) (Reference Book) <a href="#">Luiz Junqueira, Jose Carneiro</a> 11<sup>th</sup> Or Latest Edition</li> </ul>		<p>7. Guyton and Hall Textbook of Medical Physiology – 15<sup>th</sup> Edition.</p> <p>8. Ganong's Review of Medical Physiology, 27<sup>th</sup> Edition.</p>		<p>7. Harper's Illustrated Biochemistry, 32 edition.</p> <p>8. Lippincott's Illustrated Reviews- Biochemistry 7<sup>th</sup> edition.</p>	
<b>Pathology</b>		<b>Community Medicine</b>		<b>Pharmacology</b>	
<p>Robbins &amp; Cotran Pathologic Basis Of Disease <a href="#">Vinay Kumar, Abul K. Abbas, Jon C. Aster</a> 10<sup>th</sup> Edition</p>		<p>Park's Text book of Preventive And Social Medicine <a href="#">K.</a></p>		<p>1. Lippincott Illustrated Reviews: Pharmacology <a href="#">Karen Whalen, Carinda Feild, Rajan Radhakrishnan</a></p>	

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**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you?    Y     N
- B. The course contents met with your expectations   
     l. Strongly disagree                                    5. Strongly agree
- C. The lecture sequence was well-planned   
     l. Strongly disagree                                    5. Strongly agree
- D. The contents were illustrated with   
     l. Too few examples                                    5. Adequate examples
- E. The level of the course was   
     l. Too low    5. Too high
- F. The course contents compared with your expectations   
     l. Too theoretical                                        5. Too empirical
- G. The course exposed you to new knowledge and practices   
     l. Strongly disagree                                    5. Strongly agree
- H. Will you recommend this course to your colleagues?   
     l. Not at all    5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand   
     l. Strongly disagree                                    5. Strongly agree
- B. The teaching aids were effectively used   
     l. Strongly disagree                                    5. Strongly agree
- C. The course material handed out was adequate   
     l. Strongly disagree                                    5. Strongly agree
- D. The instructors encouraged interaction and were helpful   
     l. Strongly disagree                                    5. Strongly agree
- E. Were objectives of the course realized?    Yes  No

F. Please give overall rating of the course

90% - 100% (    )

80% - 90% (    )

70% - 80% (    )

60% - 70% (    )

50% - 60% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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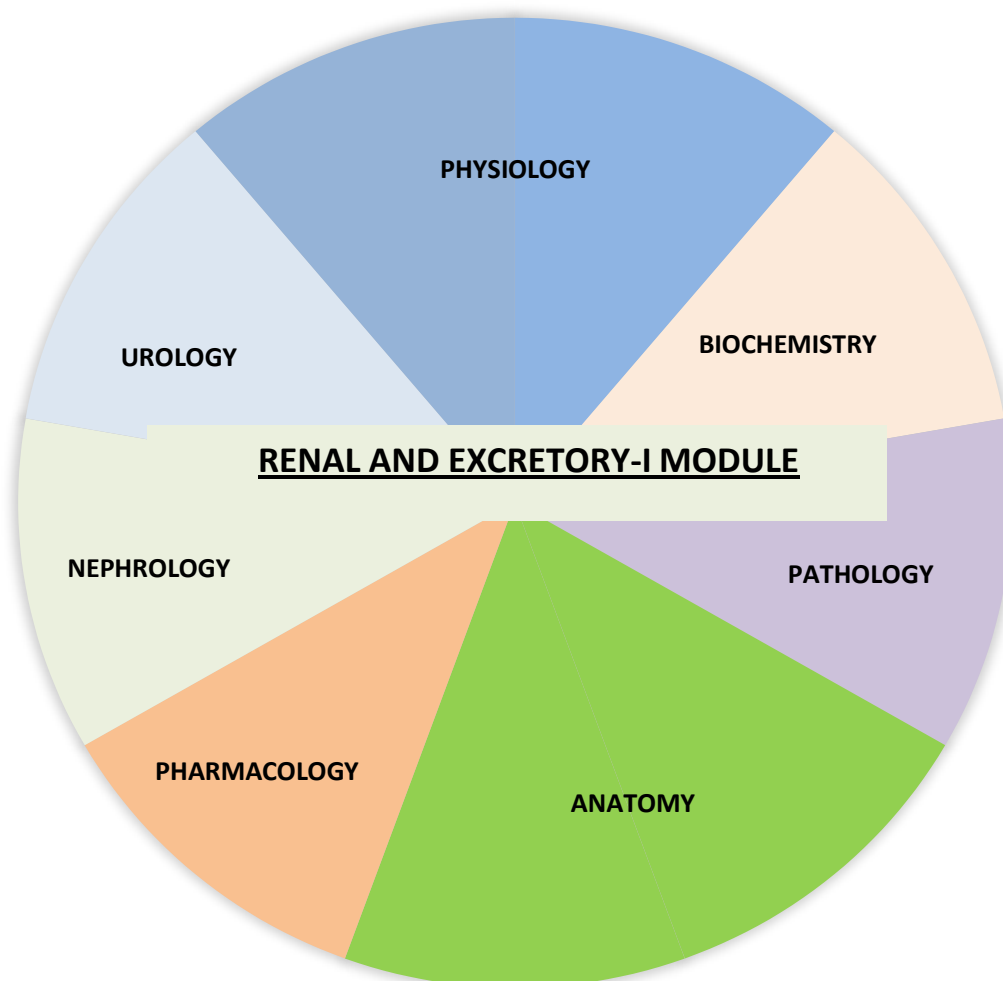
## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Head & neck and special senses, Nervous System-I, Git and Liver-I, Endocrinology-I, Renal & Excretory-I and Reproductive System-I modules which link basic science knowledge to clinical problems.

## INTEGRATING DISCIPLINES OF RENAL AND EXCRETORY-I MODULE

### MODULE OVERVIEW



## RENAL AND EXCRETORY-I MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Second professional
<b>Duration</b>	4 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

### RENAL AND EXCRETORY -I MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Dr. Saqib Baloch	Anatomy	Assistant Professor
2.	Dr. Shahab Hanif	Anatomy	Assistant Professor
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### Module Objectives:

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

#### Achievement of Objectives:

Focuses on information pertaining to examination policy, rules and regulations.

### LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
  - Small Group Discussion
  - Case- Based Learning (CBL)
  - Skills session
  - Practicals
  - Self-Directed Study
- **INTERACTIVE LECTURES:**  
Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture

becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to Anatomy, Physiology and Biochemistry have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

Welcome to the excretory and renal modules. This fascinating session will act as a foundation and is crucial to your future practice as physicians. This module includes a number of interactive tasks that are meant to make your learning engaging and fruitful.

In life, fluid balance is the most crucial aspect. Since every cell in our body is submerged in an extracellular and intracellular fluid compartment, ion movements and media balance are crucial to a person's ability to operate normally. The kidneys' encountering system and functions are exquisite and well-planned. Humans have two kidneys, each of which is made up of a nephron, a unit cell that performs a variety of systemic physiological activities. Nephrons are well-suited to counteract the effects of fluid balance and maintain appropriate pH levels within physiological bounds.

## RATIONALE

The body gets rid of waste and harmful chemicals through the renal and excretory systems. The mechanisms underlying renal diseases such as electrolyte imbalance, dehydration, renal hypertension, renal failure, polycystic kidney, nephrotic and nephritic syndrome, as well as how the renal system develops and functions on a cellular level, will be thoroughly examined in this module along with the renal and excretory systems. With the help of this module, second-year students will be able to identify the clinical signs of common kidney disorders and connect them to the fundamental sciences. We'll be going over it again in the upcoming years

## LEARNING OBJECTIVES

### Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

- i. By learning and using the pertinent basic sciences, students will be able to: Describe the parts of the renal and excretory systems by the end of this module.
- ii. Explain how the anatomy, physiology, and biochemistry are changed in a few frequent real-life scenarios (nephritis, metabolic problems, and UTI) using the concepts you have learned above.
- iii. Give a detailed description of the anatomy of the various renal and excretory system components.
- iv. Describe the renal and excretory systems' development and abnormalities.
- v. Describe and list the renal and excretory systems' microscopic characteristics.
- vi. Explain the roles that the renal and excretory systems play.
- vii. Analyze the body's biochemical alterations connected to the kidney and excretory systems.
- viii. List disorders affecting the kidneys and excretory system.
- ix. Explain how the renal and excretory systems are managed.
- x. Examine the renal and excretory systems.
- xi. To determine the differential diagnosis, take the patient's history and correlate the signs and symptoms of the renal and excretory systems.
- xii. To provide community members with advice on renal disease risk factors.

**Skills / Psychomotor Domain:**

1. Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:
2. Carry out practical work as instructed in an organized and safe manner
3. Make and record observations accurately.
4. Determine the serum levels of Urea, Creatinine and Electrolytes and have knowledge of normal and abnormal value.
5. Read the normal and abnormal X-ray findings of Urinary tract

**Attitude / Affective Domain:**

1. Comply with standard laboratory procedures
2. Engage in professional classroom and practical work.
3. Work as a team to effectively communicate with instructors, staff, and peers.
4. Act with professionalism and moral principles when interacting with teachers, personnel, cadavers, and patients.
5. Work well as a team to communicate with instructors and peers.
6. Show that you have the capacity to evaluate your performance.

**Outcomes of Renal and Excretory-I Module**

- A. Knowledgeable
- B. Skillful
- C. Community Health Promoter
- D. Problem-solver
- E. Professional
- F. Researcher
- G. Leader and Role Model

## THEMES FOR RENAL AND EXCRETORY MODULE

SNO	Theme	Duration
1	Overview structure and functions of Renal system	1 week
2	Renal circulation, GFR and its regulation	1 week
3	Tubular reabsorption and secretion	1 week
4	Electrolyte and fluid balance, Acid-base balance	1 week

### SPECIFIC LEARNING OBJECTIVES THEME WISE

#### THEME 1: OVERVIEW STRUCTURE AND FUNCTIONS OF RENAL SYSTEM

S.NO	TOPICS	LEARNING OBJECTIVES	TEACHING STRATEGY	ASSESSMENTS
<b>ANATOMY</b>				
1	<b>RENAL-ANA-G-1</b> Gross anatomy of the kidneys	Describe the different parts of Excretory system. Describe the gross anatomical structure & internal structure of kidneys Differentiate the anterior and posterior surfaces and anatomical relations of kidneys.	Interactive lecture	BCQ'S & SAQ'S OSPE
2	<b>RENAL-ANA-G-2</b> Blood supply, nerve supply and lymphatic drainage of the kidneys	Describe the blood supply (Renal artery, renal vein) of the kidneys. Define the lymphatic drainage & innervation of the kidneys.	Interactive lecture	BCQ'S & SAQ'S OSPE
3	<b>RENAL-ANA-H-1</b> Microscopic anatomy of the kidneys	Renal cortex and medulla, renal lobe renal lobule, medullary rays, renal columns Nephron: Glomerulus, bowman's capsule, PCT, loop of Henle, DCT, collecting tubules, collecting duct, clinical correlates. Components of juxtaglomerular apparatus, components of filtration membrane	Interactive lecture	BCQ's, SAQ's, OSPE
4	<b>RENAL-ANA-H-2</b> Histology of the kidneys-1	Renal cortex and medulla, renal lobe renal lobule, medullary rays, renal columns Nephron : Glomerulus, bowman's capsule, PCT, loop of henle, DCT, collecting tubules, collecting duct, clinical correlates.	Interactive Practical	BCQ's, SAQ's, OSPE
5	<b>RENAL-ANA-E-1</b> Development of kidney	Describe the Development of intermediate mesoderm, Development of kidney (pronephron, mesonephron , metanephron)	Interactive Lecture	BCQ'S & SAQ'S OSPE
<b>PHYSIOLOGY</b>				
6	<b>RENAL-PHY-1</b> General functions of kidneys and excretory system	Describe the different functions of the kidney and its role in homeostasis. Describe the different parts of the nephron. Distinguish b/w different types of nephrons.	Demonstration	BCQ'S & SAQ'S OSPE
<b>BIOCHEMISTRY</b>				

7	<b>RENAL-BIO-P1</b> Analysis of Urine	Discuss normal and abnormal constituents of urine (Urine analysis). Discuss all the reagents, instruments required along with the methodology	interactive practical	BCQ'S & SAQ'S OSPE
<b>PATHOLOGY</b>				
8	<b>RENAL-PATH-1</b> Anomalies of kidney	Discuss the congenital and developmental anomalies of kidney Describe autosomal dominant and autosomal recessive polycystic kidney disease	Interactive lecture	BCQs, SAQs, Viva
<b>NEPHROLOGY</b>				
9	<b>RENAL-NEPH-1</b> Acute kidney injury	Describe the pathogenesis of the acute kidney injury	Interactive Lecture	BCQ's, SAQ's,
<b>RADIOLOGY</b>				
10	<b>RENAL-RADIO-1</b> X-ray KUB	Identify the normal x-ray of abdomen showing renal shadows (margins) vertebral levels, psoas shadows and contrast media in renal calyces, ureter and bladder ( in contrast radiographs)	Interactive Lecture	BCQ's,

## THEME 2: RENAL CIRCULATION, GFR AND ITS REGULATION

S.NO	TOPICS	LEARNING OBJECTIVES	TEACHING STRATEGY	ASSESSMENTS
<b>Anatomy</b>				
11	<b>RENAL-ANA-G-3</b> Gross anatomical features of the ureters	Describe the gross structure of ureters Define its blood supply, innervation & lymphatic drainage	Interactive lecture	BCQ'S & SAQ'S OSPE
12	<b>RENAL-ANA-H-3</b> Microscopic anatomy of the ureters, urinary bladder and urethra	Ureter: Lumen, epithelium, histological layers, clinical correlates. Urinary bladder: epithelium, histological layers, clinical correlates. Urethra: parts, epithelium, histological layers, difference of male and female urethra, clinical correlates.	Interactive lecture	BCQ's, SAQ's, OSPE
13	<b>RENAL-ANA-E-2</b> Development of ureter , urinary bladder & urethra (male & female)	Explain the development of ureters, urinary bladder & urethra (male & female)	Interactive Lecture	BCQ'S & SAQ'S OSPE
14	<b>RENAL-ANA-H-4</b> Histology of the kidneys-2	Components of juxtaglomerular apparatus, components of filtration membrane, clinical correlates.	Interactive Practical	BCQ's, SAQ's, OSPE
<b>PHYSIOLOGY</b>				

15	<b>RENAL-PHY-2</b> Glomerular filtration rate (GFR) and its regulating factors	Students should be able To, explain how glomerular filtrate is formed. Describe the composition of the glomerular filtrate. State the main determinants of solute filterability. Define glomerular filtration rate (GFR) and state its normal value. Discuss the major factors that regulate the GFR (Net filtration pressure, hydrostatic, and colloid osmotic pressures)	Demonstration	BCQ'S & SAQ'S OSPE
16	<b>RENAL-PHY-3</b> Autoregulation of GFR and renal blood flow	Students should be able To define tubulo glomerular feedback Explain the functions of juxta glomerular apparatus and Macula densa Discuss myogenic autoregulation	Interactive Lecture	BCQ'S & SAQ'S OSPE
17	<b>RENAL-PHY-P1</b> To pass the urinary catheter-1	Define the conditions when to pass the urinary catheter How to insert the urinary catheter? (perform the procedure)	Interactive practical	BCQ'S & SAQ'S
<b>PATHOLOGY</b>				
18	<b>RENAL-PATH-2</b> Introduction to glomerular diseases	Classify of glomerular diseases Discuss the clinical manifestation of glomerular diseases	Interactive lecture	BCQs, SAQs, Viva
<b>NEPHROLOGY</b>				
19	<b>RENAL-NEPH-2</b> Chronic kidney injury	Describe pathogenesis of chronic kidney injury	Interactive Lecture	BCQ's, SAQ's,

### THEME 3: TUBULAR REABSORPTION AND SECRETION

S.NO	TOPICS	LEARNING OBJECTIVES	TEACHING STRATEGY	ASSESSMENTS
<b>ANATOMY</b>				
19	<b>RENAL-ANA-G-4</b> Gross anatomical features of the urinary bladder and urethra	Describe the gross structure of urinary bladder and urethra, its blood supply, nerve supply	Interactive lecture	BCQ'S & SAQ'S OSPE
20	<b>RENAL-ANA-E-3</b> Congenital anomalies of excretory system	Explain the congenital anomalies related with excretory system Differentiate between the congenital abnormalities and pathological conditions of excretory system.	Interactive Lecture	BCQ'S & SAQ'S OSPE
21	<b>RENAL-ANA-H-5</b> Histology of the Ureter and Urinary bladder	Ureter: Lumen, epithelium, histological layers, Urinary bladder: epithelium, histological layers, clinical correlates. Urethra: parts, epithelium, histological layers, difference of male and female urethra	Interactive Practical	BCQ's, SAQ's, OSPE
<b>PHYSIOLOGY</b>				



22	<b>RENAL-PHY-4</b> Features of Renal tubules	Describe features of the renal tubules. Define the renal processes: tubular reabsorption & tubular secretion. Discuss the transport mechanisms among different segments of renal tubule.	Demonstration	BCQ'S & SAQ'S OSPE
23	<b>RENAL-PHY-5</b> Tubular reabsorption and secretion – I	Explain the regulation of tubular reabsorption and secretion Define transport maximum (T <sub>m</sub> ), renal plasma threshold and splay.	Interactive Lecture	BCQ'S & SAQ'S OSPE
24	<b>RENAL-PHY-6</b> Tubular reabsorption and secretion – II	Describe the mode of reabsorption of different substances (e.g. Na <sup>+</sup> , K <sup>+</sup> , Cl <sup>-</sup> , glucose, urea, and water). Describe the mode of secretion of different substances (e.g. K <sup>+</sup> , H <sup>+</sup> and organic ions).	Interactive Lecture	BCQ'S & SAQ'S OSPE
25	<b>RENAL-PHY-7</b> Hormonal regulation of tubular functions	To describe the nervous mechanisms that regulates tubular function (renal sympathetic nerves). To describe the hormonal mechanisms that regulate tubular function: A. Renin-angiotensin system. B. Aldosterone. C. Atrial natriuretic peptides. d)Antidiuretic hormone. D. Parathyroid hormone.	Interactive Lecture	BCQ'S & SAQ'S OSPE
26	<b>RENAL-PHY-P2</b> To pass the urinary catheter-2	Define the conditions when to pass the urinary catheter How to insert the urinary catheter? (perform the procedure)	Interactive practical	BCQ'S & SAQ'S
<b>BIOCHEMISTRY</b>				
27	<b>RENAL-BIO-1</b> Na <sup>+</sup> Metabolism	Describe the different sources of sodium. Enlist different functions of sodium. Justify their role in maintaining the osmolality of plasma. Interpret the Normal values of sodium in serum and urine.	Interactive Lecture	BCQ'S & SAQ'S OSPE
28	<b>RENAL-BIO-2</b> K <sup>+</sup> , Cl <sup>-</sup> Metabolism	Describe the different sources of potassium & Chloride. Enlist different functions of potassium & Chloride. Justify their role in maintaining the osmolality of plasma. Interpret the Normal values of potassium & chloride in serum and urine	Interactive Lecture	BCQ'S & SAQ'S OSPE
29	<b>RENAL-BIO-P-2</b> Estimation of serum Electrolytes	To estimate the serum electrolytes level in a given serum. Discuss all the reagents, instruments required along with the methodology	Interactive Practical	BCQ's, SAQ's, OSPE
<b>PHARMACOLOGY</b>				
30	<b>RENAL-PHARM-1</b> Diuretics	Classification, Mechanism of action, indications, contraindications and adverse effects of diuretics	Interactive Lecture	BCQs, SAQs,

				Viva
<b>NEPHROLOGY</b>				
31	<b>RENAL-NEPH-3</b> Glomerular disease (Nephritic and nephrotic syndrome)	Describe the pathogenesis of glomerular disorder Discuss the clinical manifestation of glomerular diseases	Interactive Lecture	BCQ's, SAQ's, OSPE

#### THEME 4: ELECTROLYTE AND FLUID BALANCE, ACID-BASE BALANCE

S.NO	TOPICS	LEARNING OBJECTIVES	TEACHING STRATEGY	ASSESSMENTS
<b>ANATOMY</b>				
32	<b>RENAL-ANA-G-5</b> Applied anatomy related with kidneys	Explain prinephric abscess, nephrotosis, renal transplantation, renal cysts, pain in pararenal region, accessory renal vessels	Interactive Lecture	BCQ'S & SAQ'S OSPE
33	<b>RENAL-ANA-H-6</b> Histology of the Urethra	Urethra: parts, epithelium, histological layers, difference of male and female urethra, clinical correlates.	Interactive Practical	BCQ's, SAQ's, OSPE
<b>PHYSIOLOGY</b>				
34	<b>RENAL-PHY-8</b> Concentration and Dilution of urine - I	Describe the mechanisms behind the establishment of an osmotic gradient in the medullary interstitium. Describe the counter current multiplication system. Describe how urea contributes to the hyperosmotic renal medullary interstitium and to the urine concentration.	Demonstration	BCQ'S & SAQ'S OSPE
35	<b>RENAL-PHY-9</b> Concentration and Dilution of urine – II	Describe the role of vasa recta as countercurrent exchanger in maintaining the hyperosmolarity of the renal medulla. Describe how the kidneys produce dilute and concentrated urine. Define obligatory urine volume	Interactive Lecture	BCQ'S & SAQ'S OSPE
36	<b>RENAL-PHY-10</b> Micturition reflex and its abnormalities	Define micturition. Describe process of storage, elimination of urine and its control (ANS) Explain micturition reflex. Define atonic and autonomic bladder	Interactive Lecture	BCQ'S & SAQ'S OSPE
37	<b>RENAL-PHY-11</b> Acidification of urine	Discuss different buffer systems in the body (bicarbonate, phosphate, ammonia) Explain the role of kidneys in acid base balance Discuss the changes in the level of urine PH (maximum/minimum level; 4.5-8)	Interactive Lecture	BCQ'S & SAQ'S OSPE

38	<b>RENAL-PHY-P3</b> Arterial Blood gas Analysis	Arterial blood sampling Analysis and interpretation of arterial blood gases	Interactive Practical	BCQ's, SAQ's, OSPE
<b>BIOCHEMISTRY</b>				
39	<b>RENAL-BIO-3</b> Body Buffers	Describe the Body Buffers. Describe its related disorders. Discuss its management.	Interactive Lecture	BCQ'S & SAQ'S OSPE
40	<b>RENAL-BIO-4</b> Acid Base balance , Disorders & management	Define the Acid Base balance. Describe its related disorders. Discuss its management.	Interactive Lecture	
41	<b>RENAL-BIO-5</b> Renal Function Tests	Describe glomerular function Explain clearance test (inulin, creatinine and urea) Discuss tubular function test Discuss proteinuria	Interactive Lecture	BCQ'S & SAQ'S OSPE
42	<b>RENAL-BIO-P3</b> Interpretation of ABG's	Demonstrate the normal and abnormal blood Ph, bicarbonate, carbon dioxide and oxygen levels.	Interactive Practical	BCQ's, SAQ's, OSPE
43	<b>RENAL-BIO-P4</b> Renal Function Tests	Describe glomerular function Estimation of serum creatinine Explain clearance test (inulin, creatinine and urea) Discuss tubular function test Discuss proteinuria	Interactive Practical	BCQ's, SAQ's, OSPE
<b>PATHOLOGY</b>				
44	<b>RENAL-PATH-3</b> Infections of kidney & lower urinary tract	Enlist infection related to kidney & lower urinary tract Define acute and chronic pyelonephritis Describe causes of acute and chronic pyelonephritis Define acute and chronic cystitis and mention its causes	Interactive lecture	BCQs, SAQs, Viva
<b>UROLOGY</b>				
45	<b>RENAL-URO-1</b> How to approach urological patient	Describe the sign and symptoms of the urinary system diseases What should be the differential diagnosis to approach the urinary system diseases	Interactive Lecture	BCQ's, SAQ's
46	<b>RENAL-URO-2</b> How to investigate urological patient	Describe the basic investigations to diagnose the urinary system diseases	Interactive Lecture	BCQ's, SAQ's
<b>SKILL LAB</b>				
47	<b>RENAL SKILL LAB</b> Dialysis	Define dialysis and mechanism of function of artificial kidney Define dialysate, uraemia Discuss peritoneal dialysis technique Complications of the dialysis	Skill lab	BCQ's

### TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>COMMUNICATION SKILLS</b>						
<b>Verbal and non-verbal communication skills</b>	Verbal and non-verbal communication skills	Develop and Demonstrate effective verbal and non-verbal communication skills	Role play, Group Discussion	GIT 1/ Renal 1	1	MCQ
<b>Listening skills</b>	Listening skills	Develop and demonstrate active listening skills for learning purposes and to the patient's problems	Role play, Group Discussion	GIT1/ Renal 1	1	MCQ
<b>Reading skills</b>	Reading skills	Develop and Demonstrate effective reading skills	Role play, Group Discussion	GIT 1/ Renal 1	1	MCQ
<b>RESEARCH</b>						
<b>Sampling techniques and sample selection</b>	Probability and non-probability Sampling techniques Sample Selection Inclusion Criteria Exclusion Criteria	Describe various sampling techniques. Justify sampling techniques chosen for a specific research project. Select sample for a specific research project	Lecture/ Group Discussion	Renal 1	2	MCQs/Assignment
<b>Designing of a Questionnaire</b>	Steps for making a questionnaire	Design a questionnaire Identify validated questionnaire	Lecture/ Group Discussion	Renal 1	2	MCQ and Assignment

### CLINICAL SCIENCES SUBJECTS

#### RENAL AND EXCRETORY MODULE 1

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>ISLAMIC STUDY</b>  Death & Dying	Envision the spiritual and metaphysical aspects of death in light of the teachings of Quran & Hadith. To recognize that Islam give very high priority to tolerance while dealing with Muslims and Non-Muslim individuals.	1	Lecture
	Islam and tolerance	Narrate examples from life of Prophet and Sahabah.	1	Lecture

		Recognize the reward of tolerance in this world and the hereafter		
2.	<b>ANAESTHESIA</b>  Acid Bases balance	Explain Acidosis Discuss Alkalosis Describe the causes for metabolic acidosis and metabolic alkalosis Disucss Acid Base Balance	1 1 1 1	Lecture Lecture Lecture Lecture
3.	<b>CRITICAL CARE</b>  Renal Disturbance	Metabolic Acidosis & Alkalosis Acute Kidney Injury in the ICU Renal replacement therapy in ICU Disorders of Sodium & Potassium	1 1 1 1	Lecture Lecture Lecture Lecture
4.	<b>Orthopaedics &amp; Trauma</b>  Nailing	I/M nailing of long bones Plating long bones Surgery in PPD and CP like tendon elongations/transfers Close Nailing	1 1 2 1	Lecture Lecture Skill session Lecture
5.	<b>UROLOGY</b> Kidneys, Ureter and Bladder	Embryology and Surgical anatomy of Kidneys and ureter Congenital anomalies of Kidneys and Ureters  Urinary Symptoms (irritative and obstructive symptoms) Etiology and pathogenesis of Kidney Stones Etiology and pathogenesis of UTI Congenital Annomalies of Bladder Etiology and pathogenesis of Cystitis	1 1  1 1 1 1 1	Lecture Lecture  Lecture Lecture Lecture Lecture
6.	<b>FAMILY MEDICINE</b>  Common Renal / Urinary problems	Haematuria, UTIs and bladder problems Renal colic Acute Renal presentations	1 1 1	Lecture Lecture Lecture

### TEACHING HOURS ALLOCATION

S. No	Subject	Hours	Practical Hours
1	Anatomy	10	12
2	Physiology	15	6
3	Biochemistry	5	8
4	Pathology	3	-
5	Nephrology	3	-
6	Pharmacology	1	-
7	CBL 2 (Anatomy)*	4	-

8	CBL 4 (Physiology)*	8	-
9	CBL 2 (Biochemistry)*	4	-
10	Radiology	1	-
11	Islamic Study	2	-
12	Anesthesia	4	-
13	Critical Care	4	-
14	Orthopaedics & Trauma	5	-
15	Urology	9	-
16	Family Medicine	3	-
<b>Total hours</b>		<b>81</b>	<b>26</b>

\*Minimum 2 hours are allotted for each CBL session per Module

S. No	Tagged Subject	Teaching Hours
1	Communication Skills	3
6	Research	4
<b>Total hours</b>		<b>7</b>

## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

- Student must report to examination hall/venue, in time for smooth conduction of the exams.
- No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
- No students will be allowed to sit in exam without College ID Card, and Lab Coat
- Students must sit according to their roll numbers mentioned on the seats.
- Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
- Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
- Students must not possess any written material or communicate with their fellow students
- Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
- **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### ASSESSMENT

**Internal: Total 10% (20 marks)**

- Students will be assessed comprehensively through multiple methods to determine achievement of module

objectives through two methods: Module examination and Graded assessment by Individual department

- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

#### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

#### **METHODS OF ASSESSMENT**

##### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

##### **Short Essay Questions (SEQs):**

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

##### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.

- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

#### **ASSIGNMENTS**

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

#### **WEEKLY TESTS**

The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.

It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.

Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.



## POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD

Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class

PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail or Non gradable

## ASSESSMENT BLUEPRINT

### RENAL AND EXCRETORY-I MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**REPRODUCTIVE SYSTEM-I MODULE**  
**SECOND PROFESSIONAL MBBS**

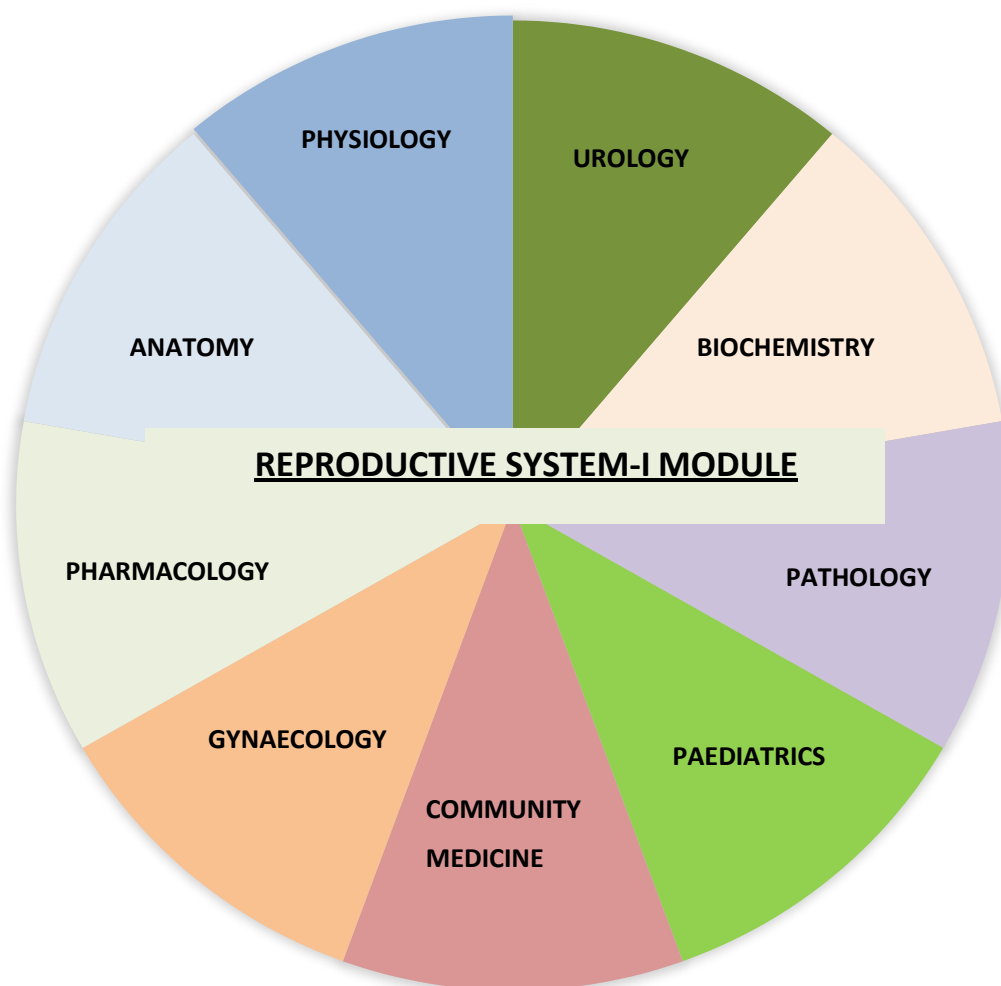


## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Head & neck and special senses, Nervous System-I, Git and Liver-I, Endocrinology-I, Renal & Excretory-I and Reproductive System-I modules which link basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF REPRODUCTIVE SYSTEM-I MODULE



**MODULE OVERVIEW**  
**REPRODUCTIVE SYSTEM -I MODULE DETAILS**

<b>Course</b>	MBBS
<b>Year</b>	Second professional
<b>Duration</b>	4 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

**REPRODUCTIVE SYSTEM-I MODULE COMMITTEE**

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Dr. Saqib Baloch	Anatomy	Assistant Professor
2.	Dr. Shahab Hanif	Anatomy	Assistant Professor
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

**Module objectives:**

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

**Achievement of objectives:**

- Focuses on information pertaining to examination policy, rules and regulations.

**LEARNING METHODOLOGIES**

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Skills session
- Practicals
- Self-Directed Study

• **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to Anatomy, Physiology and Biochemistry have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

Welcome to the Reproductive system module. This fascinating session will act as a foundation and is crucial to your future practice as physicians. This module includes a number of interactive tasks that are meant to make your learning engaging and fruitful.

In order to manage general gynecological problems, STDs, infertility, tumors, breast disorders, pregnancy, and related issues in the mother and newborns, students can relate their knowledge of anatomy, physiology, and pathology of the structures of the male and female reproductive systems with the clinical presentation of internal and external genital diseases through the Reproduction module.

### RATIONALE

The reproductive system is covered in great detail in this module. It gives undergraduate students the ability to explain their understanding of the anatomy, physiology, biochemistry, pharmacology, and pathology of the reproductive systems of both men and women. In order for students to be able to manage general gynecological problems, pregnancy-related issues in mothers and newborns, sexually transmitted infections, infertility issues, and breast disorders, it is intended that they be able to correlate this knowledge with the clinical presentation of internal and external genital diseases in the years to come.

## LEARNING OBJECTIVES

### Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Explain the reproductive organs' anatomy (both sexes).
2. Talk about how the male and female reproductive systems developed.
3. Examine the associated developmental abnormalities of the reproductive systems in men and women.
4. Determine the distinct histological characteristics of the reproductive organs in men and women.
5. Describe the ways that male and female reproductive systems differ from one another.
6. Explain what puberty is and how hormones cause it to begin.
7. Mention a definition for "secondary sexual characteristics."
8. Describe the differentiation and determination of sex.
9. Explain and define spermatogenesis.
10. Explain how hormones affect spermatogenesis. Describe the roles of the glands and ducts in the male genitalia and how they affect the production of semen.
11. Explain the actions and secretion of testosterone. Defining capacitation
12. Explain the dysfunctions of the testicles.
13. Describe the ovary's functions.
14. Oogenesis is described by the secondary sexual traits of females.
15. Explain the ovarian cycle using a hormonal perspective.
16. Explain the uterine cycle and its hormonal causes.
17. Describe the development and function of the corpus luteum.
18. Give definitions for the terms menorrhagia, oligomenorrhea, polymenorrhea, and amenorrhea.
19. Explain the fertilization process.
20. Describe how the physiology of the body's various systems changes throughout pregnancy.
21. Explain the placenta's functions.
22. Explain the fertilization process.
23. Describe how the physiology of the body's various systems changes throughout pregnancy.
24. Define work and Describe the hormonal triggers for labor, the stages of labor, and the mechanisms that lead to labor.
25. Describe how the breasts grow and alter during puberty.
26. Explain the regulation of lactation and its impact on the menstrual cycle
27. Explain sterilization and contraception.
28. Describe the contraceptive methods used by men and women.
29. To elucidate the production and control of reproductive hormones.
30. To describe the metabolic alterations that a mother experiences during pregnancy.
31. To describe the physiological underpinnings of the pregnancy detection tests.
32. To elucidate contraception's biology.
33. To elucidate menopause's biology.
34. To describe the postmenopausal hormonal condition of reproductive hormones and their effects on the different organ systems, with a focus on the bones.
35. Recognize the significance of maternal healthcare
36. Determine the strategies for lowering the death rate among mothers.
37. Recognize the Safe Motherhood Initiative concept.
38. Acknowledge the significance of contraception and family planning.
39. Recognize the significance of teenage health

### **Skills / Psychomotor Domain:**

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

1. Demonstrate the proper technique of clinical breast examination.
2. Demonstrate the examination of axillary and supraclavicular lymph nodes.
3. Identify the findings in Fibroadenoma and Carcinoma

**Attitude / Affective Domain:**

It involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

1. Comply with standard laboratory procedures
2. Engage in professional classroom and practical work.
3. Work as a team to effectively communicate with instructors, staff, and peers.
4. Act with professionalism and moral principles when interacting with teachers, personnel, cadavers, and patients.
5. Work well as a team to communicate with instructors and peers.
6. Show that you have the capacity to evaluate your performance.

**Outcomes of Reproductive System-I Module**

- A. Knowledgeable
- B. Skillful
- C. Community Health Promoter
- D. Problem-solver
- E. Professional
- H. Researcher
- I. Leader and Role Model

**THEMES FOR REPRODUCTIVE SYSTEM -I MODULE**

SNO	Theme	Duration
1	Pelvimetry and the injuries to the pelvic floor	1 week
2	Morbidity and Mortality related with the Genital Organs Malignancies	1 week
3	Pregnancy, Parturition, Child birth and the Congenital anomalies	1 week
4	Role of the Reproductive hormones, Contraception and Menopause	1 week

**SPECIFIC**

**LEARNING OBJECTIVES THEME WISE**

**THEME 1: PELVIMETRY AND THE INJURIES TO THE PELVIC FLOOR**

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
01	Describe the bony pelvis Differentiate the types of bony pelvis	<u>Repro –S-1 G-1</u> Bony Pelvis (inlet and outlet) Difference b/w male & female pelvis Types of bony pelvis	Demonstration	

02	Describe the structures constitutethe pelvic floor Explain the pelvic walls	<b><u>Repro –S-1 G-2</u></b> Pelvic walls, Pelvic floorPelvic fascia	Demonstration	BCQs, SAQs, OSPE, Viva
03	Describe the arrangement of viscera within the pelvic cavity Define the male and female external and internal genital organs	<b><u>Repro –S-1 G-3</u></b> Over view of pelvic viscera (urinary bladder, sigmoid colon, Rectum and Male & female genital organs)	Interactive Lecture	
04	Discuss the gross features of testisand epididymis and ductus deferens Importance of descend of testis Correlate the arterial supply, venous drainage and lymphaticdrainage of testis. Discuss the clinical correlates	<b><u>Repro –S-1 G-4</u></b> Testis, epididymis ,Ductus deferens	Demonstration	
05	Describe the anatomy of prostate Seminal vesicles and ejaculatory ducts Discuss the clinical correlates	<b><u>Repro –S-1 G-5</u></b> Prostate, Seminal vesicles, Ejaculatory ducts	Interactive Lecture	
06	Explain development of male reproductive system. Discuss the development of gonads. Discuss the fate of genital ducts in the male.	<b><u>Repro –S-1 EMB-1</u></b> Development of Gonads and genitalducts	Interactive Lecture	
07	Discuss the development of male external genitalia. Describe the anomalies of the male reproductive system.	<b><u>Repro –S-1 EMB-2</u></b> Development of male externalgenitalia	Interactive Lecture	
08	Identify the microscopic features ofthe parts of male reproductive system. Identify the histological features of testis and epididymis	<b><u>Repro –S-1 HISTO-1</u></b> Microscopic features of testis and epididymis	Interactive Practical	
<b>PHYSIOLOGY</b>				
09	Parts of male and female reproductive system. Primary sex organs, Accessory sex organs Hormones (terminologies) Puberty, Menarche.	<b><u>Repro –S1-PHYS-1</u></b> General introduction of Reproductive System	Interactive Lecture	BCQs, SAQs, OSPE, Viva
10	Explain the process (stages) spermatogenesis. Describe the hormonal influenceon spermiogenesis. Discuss the function of prostate gland	<b><u>Repro –S1-PHYS-2</u></b> Spermatogenesis, spermiogenesis, sperm	Interactive Lecture	



11	To discuss the secretion & functions of testosterone with its metabolism. To describe mode of action of testosterone. Discuss the regulation of male sex hormone.	<b><u>Repro –S1-PHYS-3</u></b> Male Sex Hormones (Testosterone )	Demonstration	
<b>BIOCHEMISTRY</b>				
12	Describe the Synthesis & Regulation of Reproductive hormones	<b><u>Repro-S1 BIO- 1</u></b> Synthesis & Regulation of Reproductive hormones	Interactive lecture	BCQs, SAQs, OSPE, Viva
13	Describe the synthesis , role and mechanism of action of male sex hormones	<b><u>Repro-S1 BIO- 2</u></b> Male sex hormones	Interactive lecture	
<b>PATHOLOGY</b>				
14	Enlist congenital anomalies of penis Describe congenital anomalies of testis & epididymis Discuss atrophy of testis	<b><u>Repro-S1-PATH-1</u></b> Congenital anomalies of male genital tract	Interactive lecture	BCQs, SAQs, OSPE, Viva
<b>COMMUNITY MEDICINE</b>				
15	Understand the concept and purpose of safe-motherhood initiative. Discuss about the pillars of Safe-motherhood/ components Effectiveness of safe motherhood initiative in Pakistan.	<b><u>Repro-S1 CM-1</u></b> Safe Motherhood	Interactive lecture	BCQs, SAQs, OSPE, Viva
<b>UROLOGY</b>				
16	Define BPH List the sign and symptoms of BPH Medical and surgical treatment of BPH Describe when a patient of BPH should contact to a urologist.	<b><u>Repro-S1-URO-1</u></b> Benign prostatic hypertrophy (BPH)	Interactive lecture	BCQs, SAQs, OSPE, Viva

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
17	Describe the female internal genitalorgans Explain the anatomy of ovaries Discuss the anatomy of fallopian tube	<b>Repro –S-1 G-6</b> Ovaries and Uterine tubes	Interactive Lecture	BCQs, SAQs, OSPE, Viva
18	Explain the anatomy of Uterine tubesDescribe the parts of uterus, supportsof uterus. Explain the anatomy of vagina	<b>Repro –S-1 G-7</b> Uterus and vagina	Interactive lecture	
19	Explain the boundaries of perineum Describe the division of perineumDiscuss perineal body	<b>Repro –S-1 G-8</b> Divisions of perineum ,Perineal body	Interactive lecture	
20	Discuss the contents of anal triangleBriefly discuss the anatomy of anal canal	<b>Repro –S-1 G-9</b> Contents of anal triangle Anal canal	Interactive lecture	
21	Identify the boundaries of ischioanalfossa Discuss the contents of ischiorectalfossa.	<b>Repro –S-1 G-10</b> Ischiorectal fossa	Interactive lecture	
22	Discuss the microscopic features of prostate and seminal vesicle	<b>Repro –S-1 HISTO-2</b> Histology of Prostate, Seminal Vesicle	Interactive Practical	
<b>PATHOLOGY</b>				
23	Define inflammatory conditions of spermatic cord and testis. Describe morphology and its clinicalfeature	<b>Repro-S1-Path-2</b> Inflammatory lesions ofmale genital organs	Interactive lecture	BCQs, SAQs, OSPE, Viva
<b>PHARMACOLOGY</b>				
24	Describe pharmacology of androgen hormones and anti- androgen agents. Clinical uses of androgen hormones and anti- androgen drugs. To have knowledge about side effects and contraindications of androgen hormones and anti-androgen drugs	<b>Repro- S1 PHARM-1</b> Androgens and AntiAndrogens	Demonstration	BCQs, SAQs, OSPE, Viva

## THEME 2: MORBIDITY AND MORTALITY RELATED WITH THE GENITAL ORGANS/MALIGNANCIES

### THEME 3: PREGNANCY, PARTURITION, CHILD BIRTH AND THE CONGENITAL ANOMALIES

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
25	Discuss the contents of urogenitaltriangle in the male and female (external genitalia)	<b>Repro –S-1 G-11</b> Male and female external genitalia	Interactive lecture	BCQs, SAQs, OSPE, Viva
26	Discuss the contents of superficial perineal pouch in the male Discuss the contents of deep perinealpouch in male	<b>Repro –S-1 G-12</b> Urogenital diaphragm and contents of superficial and deepperineal pouch in the male	Interactive lecture	

27	Discuss the contents of superficial perineal pouch in female Discuss the contents of deep perineal pouch in female	<b>Repro –S-1 G-13</b> Contents of superficial perineal pouch and deep perineal pouch in the female	Interactive lecture	
28	Describe the development of parts of female reproductive system Discuss the development of gonads	<b>Repro –S-1 EMB-3</b> Development of female reproductive System	Interactive Lecture	
29	Identify the microscopic features of the parts of female reproductive system. Discuss the epithelial lining of ovary and fallopian tube	<b>Repro –S-1 HISTO-3</b> Microscopic features of Ovary and Fallopian tube	Interactive Practical	
<b>PHYSIOLOGY</b>				
30	Describe the phases of menstrual cycle. Describe the hormonal variations and regulatory mechanism of changes occurring during cycle. Describe the hormonal changes and control mechanism of the changes that occur at menopause.	<b>Repro –S1-PHYS-4</b> Menstrual cycle, Menopause.	Interactive Lecture	BCQs, SAQs, OSPE, Viva
31	Discuss ovarian cycle, oogenesis, Phases of development of ova, and development of corpus luteum Describe the synthesis, function and regulation of estrogen and progesterone Phases of endometrial cycle	<b>Repro –S1-PHYS-5</b> Ovarian Cycle, Estrogen, Progesterone, Endometrial Cycle	Demonstration	
<b>BIOCHEMISTRY</b>				
32	Describe the syntheses, role and mechanism of action of female sex hormones	<b>Repro-S1-BIO-3</b> Female sex hormones	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>PATHOLOGY</b>				
32	Enlist congenital anomalies of uterus and vagina Define pelvic inflammatory disease and organism involved in it. Discuss complications of pelvic inflammatory disease.	<b>Repro-S1-PATHO-3</b> Female Genital Tract. Congenital anomalies & Inflammatory diseases	Interactive lecture	BCQs, SAQs, OSPE, Viva
34	Endometrial histology during menstrual cycle Define dysfunctional uterine bleeding and its causes. Describe acute and chronic endometritis	<b>Repro-S1-PATHO-4</b> Diseases of Endometrium	Interactive lecture	
<b>PHARMACOLOGY</b>				

35	Describe the mechanism of action of Estrogens and Anti estrogens Explain the clinical uses and side effects of estrogen preparations.	<b>Repro S1 PHARM-2</b> Estrogens and Anti estrogens	Interactive lecture	BCQs, SAQs, OSPE, Viva
<b>COMMUNITY MEDICINE</b>				
36	Describe basic concept of family planning methods and its scope Outline the importance of family planning Discuss contraception and its application according to the needs of Pakistan Discuss the Different methods of contraception. Describe Mode of action of different contraceptive methods.	<b>Repro S1 CM-2</b> Family Planning, scope and methods of family planning	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>GYNAECOLOGY</b>				
27	Describe the menstrual cycle related abnormalities	<b>Repro-S1-Gynae &amp; obs-1</b> Menstrual disorders	Interactive lecture	BCQs, SAQs, OSPE, Viva

#### THEME 4: ROLE OF THE REPRODUCTIVE HORMONES, CONTRACEPTION AND MENOPAUSE

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>ANATOMY</b>				
38	Discuss the major blood vessels of pelvis and perineum	<b>Repro –S-1 G-14</b> Internal iliac artery and its branches	Interactive lecture	BCQs, SAQs, OSPE, Viva
39	Describe the nerves of pelvis and perineum Describe the sacral plexus and hypogastric plexus.	<b>Repro –S-1 G-15</b> Nerves of Pelvis & Perineum, sacral Plexus Hypogastric plexus	Interactive lecture	
40	Discuss the venous drainage of the pelvis and perineum. Explain the areas of lymph drainage of pelvis and perineum , Clinical importance	<b>Repro –S-1 G-16</b> Venous & Lymphatic drainage of pelvis and perineum	Interactive lecture	
41	Discuss the development of genital ducts in female Discuss the development of female external genitalia. Explain the clinical correlates	<b>Repro –S-1 EMB-4</b> Development of genital ducts Development of female external genitalia	Interactive Lecture	
42	Discuss the microscopic features of uterus, cervix and vagina	<b>Repro –S-1 HISTO-4</b> Histology of uterus, cervix, vagina	Interactive Practical	
<b>PHYSIOLOGY</b>				
	Describe the synthesis, and function of B-HCG (Human chorionic gonadotropin)	<b>Repro –S1-PHYS-6</b>		

43	Explain the effects of HCG in causing persistence in pregnancy Describe the physiological events taking place during Pregnancy.	Pregnancy, Placental hormones Physiological Changes During Pregnancy	Demonstration	BCQs, SAQs, OSPE, Viva
44	Describe parturition and its various stages, & hormonal changes Discuss the secretion & functions of oxytocin. Describe mode of action of oxytocin Describe the changes in uterus during pregnancy, and after birth. Describe the involution of uterus. Describe the hormone required to develop mammary glands during pregnancy.	<b>Repro –S1-PHYS-7</b> Parturition and Oxytocin	Interactive Lecture	
45	Describe the physiology of the mammary gland. Describe the lactation reflex. Describe the weaning.	<b>Repro –S1-PHYS-8</b> Breast and Lactation	Interactive Lecture	
46	Perform the pregnancy test, on pregnancy test-strip	<b>Repro –S1-PHYS-9</b> Pregnancy test	Interactive Practical	
<b>PHARMACOLOGY</b>				
47	Describe The Pharmacology of Oral Contraceptive Drugs. To describe their adverse effects and contraindication. Explain drug Interactions of Oral Contraceptive Drugs.	<b>Repro-S1 Pharm-3</b> Contraceptive Drugs	Interactive lecture	BCQs, SAQs, OSPE, Viva
<b>COMMUNITY MEDICINE</b>				
48	Understand the importance of adolescent health Describe the common Adolescent health issues. Discuss the different approaches for promoting adolescent health.	<b>Repro S1 CM-3</b> Adolescent Health	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>PAEDIATRICS</b>				
49	Describe the patho-physiology of mammary gland disorders. Describe the lactation reflex Describe the hormonal effect Student guide for complete protocol of lactation and weaning	<b>Repro S1-PAEDS-1</b> Breast feeding guide for medical profession	Interactive Lecture	BCQs, SAQs, OSPE, Viva

### TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>RESEARCH</b>						
Plagiarism	Definition, Types, Strategies to avoid it	Describe plagiarism and how to avoid it	Lecture/ Group Discussion	Reproduction 1	2	MCQ

## MANAGEMENT AND LEADERSHIP

<b>Models of Leadership and management</b>	Models of leadership & management	Compare different models of leadership and management	Lecture /group discussion	Reproduction 1	1	MCQs
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## CLINICAL SCIENCES SUBJECTS

### REPRODUCTION – I MODULE

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>ISLAMIC STUDY</b>  Family planning and contraception  Gender Interaction in personal and Professional Communication	Examine psycho-social and ethical issues related to family planning and contraception	1	Lecture
		Envision the wisdom of gender- based roles and responsibilities and limits of cross-gender interaction in personal and professional contexts in light of the teachings of Islam	1	Lecture
2.	<b>CRITICAL CARE</b>  Environmental Disasters	Heat stroke	1	Lecture
		Disaster management	1	Lecture
		Biological & chemical warfare	1	Lecture
		End of Life care	1	Lecture
3.	<b>ORTHOPAEDICS &amp; TRAUMA</b>	Hemiarthroplasty of the hip	2	Skill session
		Emergency management of Poly trauma	1	Lecture
		Fixation of trochanteric and femoral neck fractures	2	Skill session
4.	<b>UROLOGY</b>  Urological Investigations	Urological investigations (routine urinalysis, urine culture techniques, urinary collections for metabolic studies and urine cytological studies)	2	Skill Session
		Renal Function Tests	1	Lecture
		Ultrasonography of kidney and bladder	1	Lecture
		CT Scan and MRI of urinary tract	1	Lecture
		Intravenous excretory urography	1	Lecture
		Voiding cystourethrography	1	Lecture
5.	<b>FAMILY MEDICINE</b>  Non communicable diseases	Obesity	1	Lecture
		Asthma	1	Lecture
		COPD	1	Lecture

## TEACHING HOURS ALLOCATION

S. No	Subject	Hours	Practical Hours
1	Anatomy	23	8
2	Physiology	13	2

3	Biochemistry	3	-
4	Pathology	4	-
5	Pharmacology	3	-
6	Community Medicine	3	-
7	Pediatrics	1	-
8	Gynaecology	1	-
9	CBL 2 (Anatomy)*	4	-
10	CBL 4 (Physiology)*	8	-
11	CBL 2 (Biochemistry)*	4	-
12	Islamic Study	2	-
13	Critical Care	4	-
14	Orthopaedics & Trauma	5	-
15	Urology	8	-
16	Family Medicine	3	-
<b>Total hours</b>		<b>89</b>	<b>10</b>

\*Minimum 2 hours are allotted for each CBL session per Module

S. No	Tagged Subject	Teaching Hours
1	Research	2
2	Leadership and Management	1
<b>Total hours</b>		<b>3</b>

## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

- Student must report to examination hall/venue, in time for smooth conduction of the exams.
- No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
- No students will be allowed to sit in exam without College ID Card, and Lab Coat
- Students must sit according to their roll numbers mentioned on the seats.
- Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
- Any disturbance or Indiscipline in the exam hall/venue is not acceptable.

- Students must not possess any written material or communicate with their fellow students
- Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
- **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### ASSESSMENT

#### Internal: Total 10% (20 marks)

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

#### University Annual Exam: Total 90%

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

### METHODS OF ASSESSMENT

#### Multiple Choice Questions

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

#### Short Essay Questions (SEQs):

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.



- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiners don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

### **ASSIGNMENTS**

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### **WEEKLY TESTS**

The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.

It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.

Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

### POST-TEST DISCUSSION (PTD)

Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.

The moderator will check, assess and grade PTD

Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class

PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail or Non gradable

### ASSESSMENT BLUEPRINT

#### REPRODUCTION-I MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

## LEARNING RESOURCES

The learning resources for the educational contents of MBBS program are available for the students which assist learners to achieve the outcomes and by focusing on educational content. In addition; the names of the books for each subject as a learning resources is available with the educational content of the same subject.

Following learning resources can be used by the undergraduates;

- Books
- Evidence based articles from journals
- Digital library to search the material for self-directed learning
- Video Tapes
- Displays
- Models
- Phantom Heads
- Printed Notes
- Case based scenarios'
- Community Visits

<b>Recommended Books SECOND YEAR MBBS</b>		
<b>Anatomy</b>	<b>Physiology</b>	<b>Biochemistry</b>
<ul style="list-style-type: none"> <li>• Clinically Oriented Anatomy Keith.L. Moore, Arthur F. Dalley, Anne M.R. Agur 7<sup>th</sup> Or Latest Editio</li> <li>• Gray's Anatomy For Students Drake &amp; Vogl &amp; Mitchell 3<sup>rd</sup> Or Latest Edition               <ul style="list-style-type: none"> <li>• Clinical Anatomy By Regions (Reference Book) Richard S. Snell 9<sup>th</sup> Edition</li> </ul> </li> <li>• Last's Anatomy: Regional &amp; Applied (Reference Book) Chummy S. Sinnatamby 12<sup>th</sup> Or Latest Edition</li> <li>• Atlas Of Human Anatomy Frank H. Netter 6<sup>th</sup> Edition</li> </ul> <p><b>Embryology</b></p> <ul style="list-style-type: none"> <li>• Langman's Medical Embryology T.W. Sadler 13<sup>th</sup> Edition               <ul style="list-style-type: none"> <li>• The Developing Human Clinically Oriented Embryology (Reference Book) Moore &amp; Persaud &amp; Torchia 10<sup>th</sup> Edition</li> </ul> </li> </ul> <p><b>Histology</b></p> <ul style="list-style-type: none"> <li>• Medical Histology Laiq Hussain Siddiqui</li> </ul>	<ol style="list-style-type: none"> <li>9. Guyton and Hall Textbook of Medical Physiology – 15<sup>th</sup> Edition.</li> <li>10. Ganong's Review of Medical Physiology, 27<sup>th</sup> Edition.</li> </ol>	<ol style="list-style-type: none"> <li>9. Harper's Illustrated Biochemistry, 32 edition.</li> <li>10. Lippincot t' Illustrated Reviews- Biochemistry 7<sup>th</sup> edition.</li> </ol>

<p>5<sup>th</sup> Or Latest Edition  Wheaters Functional  Histology <a href="#">Barbara Young</a>  5<sup>th</sup> Edition</p> <ul style="list-style-type: none"> <li>Basic Histology (Text And  Atlas) (Reference Book)  <a href="#">Luiz Junqueira, Jose Carneiro</a>  11<sup>th</sup> Or Latest Edition</li> </ul>			
<b>Pathology</b>	<b>Community Medicine</b>	<b>Pharmacology</b>	
Robbins & Cotran Pathologic Basis Of Disease <a href="#">Vinay Kumar, Abul K. Abbas, Jon C. Aster</a> 10 <sup>th</sup> Edition	Park's Text book of Preventive And Social Medicine <a href="#">K. Park</a>	1. Lippincott Illustrated Reviews: Pharmacology <a href="#">Karen Whalen, Carinda Feild, Rajan Radhakrishnan</a>	

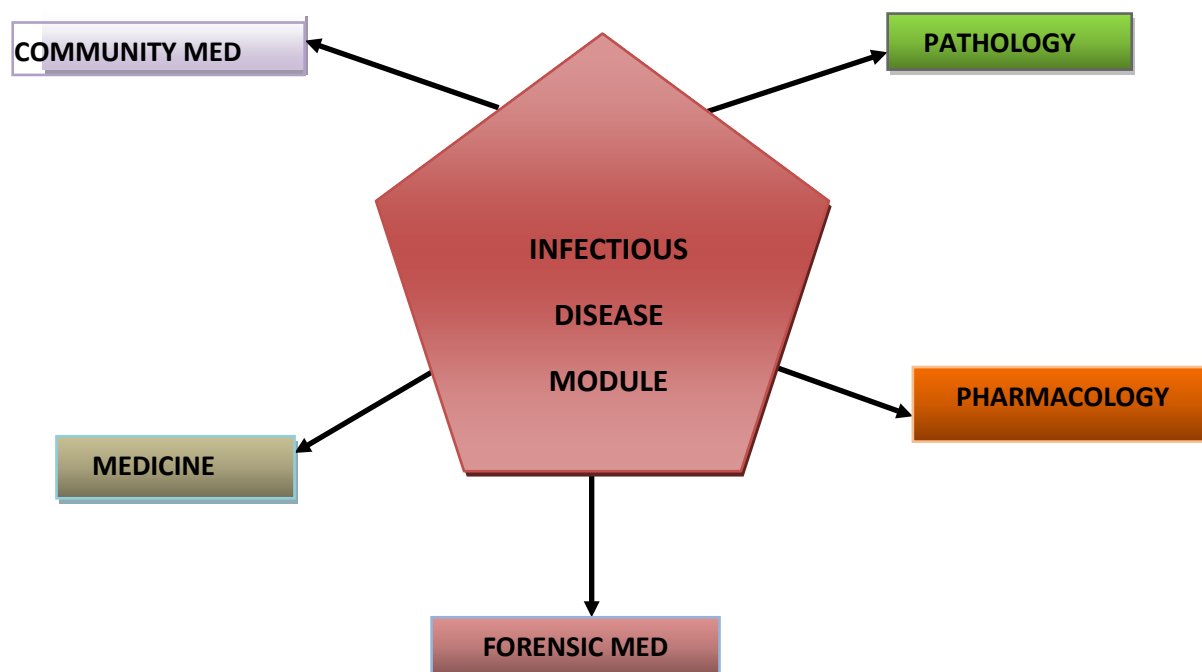


## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as CVS-II, Endocrine-II, Git and Liver-II, Hematology and oncology-II, Infectious Disease and Respiratory-II modules which link basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF INFECTIOUS DISEASE MODULE



## MODULE OVERVIEW

### INFECTIOUS DISEASE MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Third professional
<b>Duration</b>	7 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

### INFECTIOUS DISEASE MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Dr. Bhawani Shankar	Pathology	Associate Professor
2.	Abid Laghari	Pharmacology	Lecturer
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### Module objectives:

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

#### ✚ Achievement of objectives.

- Focuses on information pertaining to examination policy, rules and regulations.

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations
- Skills session
- Practicals

- Self-Directed Study

- **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to pharmacology, microbiology, forensic medicine, and community medicine have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

In the twenty-first century, infectious illnesses continue to pose a major threat to public health. According to WHO statistics, infectious diseases account for around 15 million fatalities globally annually, making them the



second greatest cause of death. The "big three" AIDS, TB, and malaria, have been dubbed such due to their significant effects on the health of people worldwide.

The tale is the same at home. Together, these nations, including Pakistan, bear 95% of the burden of infectious diseases. On the list of nations with a high prevalence of tuberculosis, Pakistan is in fifth place out of twenty-two. Malaria also takes an astonishing one million lives on an annual average. The worst part is that Pakistan is still one of the two nations where polio is still endemic. Therefore, educating the general people about the value of vaccinations is crucial. The situation is made worse by a number of other elements, including a shortage of efficient prescription drugs, poor hand washing techniques, and congestion. The disease load rises as a result of general practitioners in Pakistan, an estimated 32% of them, not giving the right prescription.

As third-year medical students, it is crucial that you expand on your current awareness of the common infectious diseases, develop a deeper comprehension of and aptitude for identifying symptoms, and connect these to pertinent research and treatments.

### **RATIONALE**

In our community, infectious infections are the most prevalent issues. Malnutrition and infectious illnesses are the leading causes of death in developing nations like Pakistan. If detected early enough, the majority of diseases are identifiable and treatable. A solid understanding of the microbiology of organisms and the diseases they cause is crucial for medical graduates. The reasoning behind the studies conducted to diagnose these illnesses should also be understood by the students. Along with the rationale behind treating common infections, they should be knowledgeable with the pharmacology of the numerous medications used to treat infectious diseases.

## **LEARNING OBJECTIVES**

### **General Learning Outcomes:**

At the end of this module, the students will be able to;

1. Explain the pathophysiology and clinical manifestations of prevalent microbial, viral, fungal, and bacterial infections.
2. Acknowledge how prevalent infectious diseases manifest clinically in the population.
3. Gather information and create a suitable study plan to arrive at a differential diagnosis.
4. For a diagnosis, evaluate the results of the investigations, exams, and history.
5. Apply the fundamentals of infectious illness management.
6. Acknowledge prognosis and preventive steps in order to counsel patients.
7. Possess knowledge of the prognosis and the ability to counsel patients appropriately.

### **Knowledge / Cognitive Domain**

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

1. Become highly skilled in taking medical histories, doing physical examinations, making differential diagnoses, and utilizing the various diagnostic and procedural tools that medicine has to offer, such as therapeutic and palliative modalities, in an efficient manner.
2. Control the common, widespread illnesses in the community
3. List the most frequent medical emergencies.
4. Create a plan for preventing prevalent illnesses in your community.
5. Create a plan for referrals.
6. Make a prescription schedule.

### **Skills / Psychomotor Domain:**

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

7. Show that you can do the disease-specific relevant examination.
8. Respond to frequent medical crises.
9. Learn how to provide first aid.
10. Do Basic Life Support (BLS).
11. Use the best evidence-based strategies for local health issues.

**Attitude / Affective Domain:**

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

1. Link to the vulnerability of careers and patients.
2. Exhibit responsible self-management.
3. Patients and their families can be empowered to take an active role in their care and facilitate joint decision-making by receiving counseling and education.
4. Show empathy for the patient and your coworkers.
5. Show in clinical treatment that you have an awareness of how psychological, social, and economic variables affect people's health and illnesses.

**Outcomes of Infectious Disease Module**

- A. Knowledgeable
- B. Skillful
- C. Community Health Promoter
- D. Problem-solver
- E. Professional
- F. Researcher
- G. Leader and Role Model

**THEMES FOR INFECTIOUS DISEASE MODULE**

SNO	Theme	Duration
1	Revisit	1 week
2	Immuno-pathogenesis	1 week
3	Diagnostic approach to infection	1 week
4	Pyogenic bacteria I	1 week
5	Pyogenic bacteria II	1 week
6	Pyrexia of unknown origin	1 week
7	Parasitic infections	1 week

**SPECIFIC LEARNING OBJECTIVES THEME WISE**

**THEME 1: REVISIT**

S. No	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>PATHOLOGY</b>				
01	Enlist essential and non-essential components of a typical bacterial cell with their function	Bacterial Structure	Interactive Lecture	BCQ, SEQ, OSPE

<b>02</b>	Classify bacteria on the basis of Gram staining. Differentiate characteristics of gram- positive and gram-negative bacteria Define normal flora. Describe colonization of normal flora. Name the members of normal flora with their appropriate anatomical locations	Classification of bacteria & normal flora (human microbiota)	Interactive Lecture	BCQ, SEQ, OSPE
<b>03</b>	Define acute inflammation Describe the sequence of vascular changes Define exudates and transudate and their mechanism of formation	General features of inflammation & vascular changes	Interactive Lecture	BCQ, SEQ, OSPE
<b>04</b>	Describe the acute inflammatory cells and their functions. Name the various types of chemical mediators and their role Describe the local and general clinical features of acute inflammation	Cellular events of Chemotaxis, phagocytosis	Interactive Lecture	BCQ, SEQ, OSPE
<b>05</b>	Define chronic Inflammation Describe the characteristic features and types of chronic Inflammation Define granuloma, mention a etiological classification of granuloma with examples	Chronic inflammation	Interactive Lecture	BCQ, SEQ, OSPE
<b>06</b>	Outline various methods for transfer of genetic information in bacterium. Describe the phases of bacterial growth.	Bacterial genetics & bacterial growth	Interactive Lecture	BCQ, SEQ, OSPE
<b>07</b>	State the criteria are used in viral classification Describe the characteristics of DNA and RNA viruses Describe structure of virus	Classification & structure of viruses	Interactive Lecture	BCQ, SEQ, OSPE
<b>08</b>	To demonstrate the principle & procedure of Gram's staining	Gram's staining	Practical	BCQ, SEQ, OSPE
<b>PHARMACOLOGY</b>				
<b>01</b>	Describe the classification , mechanism of action & side effects of penicillin's	Beta lactam antibiotics	Interactive Lecture	BCQ, SEQ, OSPE
<b>02</b>	Describe the classification , mechanism of action & side effects of cephalosporin's & other cell wall synthesis inhibitors	Beta lactam antibiotics	Interactive Lecture	BCQ, SEQ, OSPE
<b>COMMUNITY MEDICINE</b>				
<b>01</b>	To define communicable disease and other basic definitions regarding the infectious disease To differentiate between infection, contamination, pollution, infestation To classify the communicable disease To discuss the infectious disease control programs in Pakistan	Introduction to communicable disease and basic concept and infectious disease control program in Pakistan	Interactive Lecture	BCQ, SEQ, OSPE

<b>02</b>	To understand the chain of infection To describe the various route of transmission of infectious diseases To describe the preventive and control measures of infectious diseases	Chain of transmission & Its role in infectious disease control	Interactive Lecture	BCQ, SEQ, OSPE
<b>03</b>	To discuss the steps of investigation of epidemics (Epidemic endemic, pandemic and steps of investigation of epidemics, explain with examples)	Steps of investigation of epidemics	Interactive Lecture	BCQ, SEQ, OSPE
<b>FORENSIC MEDICINE</b>				
<b>01</b>	Define Forensic Medicine and Toxicology and its various branches Discuss the importance and utility of Forensic	INTRODUCTION Forensic Medicine	Interactive Lecture	BCQ, SEQ, OSPE

## THEME 2: IMMUNO-PATHOGENESIS

SR. NO.	OBJECTIVES	TOPICS	TEACHING STRATEGY	ASSESSMENT
<b>PATHOLOGY</b>				
<b>01</b>	Differentiate b/w true pathogens, opportunists and commensals List the routes of transmission of infection Describe colonization, pathogenesis, spread and excretion of infectious agents.	Bacterial pathogenesis I	Interactive Lecture	BCQ, SEQ, OSPE
<b>02</b>	Differentiate b/w true pathogens, opportunists and commensals List the routes of transmission of infection Describe colonization, pathogenesis, spread and excretion of infectious agents.	Bacterial pathogenesis II	Interactive Lecture	BCQ, SEQ, OSPE
<b>03</b>	Define viral pathogenesis. Describe the effect of virus infection on host cell. Explain specific and non-specific defense mechanism against viral infection.	Viral pathogenesis	Interactive Lecture	BCQ, SEQ, OSPE
<b>04</b>	Describe host defense mechanism against bacteria. Distinguish between passive & active adaptive immunity. To discuss the failure of host defense against infections.	Host defense against bacterial infection	Interactive Lecture	BCQ, SEQ, OSPE
<b>05</b>	Distinguish between innate and acquired immunity Describe the role of interferons, natural killer cells, cytotoxic T cell in viral diseases Explain how interferons limit cell-to-cell spread of viruses.	Host defense against viral infection	Interactive Lecture	BCQ, SEQ, OSPE

06	To demonstrate the principle & procedure of Acid-fast staining.	Acid fast staining	Practical	BCQ, SEQ,
<b>PHARMACOLOGY</b>				
01	Describe classification, mechanism of action & side effects of anti-viral drugs	Anti-viral drugs -1	Interactive Lecture	BCQs, SEQs
02		Anti-viral drugs-2	Interactive Lecture	BCQs, SEQs
<b>COMMUNITY MEDICINE</b>				
01	To define arthropods and classify the wing and wingless insects. To discuss the Common disease transmitted by wing and wingless insects To discuss the Control and preventive measures of wing and wingless insects of medical importance To know Insecticides and their public health importance	Arthropods and their Public Health Importance	Interactive Lecture	BCQ, SEQ, OSPE
02	To discuss the problem statement of malaria To define the malaria and vectors of malaria To describe the epidemiology of Malaria To discuss the preventive and control measures of malaria	Epidemiology & control measure of Malaria	Interactive Lecture	BCQ, SEQ, OSPE
<b>FORENSIC MEDICINE</b>				
01	Describe the composition, functions of Pakistan Medical & Council at present and its role in medical education Define Privileges & obligations of registered medical practitioners	PM & DC	Interactive Lecture	BCQ, SEQ, OSPE
02	Define consent, types of consent & roles of consent in Medical Examination Describe Professional misconduct (Infamous conduct) Discuss Criteria for giving valid consent Define Doctrine of informed consent (Rule of full	Consent	Interactive Lecture	BCQ, SEQ, OSPE

### THEME 3: DIAGNOSTIC APPROACH TO INFECTION

SR. NO.	OBJECTIVES	TOPICS	TEACHING STRATEGY	ASSESSMENT
<b>PATHOLOGY</b>				
01	Describe the steps of viral replication Explain mode of replication of various RNA and DNA viruses.	Viral Replication	Interactive Lecture	BCQ, SEQ, OSPE

<b>02</b>	Compare and contrast the various methods used to diagnose bacterial diseases Describe various microscopic and culture techniques used for diagnosis Discuss molecular techniques in diagnosis of infectious diseases.	Laboratory diagnosis of bacterial diseases	Interactive Lecture	BCQ, SEQ, OSPE
<b>03</b>	Compare and contrast the various methods used to diagnose viral diseases Describe various microscopic and culture techniques used for diagnosis Discuss molecular techniques in diagnosis of infectious diseases.	Laboratory diagnosis of viral diseases	Interactive Lecture	BCQ, SEQ, OSPE
<b>04</b>	Define healing, repair and regeneration Describe the mechanisms of primary and secondary wound heal	Healing & Repair -1	Interactive Lecture	BCQ, SEQ, OSPE
<b>05</b>	Distinguish the differences between healing by first and secondary intention List the local and general factors influencing healing List the complications of wound healing	Healing & Repair -2	Interactive Lecture	BCQ, SEQ, OSPE
<b>06</b>	Distinguish between fungal & bacterial cell contrast sexual & asexual reproduction of fungi. Define dimorphism Describe pathogenesis, fungal toxins and lab diagnosis of fungi	Basic Mycology	Interactive Lecture	BCQ, SEQ, OSPE
<b>07</b>	Classify culture media Enlist various ingredients used for making culture media Demonstrate selective and biochemical test media	Culture Media	Practical	BCQ, SEQ, OSPE
<b>COMMUNITY MEDICINE</b>				
<b>01</b>	To define the Leishminasis and its types To understand the epidemiology of Leishminasis To discuss the preventive and control measures of Leishminasis	Epidemiology & control measure of Leishmaniasis	Interactive Lecture	BCQ, SEQ, OSPE

<b>02</b>	To discuss the problem statement of influenza To understand the epidemiology of influenza To define and describe the mode of transmission of influenza To discuss the preventive and control measures of influenza	Epidemiology & control measure of Influenza	Interactive Lecture	BCQ, SEQ, OSPE
<b>FORENSIC MEDICINE</b>				
<b>01</b>	Define Injury, Hurt, Wound, Assault and Battery? Classify Injuries Describe Blunt weapon injuries- Abrasions, Bruises	<b>TRAUMATOLOGY</b> Injury	Interactive Lecture	BCQ, SEQ, OSPE
<b>02</b>	Describe Lacerated wounds, types, mechanism of production and medico legal significance Describe Sharp weapon injuries- Incised wounds, stab wounds with medico legal significance	<b>TRAUMATOLOGY</b> Wound	Interactive Lecture	BCQ, SEQ, OSPE
<b>03</b>	Discuss the general treatment / management of poisoning. Discuss the duties of doctor in a case of poisoning. Discuss the forensic aspects of poisons.	Management of Poison	Practical	BCQ, SEQ, OSPE

#### THEME 4: PYOGENIC BACTERIA I

SR. NO.	Objectives	Topics	Teaching Strategy	Assessment
<b>PATHOLOGY</b>				
<b>01</b>	Enlist the species of Staphylococci Enlist the virulence factors & toxins. Describe pyogenic and toxin mediated diseases caused by staphylococcus aureus. Discuss lab diagnosis of staphylococci	Staphylococci	Interactive Lecture	BCQ, SEQ
<b>02</b>	Classify medically important streptococci Describe toxins, enzymes & hemolysins produced by streptococci. Discuss their pyogenic, toxigenic & post streptococcal diseases. Describe the lab diagnosis of	Streptococci	Interactive Lecture	BCQ, SEQ

	streptococci.			
<b>03</b>	Describe morphology, pathogenesis, clinical features and lab diagnosis of Pneumococcus.	Pneumococci	Interactive Lecture	BCQ, SEQ
<b>04</b>	Enlist species of Neisseria . Describe their morphology, pathogenesis and Laboratory diagnosis.	Neisseria	Interactive Lecture	BCQ, SEQ
<b>05</b>	Define Diphtheria & Listeriosis. Describe important properties, transmission, pathogenesis of diphtheria & Listeria. Discuss the laboratory diagnosis of Corynebacterium diphtheria & Listeria monocytogens.	Corynebacterium diphtheria & Listeria monocytogens	Interactive Lecture	BCQ, SEQ
<b>06</b>	Describe various microscopic and culture techniques used for diagnosis	Lab diagnosis of gram positive & negative cocci.	Practical	BCQ, SEQ, OSPE
<b>PHARMACOLOGY</b>				
<b>01</b>	Describe classification, mechanism of action & side effects of Aminoglycosides	Antibiotics-1	Interactive Lecture	BCQ, SEQ, OSPE
<b>02</b>	Describe classification, mechanism of action & side effects of tetracyclines& chloromphenicol	Antibiotics-2	Interactive Lecture	BCQ, SEQ, OSPE
<b>03</b>	Describe classification, mechanism of action & side effects of macrolides	Antibiotics-3	Interactive Lecture	BCQ, SEQ, OSPE
<b>04</b>	Describe classification, mechanism of action & side effects flouroquinolones	Antibiotics-4	Interactive Lecture	BCQ, SEQ, OSPE
<b>05</b>	Describe classification, mechanism of action & side effects of sulfonamides & trimethoprim	Antibiotics-5	Interactive Lecture	BCQ, SEQ, OSPE
<b>06</b>	Construct a prescription for a patient with acute tonsillitis	Acute Tonsillitis	Practical	BCQ,OSPE
<b>COMMUNITY MEDICINE</b>				
<b>01</b>	To define the yellow fever To understand the epidemiology of yellow fever To discuss the importance of yellow fever to Pakistan To discuss the preventive and control measures of yellows fever	Epidemiology & control measure of yellow fever	Interactive Lecture	BCQ, SEQ, OSPE



<b>02</b>	To discuss the problem statement of chicken pox To define chickenpox and describe the mode of transmission of chickenpox To understand the epidemiology of chickenpox To discuss the preventive and control measures of chickenpox	<b>DROPLET INFECTIONS:</b> Epidemiology & control measure of Chickenpox	Interactive Lecture	BCQ, SEQ, OSPE
<b>03</b>	To discuss the problem statement of Measles, Mumps, Rubella To understand the epidemiology of Measles, Mumps, Rubella To define and describe the modes of transmission of Measles, Mumps, Rubella To describe diagnosis of mumps. To discuss the preventive and control measures of Measles, Mumps, Rubella	Epidemiology & control measure of Measles, Mumps, Rubella	Interactive Lecture	BCQ, SEQ, OSPE
<b>FORENSIC MEDICINE</b>				
<b>01</b>	Define & classify Qisas and Diyat Act with interpretation of injuries accordingly	<b>TRAUMATOLOGY</b> Qisas & Diyat	Interactive Lecture	BCQ, SEQ, OSPE
<b>02</b>	Describe Complete and partial identification Describe Identification in living and dead bodies with examples Describe Determination of race Determine Sex and intersex states	<b>PERSONAL IDENTITY –I</b> Identification	Interactive Lecture	BCQ, SEQ, OSPE
<b>03</b>	Define food poisoning Describe what causes of food poisoning Explain the effects of food poisoning	Food Poisoning	Practical	BCQ, SEQ, OSPE

### THEME 5: PYOGENIC BACTERIA II

S. No	Objectives	Topics	Teaching Strategy	Assessment
<b>PATHOLOGY</b>				
<b>01</b>	Outline morphology, pathogenesis, clinical features and lab diagnosis of Bacillus	Bacillus	Interactive Lecture	BCQ, SEQ, OSPE
<b>02</b>	Classify clostridia Describe morphology, pathogenesis, clinical features and lab diagnosis of	Clostridia	Interactive Lecture	BCQ, SEQ, OSPE

	Clostridia			
<b>03</b>	Enlist pathogenic strains of E. coli Describe morphology, virulence factors, cultural characteristics and Lab diagnosis of E.coli and Klebsiella	E.coli & Klebsiella	Interactive Lecture	BCQ, SEQ, OSPE
<b>04</b>	Classify different strains of Salmonella & Shigella Describe antigenic structure and virulence factor of salmonella & Shigella Discuss lab diagnosis of Salmonella & shigella	Salmonella & Shigella	Interactive Lecture	BCQ, SEQ, OSPE
<b>05</b>	Enlist various species of proteus and pseudomonas Describe pathogenesis and lab diagnosis	Proteus & Pseudomonas	Interactive Lecture	BCQ, SEQ, OSPE
<b>06</b>	Describe various microscopic and cultural characteristics used for diagnosis	Lab diagnosis of gram positive bacilli (rods).	Practical	BCQs, SEQs, OSPE
<b>MEDICINE</b>				
<b>01</b>		Typhoid fever	Interactive Lecture	BCQ, SEQ, OSPE
<b>02</b>		Gastroenteritis / Diarrhea / Dysentery	Interactive Lecture	BCQ, SEQ, OSPE
<b>COMMUNITY MEDICINE</b>				
<b>01</b>	To discuss the problem statement of typhoid fever To define the typhoid fever To understand the epidemiology of typhoid fever To discuss the preventive and control measures of Typhoid fever	Epidemiology & control measure of Typhoid	Interactive Lecture	BCQ, SEQ, OSPE
<b>02</b>	To discuss the problem statement of Whooping Cough To understand the epidemiology of Whooping Cough To define Whooping Cough and describe the mode of transmission of Whooping	Epidemiology & control measure of Whooping Cough	Interactive Lecture	BCQ, SEQ, OSPE
	<b>Cough</b>			
	To discuss the preventive and control measures of Whooping Cough			

<b>03</b>	To discuss the problem statement of amoebiasis To Know public health importance of amoebiasis To discuss the Important factors of Agent/Host/Environment responsible for occurrence of amoebiasis To discuss the preventive and control measures of amoebiasis	Epidemiology and control measure of Amoebiasis	Interactive Lecture	BCQ, SEQ, OSPE
<b>FORENSIC MEDICINE</b>				
<b>01</b>	Describe Parameters of identification	Parameter of Identification	Interactive Lecture	BCQ, SEQ,
<b>02</b>	Determine Age estimation in medico legal cases by General examination Discuss Medico legal importance of age	Age	Interactive Lecture	BCQ, SEQ, OSPE
<b>03</b>	Classify corrosive poisons. Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to: Caustics Inorganic – sulphuric, nitric, and hydrochloric acids; Organic- Carbolic Acid (phenol), Oxalic and acetylsalicylic acids	Corrosives	Practical	BCQ, SEQ,

#### THEME 6: PYREXIA OF UNKNOWN ORIGIN

S. NO	OBJECTIVES	TOPICS	TEACHING STRATEGY	ASSESSMENT
<b>PATHOLOGY</b>				
<b>01</b>	Describe the important properties, transmission, pathogenesis, clinical findings and lab diagnosis of wall less & filamentous bacteria	Mycoplasma & actinomycetes	Interactive Lecture	BCQs, SAQs, OSPE
<b>02</b>	Classify the obligate intracellular parasite -Describe the important properties, transmission, pathogenesis, clinical findings and lab diagnosis of Chlamydia & Rickettsia	Chlamydia & Rickettsia	Interactive Lecture	BCQs, SAQs, OSPE
<b>03</b>	Classify the medically important Spirochetes. -Describe the important properties, transmission & clinical findings. -Discuss the lab diagnosis of Syphilis	Spirochetes (Treponema, Borrelia, Leptospira)	Interactive Lecture	BCQs, SAQs, OSPE

<b>04</b>	Classify Herpes virus Describe pathogenesis, clinical presentation and lab diagnosis of herpes virus	Herpes Viruses	Interactive Lecture	BCQs, SAQs, OSPE
<b>05</b>	Define Dengue fever Describe vector, life cycle and clinical manifestation of dengue virus Discuss mode of transmission, pathogenesis and clinical feature of polio virus	Dengue & polio virus	Interactive Lecture	BCQs, SAQs, OSPE
<b>06</b>	Describe various microscopic and culture techniques used for diagnosis	Lab diagnosis of gram negative bacilli (rods)	Practical	BCQs, SEQs, OSPE
<b>PHARMACOLOGY</b>				
<b>01</b>	Describe the different drug options for treatment of dengue fever	Anti-viral drugs for dengue fever	Interactive Lecture	BCQs, SAQs,
<b>02</b>	Construct a prescription for a patient with Malaria	Malaria	Practical	BCQs,
<b>COMMUNITY MEDICINE</b>				
<b>01</b>	To know the burden of hookworm infestation To describe the epidemiological determinants related to agent/host/environment To discuss the various preventive and control measures of hookworm infestation	Epidemiology and control measure of hookworm infestation	Interactive Lecture	BCQs, SAQs, OSPE
<b>02</b>	To discuss the problem statement of Meningitis To understand the epidemiology of Meningitis To define Meningitis and describe the mode of transmission of Meningitis To discuss the preventive and control measures of Meningitis	Epidemiology & control measure of Meningitis	Interactive Lecture	BCQs, SAQs, OSPE
<b>03</b>	To discuss the problem statement of dengue fever To discuss the type of dengue fever To understand the epidemiology of dengue fever To discuss the preventive and control measures of dengue fever	Epidemiology & control measure of Dengue Fever	Interactive Lecture	BCQ, SEQ, OSPE
<b>FORENSIC MEDICINE</b>				

<b>01</b>	Define Forensic Odontology & its medico legal importance	Odontology	Interactive Lecture	BCQs, SAQs, OSPE
<b>02</b>	Define Forensic Radiology & its medico legal importance	Radiology	Interactive Lecture	BCQs, SAQs, OSPE
<b>03</b>	Describe Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination	Chlorinated Comp	Interactive Lecture	BCQs, SAQs, OSPE
<b>MEDICINE</b>				
<b>01</b>		Syphilis	Interactive Lecture	BCQs, SAQs,
<b>02</b>		Dengue Fever	Interactive Lecture	BCQs, SAQs,
<b>RADIOLOGY</b>				
<b>01</b>	Describe briefly the Hazards of imaging and interpreting images	Radiological Hazards	Interactive Lecture	BCQs,

### THEME 7: PARASITIC INFECTIONS

S. NO	OBJECTIVES	TOPICS	TEACHING STRATEGY	ASSESSMENT
<b>PATHOLOGY</b>				
<b>01</b>	Describe structure of HIV. Discuss clinical stages of HIV infection Outline opportunistic infection in late stage of AIDS	HIV	Interactive Lecture	BCQs, SAQs, OSPE
<b>02</b>	Describe the life cycle and important properties of Toxoplasma. Relate the pathogenesis to the clinical features and lab Diagnosis of Toxoplasmosis.	Toxoplasma	Interactive Lecture	BCQs, SAQs, OSPE
<b>03</b>	Classify the medically important trematodes. Describe the life cycle, clinical features & lab diagnosis	Trematodes (flukes)	Interactive Lecture	BCQs, SAQs, OSPE
<b>04</b>	Classify the medically important tissue Nematodes. Describe their important properties Clinical findings and laboratory diagnosis.	Tissue Nematodes (wuchereria, Onchocerca, Loa, Dracunculus)	Interactive Lecture	BCQs, SAQs, OSPE

05	Classify & explain the important properties, transmission, pathogenesis, clinical findings and lab diagnosis of cutaneous, systemic and opportunistic fungi.	Cutaneous, systemic and opportunistic mycoses.	Interactive Lecture	BCQs, SAQs, OSPE
06	Define Sterilization and Disinfection. List various methods used for sterilization and disinfection	Sterilization & disinfection	<b>Practical</b>	BCQ, SEQ
<b>PHARMACOLOGY</b>				
01	Describe the antiviral drugs used for treatment of HIV with their mechanisms and side effects.	Antiretroviral drugs	Interactive Lecture	BCQs, SAQs,
02	Classify anti helminths drugs with their mechanism and side effects	Anti-parasitic drugs	Interactive Lecture	BCQs, SAQs,
<b>COMMUNITY MEDICINE</b>				
01	To discuss the problem statement of Sexually Transmitted disease & HIV/AIDS To define Sexually Transmitted disease & HIV/AIDS To understand the epidemiology of Sexually Transmitted disease & HIV/AIDS To discuss the preventive and control measures of Sexually Transmitted disease & HIV/AIDS	Epidemiology & control measure of Sexually Transmitted disease (STDs) & HIV/AIDS	Interactive Lecture	BCQ, SEQ, OSPE
<b>FORENSIC MEDICINE</b>				
01	Describe Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to hydrogen cyanide & derivatives	<b>Veg Poison:</b> Hydrocyanic acid & Cyanides	Practical	BCQs, SAQs, OSPE
02	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Arsenic, lead, mercury, copper, iron, cadmium and thallium.	<b>Metallic Poisons:</b> Arsenic, Mercury poisoning & Lead Poisoning	Practical	BCQs, SAQs, OSPE
<b>MEDICINE</b>				
01		AIDS	Interactive Lecture	BCQs, SAQs,
<b>RADIOLOGY</b>				
01	Describe briefly the wasteful use of radiology	Radiological waste	Interactive Lecture	BCQs,

### TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>PROFESSIONALISM AND BEHAVIORAL SCIENCES</b>						
<b>Attributes of professionalism</b>	Differences between empathy and sympathy	Discriminate between empathy and sympathy	group discussion/ Role play	Infection and inflammation	2	MCQ,
<b>RESEARCH</b>						
<b>Purpose and Process of Research</b>	Steps of research process	Explain the steps involved in the research process	Lecture	Infection and inflammation	1	MCQ
<b>Identifying study question</b>	Brainstorming for identifying a research topic. Selecting a general topic Narrowing from a broad general topic to a more specific focused area of research	Develop a list and mind map of possible research topics	Lecture/SGD	Infection and inflammation	2	Assignment
<b>Literature review</b>	Types of literature review					
	Strategies of literature review					
	Search engines and their limitations such as google, google scholar, PubMed Databases for thesis, abstracts, full text article Difference between the various sources of information Selecting information for academic writing	Select a single topic of interest from the list Review the literature	Lecture/SGD Small group discussion	Infection and inflammation	2	Assignment
	Academic reading and writing					
	Develop an evidence table					

	Formulate / refine research question from gaps from evidence table					
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### CLINICAL SCIENCES SUBJECTS

#### INFECTIOUS DISEASE MODULE

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning strategy
1.	<b>ANAESTHESIA</b>  Drugs used in Anesthesia	Intravenous Anesthetic agents	1	Lecture
		Inhalational Anesthetic agents	1	Lecture
		Muscle relaxation and artificial ventilation during general anesthesia	1	Lecture
		Monitoring and care of patient during general anesthesia	2	Skill Session
2.	<b>CRITICAL CARE</b>  Infectious Diseases	Fever in an ICU patient	1	Lecture
		Use of antimicrobials for treatment of infectious diseases in ICU	1	Lecture
		Viral Hemorrhagic Fevers and viral infections	1	Lecture
		Severe sepsis	1	Lecture
3.	<b>ORTHOPAEDICS &amp; TRAUMA</b>	Nerve repair	1	Lecture
		Tendon repair	1	Lecture
		Osteotomies	1	Lecture
		Arthrodesis	1	Lecture
4.	<b>UROLOGY</b>  UTI and Urinary calculi	Investigations & management of Kidney Stones	2	SGD
		Pathogenesis, etiology and investigation of pyonephritis	1	Lecture
		Investigations and management of UTI	1	Lecture
		Investigations and management of Cystitis	1	Lecture
5.	<b>FAMILY MEDICINE</b>  Care of Elderly	Falls Assessments	1	Lecture
		Poly Pharmacy	1	Lecture
		Palliative care	1	Lecture
		Pain and symptom control	1	Lecture
		Psychosocial Support	1	Lecture

#### CLINICAL ROTATION SCHEDULE

<b>Duration</b>	9 weeks	11 weeks	8 weeks	8 weeks
<b>Disciplines</b>	Medicine	Surgery	Gynae/Obs	Paeds
<b>Total hours*</b>	117	143	104	104

\* 2.6 Clinical rotation hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.



## TEACHING HOURS ALLOCATION

S. No	Subject	Hours	Practical Hours
1	Pathology	38	14
2	Pharmacology	12	4
3	Forensic medicine	14	10
4	Community medicine	17	-
5	Medicine	5	-
6	CBL (Pathology)*	14	-
7	CBL (Pharmacology)*	14	-
8	Radiology	2	-
9	Anesthesia	5	-
10	Critical Care	4	-
11	Orthopaedics & Trauma	4	-
12	Urology	5	-
13	Family Medicine	5	-
<b>Total hours</b>		<b>139</b>	<b>28</b>

\*Minimum 2 hours are allotted for each CBL session per Module

S. No	Tagged Subject	Teaching Hours
1	Professionalism and Behavioral Sciences	2
2	Research	5
<b>Total hours</b>		<b>7</b>

## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

- Student must report to examination hall/venue, in time for smooth conduction of the exams.

- No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
- No students will be allowed to sit in exam without College ID Card, and Lab Coat
- Students must sit according to their roll numbers mentioned on the seats.
- Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
- Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
- Students must not possess any written material or communicate with their fellow students
- Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
- **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### **ASSESSMENT**

#### **Internal: Total 10% (20 marks)**

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

#### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

### **METHODS OF ASSESSMENT**

#### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.

- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

#### **Short Essay Questions (SEQs):**

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

#### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

#### **ASSIGNMENTS**

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## WEEKLY TESTS

The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle. The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.

It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.

Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

## POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD  
Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class  
PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail or Non gradable

## ASSESSMENT BLUEPRINT

### INFECTIOUS DISEASE MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

### LEARNING RESOURCES

The learning resources for the educational contents of BDS program are available for the students which assist learners to achieve the outcomes and by focusing on educational content. In addition; the names of the books for each subject as a learning resources is available with the educational content of the same subject.

Following learning resources can be used by the undergraduates;

- Books
- Evidence based articles from journals
- Digital library to search the material for self-directed learning
- Video Tapes
- Displays
- Models
- Phantom Heads
- Printed Notes
- Case based scenarios'
- Community Visits

#### Recommended Books THIRD YEAR MBBS

General Pathology	Parasitology	Pharmacology	Microbiology
Robbins & Cotran Pathologic Basis Of Disease Vinay Kumar, Abul K. Abbas, Jon C. Aster 10 <sup>th</sup> Edition Brs Pathology (Board Review Series), Arthur S.	<b>Parasitology P:rotozoology And Helminthology K.D. Chatterjee, 13<sup>th</sup> Edition</b>	1. Lippincott Illustrated Reviews: Pharmacology Karen Whalen, Carinda Feild, Rajan Radhakrishnan <b>Pharmacology: Examination &amp; Board Review, Anthony J. Trevor, Bertram G. Katzung, Marieke</b>	<b>Review Of Medical Microbiology &amp; Immunology Warren E. Levinson, 14<sup>th</sup> Edition</b>

<p>Schneider, Philip A. Szanto, Schneider, Philip A. Szanto. 5th<sup>th</sup> Edition</p>		<p>Knudering-Hall 12<sup>th</sup> Edition</p>	
<p>Community Medicine</p>	<p>Forensic Medicine And Toxicology</p>		
<p>Park's Textbook Of Preventive And Social Medicine K. Park 26<sup>th</sup> Edition</p> <p>Text Book Of Community Medicine &amp; Public Health Ilyas Shah Ansari 8<sup>th</sup> Edition</p>	<p>1. Principles And Practice Of Forensic Medicine Naseeb Awan 2<sup>nd</sup> Edition</p> <p>2. Parikh's Textbook Of Medical Jurisprudence, Forensic Medicine And Toxicology Parikh, C.K 6<sup>th</sup> Edition</p> <p>3. Simpson's Forensic Medicine Knight B 11<sup>th</sup> Edition</p> <p>4. Taylor's Principles And Practice Of Medical Jurisprudence Taylor Volume 1</p>		



**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you? Y  N
- B. The course contents met with your expectations  
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned  
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with  
l. Too few examples 5. Adequate examples
- E. The level of the course was  
l. Too low 5. Too high
- F. The course contents compared with your expectations  
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices  
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?  
l. Not at all 5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand  
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used  
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate  
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful  
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes  No

F. Please give overall rating of the course

90% - 100% (    )

80% - 90% (    )

70% - 80% (    )

60% - 70% (    )

50% - 60% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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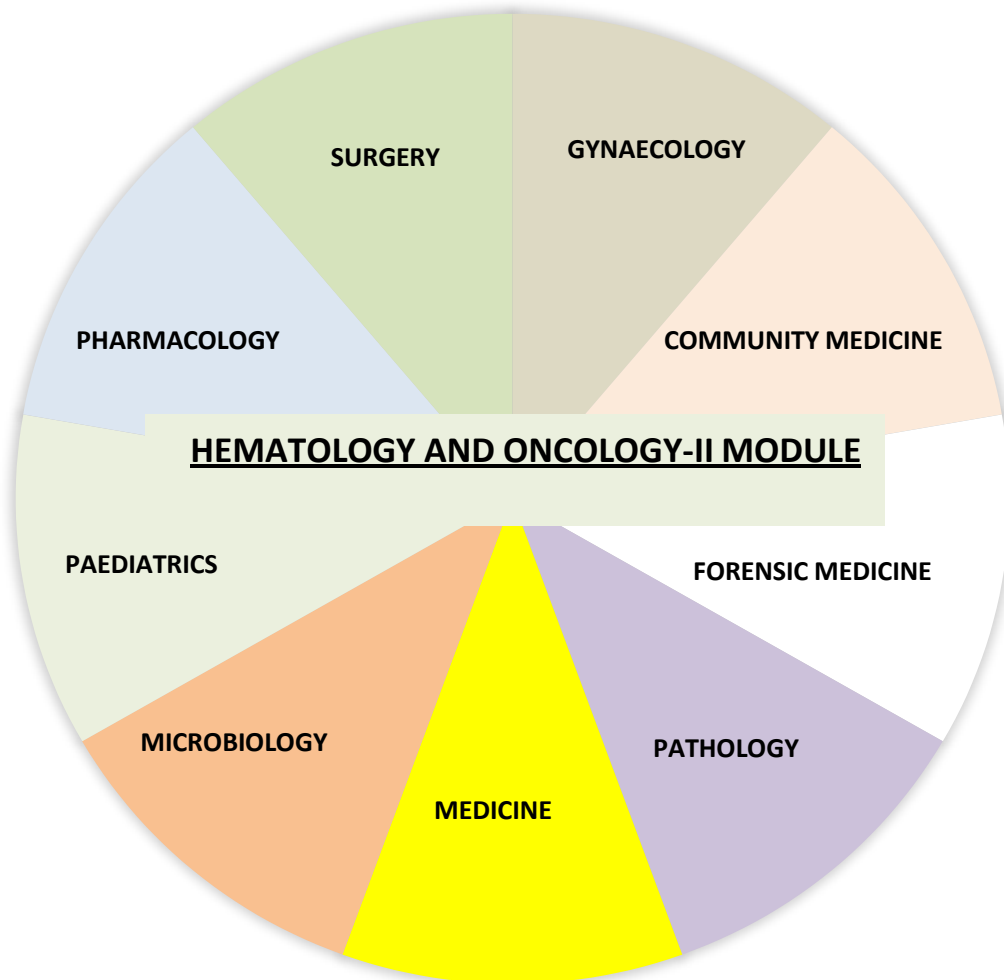


## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as CVS-II, Endocrine-II, Git and Liver-II, Hematology and oncology-II, Infectious Disease and Respiratory-II modules which link basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF HEMATOLOGY AND ONCOLOGY-II MODULE



## MODULE OVERVIEW

### HEMATOLOGY AND ONCOLOGY-II MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Third professional
<b>Duration</b>	6 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

### HEMATOLOGY AND ONCOLOGY-II MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Dr. Bhawani Shankar	Pathology	Associate Professor
2.	Abid Laghari	Pharmacology	Lecturer
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### Module objectives:

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

#### Achievement of objectives:

- ✚ Focuses on information pertaining to examination policy, rules and regulations.

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences

- Clinical Rotations
- Skills session
- Practicals
- Self-Directed Study

- **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to pharmacology, microbiology, forensic medicine, and community medicine have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

Welcome to Module II on Hematology. The basic knowledge of cancer, chemotherapeutic medicines, and preventive measures is the goal of this module. In order to address a variety of hematological and immuno-hematological problems in adults and children, the module is also intended to give students a foundational understanding of hematological diseases. Students will gain knowledge on taking medical histories, examining patients, interpreting laboratory test results, differential diagnosis, treatment plans, and prognostic values for various illnesses.

### RATIONALE

Understanding blood, immunity, and inflammation is crucial because blood maintains homeostasis, supplies micronutrients, delivers oxygen to tissues, and activates the body's defense mechanisms against pathogens and disorders. These processes are encountered on a daily basis. Students must always review their prior knowledge of physiology, histology, and biochemistry in order to gain the fundamental knowledge needed to deal with patients who have hematological disorders. This includes taking histories, examining patients, and learning about sampling techniques, pertinent laboratory tests, their interpretations, treatment plans, and prognostic values of various hematological, immunological, and immuno-haematological disorders of adults and children.

## LEARNING OBJECTIVES

### General Learning Outcomes:

After the completion of this module, the students should be able to:

6. To define neoplasia and explain the pathophysiology that surrounds it.
7. To explain the principles underlying cancer diagnosis and treatment
8. Sort the consequences of anemia on an adult's or child's physique (presentation).
9. Analyze the significance of innate immunological and hematological abnormalities (enzyme deficiencies, hemoglobinopathies, and RBC membrane defects).
10. Determine the underlying cause of hemostatic problems in both adults and children: platelets and coagulation disorders
11. To diagnose hemolytic illness in a newborn, obtain a history, do an examination, and interpret basic lab results (RH, ABO, minor group incompatibility).
12. Examine the patient and take their history if they have a fever, lymphadenopathy, or hepato splenomegaly.
13. Analyze simple laboratory results to identify lymphomas and leukemia.
14. Identify and establish a correlation between the non-neoplastic diseases of WBCs and history and examination.
15. Identify and establish a correlation between the non-neoplastic diseases of WBCs and history and examination.
16. Identify the clinical signs and link them with the lab results and history of myeloproliferative diseases, such as polycythemia and CML.
17. Determine how pharmacology—the study of drugs—relates to bleeding problems and anemia.
18. Role of a healthy diet in preventing blood diseases in the population.
19. Identify the typical causes of anemia that are common in our community.

### Knowledge / Cognitive Domain

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

4. To explain neoplasia, including its genesis, pathophysiology, molecular basis, cancer diagnosis, and treatment.
5. Describe the clinical manifestations, pathogenesis, and diagnostic methodology of the several red cell diseases.
6. Describe the etiology, clinical manifestations, and method of diagnosis of bleeding diseases.
7. To explain the newborn's hemolytic illness (RH, ABO, minor group incompatibility).

8. To explain the biology and etiology of hepatosplenomegaly and lymphadenopathy
9. help explain the variations among hematological cancers.
10. to explain graft rejection and transplantation.
11. to explain what blood parasites are.
12. Determine how pharmacology—the study of drugs—relates to bleeding problems and anemia.
13. To explain the immunomodulators and immunosuppressants involved in transplantation
14. A healthy diet plays a key role in preventing blood diseases in the population.
15. Identify the typical causes of anemia that are common in our community.

**Skills / Psychomotor Domain:**

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

1. Completing actual tasks in an orderly and secure manner as directed.
2. Make accurate observations and note them down.
3. Patient's general physical examination.
4. Analysis of cancer diagnostic test results.
5. Interpretation of lab results in order to get an anemia diagnosis.
6. Interpretation of lab results in order to get an anemia diagnosis.
7. Carry out compatibility testing and manual blood grouping using the tube method.
8. Interpretation of the immunohistochemical and morphological characteristics of non-Hodgkin and Hodgkin lymphomas.
9. Interpretation of test results in the diagnosis of leukemia, both acute and chronic.

**Attitude / Affective Domain:**

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

1. Respect oneself and one's peers, both when providing and receiving comments.
2. To show patients compassion and understanding.
3. Counseling for hereditary anemias to patients and their families.
4. Counseling families for thalassemia prenatal diagnosis.
5. Providing family and patient counseling regarding hematological malignancies.
6. Develop your ability to communicate while keeping a sense of duty to your patients.
7. Showcase appropriate laboratory procedures.

**Outcomes of Hematology and Oncology-II Module**

1. Knowledgeable
2. Skillful
3. Community Health Promoter
4. Problem-solver
5. Professional
6. Researcher
7. Leader and Role Model

**THEMES FOR HEMATOLOGY AND ONCOLOGY-II MODULE**

SNO	Themes	Duration
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1	<b>Oncology</b>	1 week
2	<b>Palloriness (Anaemia)</b>	1 week
3	<b>Hemostatic abnormalities and blood transfusion</b>	1 week
4	<b>Lymphadenopathy</b>	1 week
5	<b>Haematological Malignancies</b>	1 week
6	<b>Immunological disorders &amp; Transplantation</b>	1 week

**SPECIFIC**

**LEARNING OBJECTIVES THEME WISE  
THEME 1: ONCOLOGY**

<b>PATHOLOGY</b>				
<b>S. NO</b>	<b>LEARNING OBJECTIVES</b>	<b>TOPIC</b>	<b>TEACHING STRATEGY</b>	<b>ASSESSMENT</b>
01	<ul style="list-style-type: none"> <li>Describe the definition of neoplasia.</li> <li>Describe the nomenclature</li> </ul>	<u>Haem-S2-Path-1</u> NEOPLASIA	Interactive Lecture	BCQs, SEQs, Structured Viva
02	<ul style="list-style-type: none"> <li>To describe the Characteristic</li> <li>To know Pathways of spread, seeding, lymphatic and haematogenous spread</li> </ul>	<u>Haem-S2-Path-2</u> CHARACTERISTIC FEATURES OF TUMOR	Interactive Lecture	BCQs, SEQs, Structured Viva
03	<ul style="list-style-type: none"> <li>Normal cell cycles and fundamental principal of cancer regarding cycle</li> <li>Essential alterations in malignant transformation</li> <li>Steps of cell proliferation Protooncogenes and growth factors and their receptors</li> </ul>	<u>Haem-S2-Path-3</u> MOLECULAR BASIS OF CANCER -I	Interactive Lecture	BCQs, SEQs, Structured Viva
04	<ul style="list-style-type: none"> <li>Two-hit hypothesis of Knudson</li> <li>Tumor suppressor genes</li> <li>Cellular changes in tumor cells</li> <li>DNA repair defects</li> <li>Homologous recombination of tumor cells</li> <li>Development of sustained angiogenesis</li> </ul>	<u>Haem-S2-Path-4</u> MOLECULAR BASIS OF CANCER -II	Interactive Lecture	BCQs, SEQs, Structured Viva
05	<ul style="list-style-type: none"> <li>To discuss Epidemiology of cancers</li> <li>To discuss Different types</li> <li>To discuss the Mechanism of action of radiation carcinogen</li> </ul>	<u>Haem-S2-Path-5</u> CARCINOGENIC AGENTS (Radiation Carcinogenesis)	Interactive Lecture	BCQs, SEQs, Structured Viva
06	<ul style="list-style-type: none"> <li>To discuss the Mechanism of action of chemical &amp; viral carcinogen</li> </ul>	<u>Haem-S2-Path-6</u> CARCINOGENIC AGENTS (Chemical & Viral Carcinogenesis)	Interactive Lecture	BCQs, SEQs, Structured Viva

07	<ul style="list-style-type: none"> <li>To discuss Clinical features of cancer.</li> <li>To discuss Grading and staging of cancer.</li> <li>To discuss diagnostic methods used for Cancer.</li> </ul>	<u>Haem-S2-Path-7</u> Diagnostic approach of Neoplasia	Practical	BCQs, SEQs, Structured Viva
08	<ul style="list-style-type: none"> <li>Classify the tumor Viruses</li> <li>Describe the role of tumor viruses in malignant transformation.</li> <li>Discuss the mechanism involved in carcinogenesis.</li> </ul>	<u>Haem-S2-Micb-1</u> Tumor Viruses	Interactive Lecture	BCQs, SEQs, Structured Viva
<b>PHARMACOLOGY</b>				
09	<ul style="list-style-type: none"> <li>Classify the Anticancer Drugs.</li> <li>Describe the mechanism of action, indication, adverse effects, drug-drug interactions.</li> </ul>	<u>Hem2-S2-Pharm-1</u> Anti-cancer Drugs-I	Interactive Lecture	BCQs, SEQs, Structured Viva
10	<ul style="list-style-type: none"> <li>Describe the mechanism of resistance of Anticancer Drugs.</li> <li>Describe the general principles combination chemotherapy in the treatment of cancer</li> </ul>	<u>Hem2-S2-Pharm-2</u> Anti-cancer Drugs-II	Interactive Lecture	BCQs, SEQs, Structured Viva
<b>COMMUNITY MEDICINE</b>				
11	<ul style="list-style-type: none"> <li>To define occupational health.</li> <li>To discuss the occupational health hazard</li> <li>To discuss the occupational health services in Pakistan</li> <li>To describe the legislation</li> </ul>	Introduction to occupational health and safety	Interactive Lecture	BCQs, SEQs, Structured Viva
<b>FORENSIC MEDICINE</b>				
12		Wound-4	Interactive Lecture	BCQs, SEQs, Structured Viva
13		Ballistics 1		
14		Methods of Identification		

## THEME 2: PALLORNESS

<b>PATHOLOGY</b>				
S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
01	<ul style="list-style-type: none"> <li>To enlist the causes, clinical features and laboratory diagnosis of iron deficiency &amp; Megaloblastic anemias.</li> </ul>	<u>Haem-S2-Path-8</u> Nutritional Anemias	Interactive Lecture	BCQs, SEQs, Structured Viva
02	<ul style="list-style-type: none"> <li>To Enlist the causes, pathogenesis, clinical features and laboratory diagnosis of Aplastic anemia.</li> </ul>	<u>Haem-S2-Path-9</u> Aplastic anemia	Interactive Lecture	BCQs, SEQs, Structured Viva



03	<ul style="list-style-type: none"> <li>To discuss the pathogenesis, clinical features and laboratory diagnosis of Hereditary spherocytosis &amp; G6PD deficiency</li> </ul>	<u>Haem-S2-Path-10</u> Haemolytic Anemia	Interactive Lecture	BCQs, SEQs, Structured Viva
04	<ul style="list-style-type: none"> <li>To explain pathogenesis of haemoglobinopathies.</li> <li>To identify morphological features on peripheral blood smear.</li> </ul>	<u>Haem-S2-Path-11</u> Haemoglobinopathies	Interactive Lecture	BCQs, SEQs, Structured Viva
05	<ul style="list-style-type: none"> <li>Define Malaria and classify malarial parasites.</li> <li>Describe life cycle of malarial parasites.</li> <li>Differentiate between Benign and Malignant Tertian malaria.</li> <li>Discuss complications of Plasmodium Falciparum.</li> </ul>	<u>Haem-S2-Micb-2</u> Plasmodium	Interactive Lecture	BCQs, SEQs, Structured Viva
06	<ul style="list-style-type: none"> <li>Interpretation of CBC.</li> <li>To discuss the Peripheral film findings of different types of anemia.</li> <li>To discuss the different tests used for the diagnosis of Anemia.</li> </ul>	<u>Haem-S2-Path-12</u> Laboratory diagnosis of Anemia	Practical	BCQs, SEQs, Structured Viva
<b>PHARMACOLOGY</b>				
06	<ul style="list-style-type: none"> <li>Classify the drugs used in Iron Deficiency Anemia</li> <li>Describe the Mechanism Of Action, Indications, Contraindications, Adverse Effects And Drug Interactions Of Various Drugs used to treat the Iron Deficiency Anemia</li> </ul>	<u>Haem-S2-Pharm-3</u> Oral & injectable iron in iron deficiency anemia	Interactive Lecture	BCQs, SEQs, Structured Viva
07	<ul style="list-style-type: none"> <li>Classify the drugs used in Vitamin B12 and Folic Acid Deficiency Anemia.</li> <li>Describe the Mechanism Of Action, Indications, Contraindications, Adverse Effects And Drug Interactions</li> </ul>	<u>Haem-S2-Pharm-4</u> Vit. B12 & Folic acid in Macrocytic anemia	Interactive Lecture	BCQs, SEQs, Structured Viva
	of Various Drugs used to treat the B12 and Folic Acid Deficiency Anemia			
08	<ul style="list-style-type: none"> <li>Classify anti-malarial drugs with their mechanism and side effects</li> </ul>	<u>Haem-S2-Pharm-5</u> Anti-malarial drugs	Interactive Lecture	BCQs, SEQs, OSPE
09	<ul style="list-style-type: none"> <li>Write prescription for a patient at risk of developing iron-deficiency anemia</li> </ul>	<u>Haem-S2-Pharm-P1</u> Iron Deficiency Anemia	Practicle	BCQs, OSPE
10	<ul style="list-style-type: none"> <li>Write prescription for a patient at risk of developing iron-deficiency Thalasemia</li> </ul>	<u>Haem-S2-Pharm-P2</u> Thalasemia	Practicle	BCQs, OSPE
<b>MEDICINE</b>				
11		Approach To A Patient With Anemia & management	Interactive Lecture	BCQs, SEQs, Structured Viva

PAEDIATRICS				
12	<ul style="list-style-type: none"> <li>Assess, classify and manage childwith anemia</li> </ul>	Anaemia in children	Interactive Lecture	BCQs, SEQs, Structured Viva
13	<ul style="list-style-type: none"> <li>Assess, classify and manage childwith Thalassaemia</li> </ul>	Thalassaemia	Interactive Lecture	BCQs, SEQs, Structured Viva
GYNAE/OBSTETRICS				
14		Anaemia in Pregnancy	Interactive Lecture	BCQs, SEQs, Structured Viva
COMMUNITY MEDICINE				
15	<ul style="list-style-type: none"> <li>To discuss the agriculture health hazards</li> <li>To define pneumoconiosis</li> <li>To differentiate the types of pneumoconiosis on basis of dust</li> <li>To discuss the preventative and control measures of pneumoconiosis</li> </ul>	Occupational health hazards in agricultural workers	Interactive Lecture	BCQs, SEQs, Structured Viva
FORENSIC MEDICINE				
16		Negligence	Interactive Lecture	BCQs, SEQs, Structured Viva
17		Ballistics 2		
18		Dactylography		

### THEME 3: HEMOSTATIC ABNORMALITIES & BLOOD TRANSFUSION

PATHOLOGY				
S. No	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
01	<ul style="list-style-type: none"> <li>Overview of normal haemostasis</li> <li>Discuss Quantitative &amp; Qualitative platelets disorders.</li> <li>To discuss ITP and diagnosis.</li> </ul>	<u>Haem-S2-Path-13</u> Platelets disorders	Interactive Lecture	BCQs, SEQs, Structure dViva
02	<ul style="list-style-type: none"> <li>Define &amp; enlist the causes microangiopathic hemolytic anemias</li> <li>Define and explain Thrombotic Thrombocytopenic Perpura(TTP) and Hemolytic Ureamic Syndrome (HUS)</li> <li>Define and explain Disseminate Intravascular Coagulopathy (DIC)</li> </ul>	<u>Haem-S2-Path-14</u> MAHA (Microangiopathic hemolytic anemia)	Interactive Lecture	BCQs, SEQs, Structure dViva
03	<ul style="list-style-type: none"> <li>Overview of inherited &amp; acquired coagulation disorders</li> <li>Discuss the pathogenesis and pathophysiology of hemophilia A &amp; B, VWD.</li> <li>Diagnose hemophilia based on clinical features and laboratory findings</li> </ul>	<u>Haem-S2-Path-15</u> Coagulation disorders (haemophilia, vWD)	Interactive Lecture	BCQs, SEQs, Structure dViva

04	<ul style="list-style-type: none"> <li>To discuss the thrombosis, pathogenesis, types and fate of thrombosis.</li> <li>To Define Embolism, its types and morphological features of Embolism.</li> </ul>	<u>Haem-S2-Path-16</u> Thromboembolism	Interactive Lecture	BCQs, SEQs, Structure dViva
05	<ul style="list-style-type: none"> <li>Discuss and perform different laboratory tests for diagnosis of bleeding disorders</li> </ul>	<u>Haem-S2-Path-17</u> Laboratory diagnosis of Bleeding disorders	Practical	BCQs, SEQs, Structure dViva

#### PHARMACOLOGY

06	<ul style="list-style-type: none"> <li>Classify the coagulants drugs.</li> <li>Describe the mechanism of action, clinical uses, adverse effects, drug interactions and contraindications of the coagulant drugs.</li> </ul>	<u>Hem-S2- Pharm-5</u> The Coagulants	Interactive Lecture	BCQs, SEQs, Structure dViva
07	<ul style="list-style-type: none"> <li>Classify the Anticoagulants drugs.</li> <li>Describe the mechanism of action, clinical uses, adverse effects, drug interactions and contraindications of the Anticoagulant drugs.</li> </ul>	<u>Hem-S2-Pharm-6</u> Anti-Coagulants	Interactive Lecture	BCQs, SEQs, Structure dViva
08	<ul style="list-style-type: none"> <li>Classify the thrombolytic drugs.</li> <li>Describe the mechanism of action, clinical uses, adverse effects, drug interactions and contraindications of the Thrombolytic drugs.</li> </ul>	<u>Hem-S2-Pharm-7</u> Thrombolytic drugs	Interactive Lecture	BCQs, SEQs, Structure dViva

#### MEDICINE

09		Approach to a patient with bleeding disorders	Interactive Lecture	BCQs, SEQs, Structure dViva
10		Approach to a patient with Thrombotic disorders	Interactive Lecture	BCQs, SEQs, Structure dViva
11		Management of Blood transfusion reactions	Interactive Lecture	BCQs, SEQs, Structure dViva

#### PAEDIATRICS

12	<ul style="list-style-type: none"> <li>Approach to a patient with inherited bleeding disorders</li> </ul>	Bleeding disorders	Interactive Lecture	BCQs, SEQs, Structure dViva
13	<ul style="list-style-type: none"> <li>Diagnosis of hemolytic disease of new born, Rh incompatibility</li> </ul>	HDN	Interactive Lecture	BCQs, SEQs, Structure dViva

#### COMMUNITY MEDICINE

14	<ul style="list-style-type: none"> <li>To discuss the industrial health hazards.</li> <li>To define lead poisoning</li> <li>To discuss the preventive and control measures of lead poisoning</li> </ul>	Occupational health hazards in industrial workers. Lead poisoning	Interactive Lecture	BCQs, SEQs, Structure dViva
<b>FORENSIC MEDICINE</b>				
15		Professional Secrecy & Misconduct	Interactive Lecture	BCQs, SEQs, Structured Viva
16		Ballistics 3		
17		Trace evidence		
<b>SURGERY</b>				
18		Deep Venous Thrombosis	Interactive Lecture	BCQs, SEQs, Structure dViva

#### THEME 4: LYMPHADENOPATHY

PATHOLOGY				
S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
01	<ul style="list-style-type: none"> <li>Describe lymphoma, its etiology &amp; classification.</li> <li>Discuss the pathogenesis, types and morphological features of Hodgkin lymphoma</li> </ul>	<u>Haem-S2-Path-18</u> Hodgkin Lymphoma	Interactive Lecture	BCQs, SEQs, Structured Viva
02	<ul style="list-style-type: none"> <li>Describe Non-hodgkins lymphoma</li> <li>The classification and staging of non hodgkins lymphomas.</li> <li>Discuss the pathogenesis, clinical features and diagnosis of Chronic lymphocytic leukemia</li> </ul>	<u>Haem-S2-Path-19</u>  Non-Hodgkin Lymphoma-I	Interactive Lecture	BCQs, SEQs, Structured Viva
03	<ul style="list-style-type: none"> <li>Brief Discussion of Burkitt, follicular and DLBCL lymphoma.</li> </ul>	<u>Haem-S2-Path-20</u> Non-Hodgkin Lymphoma-II	Interactive Lecture	BCQs, SEQs, Structured Viva
04	<ul style="list-style-type: none"> <li>Discuss the pathogenesis, clinical features and laboratory diagnosis of Multiple Myeloma</li> </ul>	<u>Haem-S2-Path-21</u> Multiple Myeloma	Interactive Lecture	BCQs, SEQs, Structured Viva
05	<ul style="list-style-type: none"> <li>To see the Morphological features, Immunohistochemical findings of Lymphoma</li> </ul>	<u>Haem-S2-Path-22</u> Practical approach towards lymphoma	Practical	BCQs, SEQs, Structured Viva
<b>MEDICINE</b>				

06		Approach to patient with lymphadenopathy with or without splenomegaly	Interactive Lecture	BCQs, SEQs, Structured Viva
<b>SURGERY</b>				
07		Lymphedema	Interactive Lecture	BCQs, SEQs, Structured Viva
08		Disorders of Spleen & Splenectomy	Interactive Lecture	BCQs, SEQs, Structured Viva
<b>FORENSIC MEDICINE</b>				
09		Euthanasia	Interactive Lecture	BCQs, SEQs, Structured Viva
10		Firearm 1		
11		Mass Disaster identification/ Identification of Dead		

### THEME 5: HAEMATOLOGICAL MALIGNANCIES

<b>PATHOLOGY</b>				
S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
01	<ul style="list-style-type: none"> <li>Overview and classification of Acute leukemias</li> <li>Describe the pathogenesis, clinical Features and laboratory diagnosis of Acute Myeloid leukemia.</li> </ul>	<u>Haem-S2-Path-23</u> Acute Myeloid leukemia	Interactive Lecture	BCQs, SEQs, Structured Viva
02	<ul style="list-style-type: none"> <li>Describe the pathogenesis, clinical features and laboratory diagnosis of Acute Lymphoblastic leukemia.</li> </ul>	<u>Haem-S2-Path-24</u> Acute Lymphoblastic Leukemia	Interactive Lecture	BCQs, SEQs, Structured Viva
03	<ul style="list-style-type: none"> <li>The classification of Myeloproliferative disorders</li> <li>Discuss the pathogenesis, clinical features and laboratory diagnosis of Chronic myeloid Leukemia.</li> </ul>	<u>Haem-S2-Path-25</u> Myeloproliferative disorders	Interactive Lecture	BCQs, SEQs, Structured Viva
04	<ul style="list-style-type: none"> <li>Morphological features of acute &amp; chronic leukemia.</li> </ul>	<u>Haem-S2-Path-26</u> Laboratory diagnosis Of Acute & Chronic Leukemia	Practical	BCQs, SEQs, Structured Viva
<b>MEDICINE</b>				
05	<ul style="list-style-type: none"> <li>Describe the laboratory investigations of acute leukemia.</li> </ul>	Approach to patient with Acute Leukeima	Interactive Lecture	BCQs, SEQs, Structured Viva
06	<ul style="list-style-type: none"> <li>Describe the laboratory investigations of Chronic leukemia</li> </ul>	Approach to patient with Chronic Leukeima	Interactive Lecture	BCQs, SEQs, Structured Viva

PAEDIATRICS				
07		Acute Leukemia	Interactive Lecture	BCQs, SEQs, Structured Viva
FORENSIC MEDICINE				
08		Law related to Drugs/ Drugs Act	Interactive Lecture	BCQs, SEQs, Structured Viva
09		Firearm 2		
10		Forensic Serology 1		
COMMUNITY MEDICINE				
11	<ul style="list-style-type: none"> <li>To define ergonomics</li> <li>To discuss the importance of ergonomics in occupational health</li> <li>To describe the absenteeism</li> <li>To discuss the medical methods of prevention of occupational hazards.</li> <li>To discuss the engineering methods of prevention of occupational hazards</li> </ul>	Preventive measures of occupational health hazards	Interactive Lecture	BCQs, SEQs, Structured Viva

### THEME 6: IMMUNOLOGICAL DISORDERS

PATHOLOGY				
S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
01	<ul style="list-style-type: none"> <li>Define hypersensitivity reaction</li> <li>Describe Pathogenesis of four types of hypersensitivity reactions with examples.</li> </ul>	<u>Haem-S2-Path-28</u> Hypersensitivity Reactions	Interactive Lecture	BCQs, SEQs, Structured Viva
02	<ul style="list-style-type: none"> <li>Discuss immunodeficiency and its causes and clinical features.</li> </ul>	<u>Haem-S2-Path-29</u> Immunodeficiency disorders	Interactive Lecture	BCQs, SEQs, Structured Viva
03	<ul style="list-style-type: none"> <li>Discuss tolerance.</li> <li>Define Autoimmune disorders</li> <li>Describe the etiology, Pathogenesis and clinical features of autoimmune disorders.</li> </ul>	<u>Haem-S2-Path-30</u> Autoimmune Disorders	Interactive Lecture	BCQs, SEQs, Structured Viva
05	<ul style="list-style-type: none"> <li>Definition of Transplantation</li> <li>Types of transplantation</li> <li>Sources of bone marrow transplantation.</li> <li>Define Rejection &amp; mechanism of different types of rejections.</li> </ul>	<u>Haem-S2-Path-31</u> Transplantation & Rejection	Interactive Lecture	BCQs, SEQs, Structured Viva

06	<ul style="list-style-type: none"> <li>Define hemoflagellates.</li> <li>Enumerate the medically important species of Leishmania &amp; Trypanosoma.</li> <li>Describe vector, life cycle, pathogenesis clinical manifestation and lab diagnosis of Leishmaniasis &amp; Trypanosomiasis.</li> </ul>	Haem-S2-Mic-3 Trypanosoma & Leishmania	Interactive Lecture	BCQs, SEQs, Structured Viva
08	<ul style="list-style-type: none"> <li>Discuss the immunoassay techniques</li> </ul>	Haem-S2-Path-27 Immunoassay technique	Practical	OSPE
<b>PHARMACOLOGY</b>				
09	<ul style="list-style-type: none"> <li>Classify Antihistamine agents.</li> <li>Describe the Mechanism Of Action, Indications, Adverse Effects And Drug Interactions Of Antihistamines</li> </ul>	Haem-S2-Pharm-7 Anti-Histamine	Interactive Lecture	BCQs, SEQs, Structured Viva
10	<ul style="list-style-type: none"> <li>Classify the Immunosuppressant and Immunomodulating drugs.</li> <li>Describe the mechanism of action, indications &amp; adverse effects of</li> </ul>	Haem-S2-Pharm-8 Immuno modulating drugs	Interactive Lecture	BCQs, SEQs, Structured Viva

	Immunosuppressant and Immunomodulating drugs.			
<b>MEDICINE</b>				
11		Approach to patient with Autoimmune disorders	Interactive Lecture	BCQs, SEQs, Structured Viva
<b>FORENSIC MEDICINE</b>				
12		Firearm 3		BCQs, SEQs, Structured Viva
13		Forensic Serology 2		
<b>COMMUNITY MEDICINE</b>				
Field Visit				

### TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>COMMUNICATION SKILLS</b>						
Principles of ethics	Privacy and confidentiality of the patients, Medico-legal and cultural aspects	Display privacy and confidentiality of the patients keeping in view a-cultural traits b- medico-legal law cases	Role play, Hospital teaching	Blood 2	3	MCQ

<b>Confidentiality</b>	Confidentiality of colleagues and patients Appropriate use of social media	Ensuring confidentiality	Lecture/Role play, Group Discussion	Blood 2	2	MCQ
<b>RESEARCH</b>						
<b>Academic Reading and writing and Plagiarism</b>	Grammar	Plagiarism Checking and report interpretation	Practical Small group discussion Practical	Blood 2	2	MCQ
<b>Academic integrity</b>		Define academic integrity. Define plagiarism. Explain how to avoid plagiarism. List and explain software used to check plagiarism. Develop writing skills with Grammarly checker				

## CLINICAL SCIENCES SUBJECTS

<b>HEMATOLOGY AND ONCOLOGY – II MODULE</b>				
S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning strategy
1.	<b>ANAESTHESIA</b> Blood Component therapy	Describe hemorrhage during the surgical procedure Describe post-operative anemia Describe thrombocytopenia	1 1 1	Lecture Lecture Lecture
2.	<b>CRITICAL CARE</b> Hematological Diseases	Disorders of hemostasis in the critically ill patient Thombocytopenia in ICU Transfusion therapy: Blood components and complications of transfusions Antithrombotic pharmacotherapy	1 1 1 1	Lecture Lecture Lecture Lecture
3.	<b>ORTHOPAEDICS &amp; TRAUMA</b> Tumour Surgery	Bone Tumours Tumour surgery including amputations Limb Salvage Surgery Graded responsibilities in patient care	1 1 1 1	Lecture Lecture Lecture Lecture
4.	<b>UROLOGY</b> Tumours of Urinary tract	Benign tumors of Kidneys and Ureters (etiology, pathogenesis) Malignant tumors of kidneys and ureters (etiology, pathogenesis)	1 2	Lecture SGD
5.	<b>FAMILY MEDICINE</b>	Vaccinations EPI program Cost-effective prescribing	1 1 1	Lecture Lecture Lecture



	Rational use of antibiotics	1	Lecture
	How to write a prescription	1	Lecture

### CLINICAL ROTATION SCHEDULE

<b>Duration</b>	9 weeks	11 weeks	8 weeks	8 weeks
<b>Disciplines</b>	Medicine	Surgery	Gynae/Obs	Paeds
<b>Total hours*</b>	117	143	104	104

\* 2.6 Clinical rotation hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

### TEACHING HOURS ALLOCATION

S. No	Subject	Hours	Practical Hours
1	Pathology	28	12
2	Pharmacology	8	4
3	Forensic medicine	6	-
4	Community medicine	5	-
5	Medicine	8	-
6	Paediatrics	5	-
7	Microbiology	3	-
8	Gynaecology	1	-
9	Surgery	3	-
10	CBL (Pathology)*	12	-
11	CBL (Pharmacology)*	12	-
12	Anesthesia	3	-
13	Critical Care	4	-
14	Orthopaedics & Trauma	4	-
15	Urology	3	-
16	Family medicine	5	-
	<b>Total hours</b>	<b>110</b>	<b>16</b>

\*Minimum 2 hours are allotted for each CBL session per Module

S. No	Tagged Subject	Teaching Hours
1	Communication Skills	5
2	Research	2
	<b>Total hours</b>	<b>7</b>

## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

- Student must report to examination hall/venue, in time for smooth conduction of the exams.
- No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
- No students will be allowed to sit in exam without College ID Card, and Lab Coat
- Students must sit according to their roll numbers mentioned on the seats.
- Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
- Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
- Students must not possess any written material or communicate with their fellow students
- Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
- **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### ASSESSMENT

#### Internal: Total 10% (20 marks)

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

## University Annual Exam: Total 90%

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

## METHODS OF ASSESSMENT

### Multiple Choice Questions

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

### Short Essay Questions (SEQs):

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

### OSPE / OSCE

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize His/her thoughts

### ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.

- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### WEEKLY TESTS

The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.

- It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.

Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

### POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD  
Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class

PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-

56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail or Non gradable

### ASSESSMENT BLUEPRINT

#### HEMATOLOGY AND ONCOLOGY-II MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

### LEARNING RESOURCES

The learning resources for the educational contents of BDS program are available for the students which assist learners to achieve the outcomes and by focusing on educational content. In addition; the names of the books for each subject as a learning resources is available with the educational content of the same subject.

Following learning resources can be used by the undergraduates;

- Books
- Evidence based articles from journals
- Digital library to search the material for self-directed learning
- Video Tapes
- Displays
- Models
- Phantom Heads
- Printed Notes
- Case based scenarios'
- Community Visits

#### Recommended Books THIRD YEAR MBBS

General Pathology	Parasitology	Pharmacology	Microbiology
Robbins & Cotran Pathologic Basis Of Disease Vinay Kumar, Abul K. Abbas, Jon C.	Parasitology Protozoology And Helminthology K.D.	1. Lippincott Illustrated Reviews: Pharmacology Karen Whalen, Carinda Feild, Rajan Radhakrishnan	Review Of Medical Microbiology & Immunology Warren E.

<p>Aster 10<sup>th</sup> Edition  <b>Brs Pathology</b>  <b>(Board Review Series), Arthur S. Schneider, Philip A. Szanto, Schneider, Philip A. Szanto. 5th<sup>th</sup> Edition</b></p>	<p><b>Chatterjee, 13<sup>th</sup> Edition</b></p>	<p><b>Pharmacology: Examination &amp; Board Review, Anthony J. Trevor, Bertram G. Katzung, Marieke Knudering-Hall 12<sup>th</sup> Edition</b></p>	<p><b>Levinson, 14<sup>th</sup> Edition</b></p>
<p><b>Community Medicine</b></p>	<p><b>Forensic Medicine And Toxicology</b></p>		
<p><b>Park's Textbook Of Preventive And Social Medicine K. Park 26<sup>th</sup> Edition</b></p> <p><b>Text Book Of Community Medicine &amp; Public Health Ilyas Shah Ansari 8<sup>th</sup> Edition</b></p>	<p><b>1. Principles And Practice Of Forensic Medicine</b>  <b>Naseeb Awan 2<sup>nd</sup> Edition</b></p> <p><b>5. Parikh's Textbook Of Medical Jurisprudence, Forensic Medicine And Toxicology Parikh, C.K 6<sup>th</sup> Edition</b></p> <p><b>6. Simpson's Forensic Medicine Knight B 11<sup>th</sup> Edition</b></p> <p><b>7. Taylor's Principles And Practice Of Medical Jurisprudence Taylor Volume 1</b></p>		



**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you? Y  N
- B. The course contents met with your expectations   
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned   
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with   
l. Too few examples 5. Adequate examples
- E. The level of the course was   
l. Too low 5. Too high
- F. The course contents compared with your expectations   
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices   
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?   
l. Not at all 5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand   
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used   
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate   
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful   
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes  No

F. Please give overall rating of the course

90% - 100% (    )

60% - 70% (    )

80% - 90% (    )

50% - 60% (    )

70% - 80% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**GIT AND LIVER-II MODULE**  
**THIRD PROFESSIONAL MBBS**



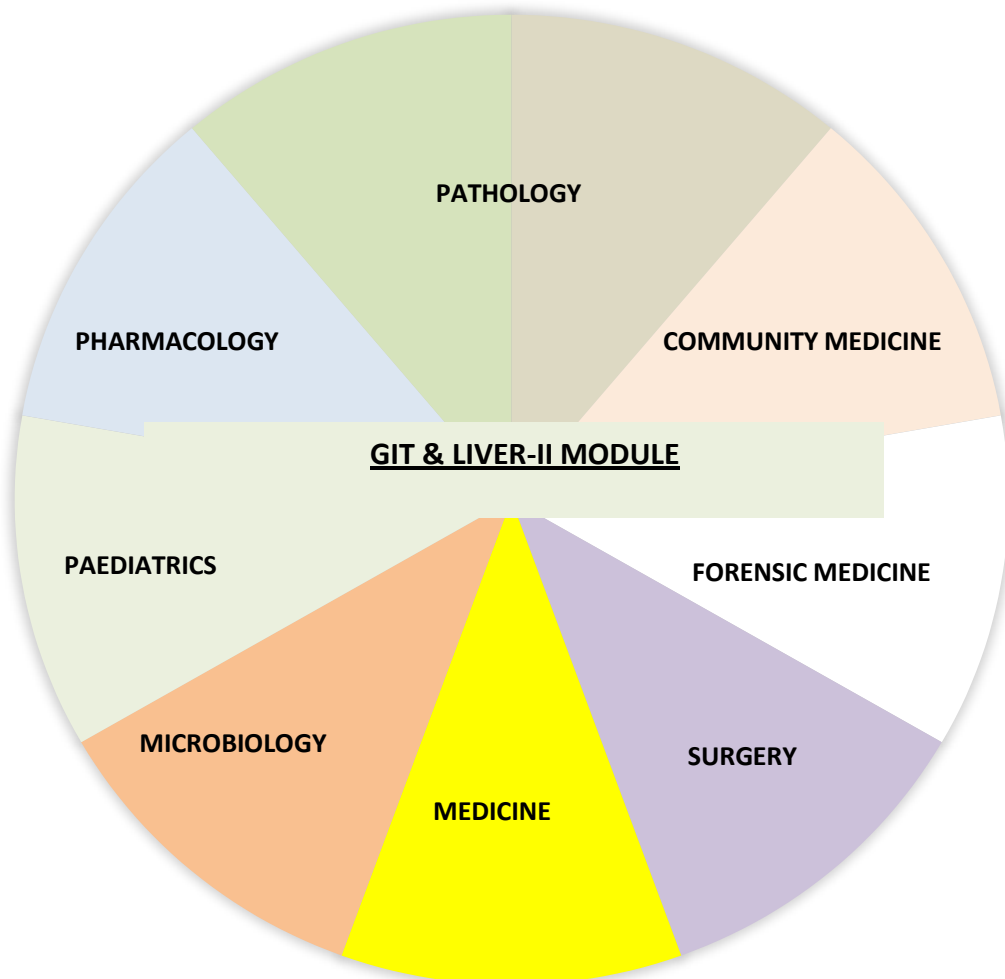
## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as CVS-II, Endocrine-II, Git and Liver-II, Hematology and oncology-II, Infectious Disease and Respiratory-II modules which link basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF GIT & LIVER-II MODULE

#### MODULE OVERVIEW






## GIT AND LIVER-II MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Third professional
<b>Duration</b>	8 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA


## GIT AND LIVER-II MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Dr. Bhawani Shankar	Pathology	Associate Professor
2.	Abid Laghari	Pharmacology	Lecturer
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

### Module objectives:

-  Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
-  Highlights information on the contribution of continuous on the student's overall performance.
-  Includes information on the assessment methods that will be held to determine every student's performance.

### Achievement of objectives:

-  Focuses on information pertaining to examination policy, rules and regulations.

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations

- Skills session
- Practicals
- Self-Directed Study

- **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to pharmacology, microbiology, forensic medicine, and community medicine have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

In Liver and GIT module, this fascinating session will act as a foundation and is crucial to your future practice as physicians. This module includes a number of interactive tasks that are meant to make your learning engaging and fruitful.

The topics covered in this module include malignancies of the stomach, diarrheal disorders, malabsorption syndromes, inflammatory bowel diseases, benign and malignant lesions of the small and large intestine, non-neoplastic and tumors of the esophagus, inflammation and peptic ulcer, and diseases of the salivary gland.

Liver pathologies include jaundice and cholestasis, cholangiopathies and autoimmune liver diseases, metabolic liver diseases-1, drug and toxin-induced liver injury and fatty liver disease, liver cirrhosis, liver tumors, inflammatory illnesses, and gallbladder tumors. Understanding the pathology of the GIT and liver will be made easier by the fact that all of these illnesses are highly prevalent in clinical settings.

In order to assist students in developing their clinical approach to comprehend and solve the clinical problem by connecting their foundational knowledge of anatomy, physiology, biochemistry, and pathology with findings of a clinical case, real-life scenarios have been added to the module and will be discussed in small groups.

### **RATIONALE**

Diseases of the GIT are common all over our country. It is essential to make early diagnosis and treat the disease in order to reduce morbidity and mortality. This module provides an integrative understanding and detailed and clinically relevant information of pathology related to the digestive and biliary system.

## **LEARNING OBJECTIVES**

### **Knowledge / Cognitive Domain**

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

1. Explain the etiology and clinical manifestations of common gastrointestinal diseases.
2. Assess patients with children and adult nutritional problems.
3. Examine the gastrointestinal system physically.
4. Take a history and create a suitable investigative strategy to arrive at a differential diagnosis.
5. For a diagnosis, evaluate the results of the investigations, exams, and history.
6. Apply the fundamentals of managing gastrointestinal and nutritional diseases.
7. Talk to the patients about prognosis and preventive measures.
8. Comprehend the public health importance of Nutrition.
9. Understand the nutritional requirement for different ages and gender.
10. Identify the factors for micro and macronutrient deficiencies in Pakistan.
11. Identify the risk factors of Malnutrition in children < 5 and over 5 years of age
12. Classify the types of malnutrition among children under and over 5 years.

### **Skills / Psychomotor Domain:**

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

1. Demonstrate the ability to perform the disease specific relevant examination
2. Respond to common medical emergencies
3. Master the skill of first aid
4. Perform BLS
5. Apply the best evidenced practices for local health problems

### **Attitude / Affective Domain:**

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

1. Respect oneself and one's peers, both when providing and receiving comments.
2. To show patients compassion and understanding.
3. Develop your ability to communicate while keeping a sense of duty to your patients.
4. Showcase appropriate laboratory procedures.
5. Relate to patient and caregivers vulnerability
6. Demonstrate ethical self-management
7. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
8. Display compassion with patient and colleagues
9. Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease

**Outcomes of Git and Liver-II Module**

- A. Knowledgeable
- B. Skillful
- C. Community Health Promoter
- D. Problem-solver
- E. Professional
- F. Researcher
- G. Leader and Role Model

**THEMES FOR GIT AND LIVER-II MODULE**

SNO	Themes	Duration
1	Diseases of oral cavity and esophagus	1 week
2	Diseases of stomach	1 week
3	Diarrheal diseases and malabsorption syndromes	1 week
4	Intestinal disorders	1 week
5	Jaundice & cholestasis	1 week
6	Metabolic & drug/toxin related liver diseases	1 week
7	Cirrhosis	1 week
8	Tumors of liver and gall bladder	1 week

**SPECIFIC LEARNING OBJECTIVES THEME WISE**

**THEME 1: DISEASES OF ORAL CAVITY AND ESOPHAGUS**

S#	Topics	Learning Objectives	Teaching Strategies	Assessments
<b>PATHOLOGY</b>				

01	<b><u>GIT-II-PATHO-1</u></b> Ulcer/ inflammatory lesion and cancer of oral cavity	Define leukoplakia and erythroplakia. Describe ulcer of oral cavity and define caries, fungal infection and inflammatory condition of oral cavity. Name the malignant tumors of oral mucosa and describe their etiopathology, morphology and clinical features.	Demonstration	BCQ SAQs OSPE
02	<b><u>GIT-II-PATHO-2</u></b> Disease of salivary gland inflammation and tumor	Mention cause of sialadenitis, clinical features and morphology. Name benign and malignant tumors of salivary gland. Describe etiopathology, morphology and clinical features.	Demonstration	BCQ SAQs OSPE
03	<b><u>GIT-II-PATHO-3</u></b> Motor disorders. Esophageal varices, inflammatory condition and gastroesophageal reflux	Define achalasia, mention its causes and morphology. Describe causes of haematemesis. Describe pathogenesis, clinical features of GERD Mention causes of dysphagia.	Demonstration	BCQ SAQs OSPE
04	<b><u>GIT-II-PATHO-4</u></b> Tumors of esophagus	Name benign and malignant tumors of esophagus. Describe etiopathology, clinical features and morphology of carcinoma esophagus.	Interactive Lecture	BCQ SAQs OSPE
05	<b><u>GIT-II-PATHO-1[P]</u></b>	Gross and microscopic features of oral cavity carcinoma, salivary gland tumor and carcinoma esophagus.	Practical	BCQ SAQs OSPE
<b>PHARMACOLOGY</b>				
06	<b><u>GIT-II-PHARMA-1</u></b> Drugs used for dyspepsia (Antacids and prokinetic drugs)	Discuss the Drugs used for dyspepsia (Antacids and prokinetic drugs)	Interactive Lecture	BCQ SAQs OSPE
<b>MEDICINE</b>				
07	<b><u>GIT-II-MED-1</u></b> Gastroesophageal reflux, esophagitis, Barrett's esophagus and hiatal hernia	Describe Gastroesophageal reflux, esophagitis, Barrett's esophagus and hiatal hernia	Interactive Lecture	BCQ SAQs OSPE
<b>SURGERY</b>				
08	<b><u>GIT-II-SURG-1</u></b> Surgical causes, presentation and management of hematemesis, dysphagia and carcinoma esophagus	Describe Surgical causes, presentation and management of hematemesis, dysphagia and carcinoma esophagus	Interactive Lecture	BCQ SAQs OSPE

S#	Topics	Learning Objectives	Teaching Strategies	Assessments
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**THEME 2: DISEASES OF STOMACH**

S#	Topics	Learning Objectives	Teaching Strategies	Assessments
<b>PATHOLOGY</b>				
09	<b><u>GIT-II-PATHO-5</u></b> Gastritis and peptic ulcer disease	Mention causes, pathogenesis of gastritis (Acute and chronic) Describe causes, etiopathology, complication and morphology of peptic ulcer disease. Mention role of H. Pylori in peptic ulcer disease, describe various methods of diagnosis of H. Pylori infection.	Demonstration	BCQ SAQs OSPE
10	<b><u>GIT-II-PATHO-6</u></b> Tumor of stomach	Name benign and malignant tumors of stomach, describe etiopathology, clinical features and morphology of carcinoma stomach.	Interactive Lecture	BCQ SAQs OSPE
11	<b><u>GIT-II-PATHO-2[P]</u></b>	Gross and microscopic features of peptic ulcer and carcinoma stomach	Practical	BCQ SAQs
<b>PHARMACOLOGY</b>				
12	<b><u>GIT-II-PHARMA-2</u></b> Drugs used for Acid peptic disorders including H. Pylori infection proton pump inhibitors	Discuss Drugs used for Acid peptic disorders including H. Pylori infection proton pump inhibitors	Interactive Lecture	BCQ SAQs OSPE
13	<b><u>GIT-II-PHARMA-P1</u></b> Peptic ulcer Disease	Construct prescription for Helicobacter associated peptic ulcer disease (Triple therapy & Quadruple therapy)	Practical	OSPE
<b>MEDICINE</b>				
14	<b><u>GIT-II-MED-2</u></b> Diagnosis and management of gastritis/Acid peptic disease and endoscopic management of bleeding peptic ulcer	Diagnosis and management of gastritis/Acid peptic disease and endoscopic management of bleeding peptic ulcer	Interactive Lecture	BCQ SAQs OSPE
<b>SURGERY</b>				
15	<b><u>GIT-II-SURG-2</u></b> Surgical management in Acid peptic disease and carcinoma of stomach.	Surgical management in Acid peptic disease and carcinoma of stomach.	Interactive Lecture	BCQ SAQs OSPE



<b>PATHOLOGY</b>				
<b>16</b>	<b><u>GIT-II-MICRO-1</u></b> Enterocolitis & causes of diarrhea and dysentery (Gram Negative curved rods (campylobacter, H.pylori & Vibrio)	Name various cases of enterocolitis. Mention various causes of diarrhea and dysentery. Enlist the virulence factors. Describe the clinical features, pathogenesis & laboratory diagnosis (Microbiology).	Interactive Lecture	BCQ SAQs OSPE
<b>17</b>	<b><u>GIT-II-PATHO-7</u></b> Ischemic colitis, Haemorrhoids Malabsorption syndrome (Coeliac disease)	Describe clinical features, etiopathogenesis and morphology. Define malabsorption and name various causes. Describe clinical features, etiopathology, morphology and diagnosis of coeliac disease.	Interactive Lecture	BCQ SAQs OSPE
<b>18</b>	<b><u>GIT-II-MICRO-2</u></b> Entamoeba histolytica & Giardia lamblia	Describe the clinical features, pathogenesis & laboratory diagnosis	Interactive Lecture	BCQ SAQs OSPE
<b>19</b>	<b><u>GIT-II-MICRO-3</u></b> Cestodes (Tape worms)	Classify the medically important cestodes. Describe the important properties, clinical findings and laboratory diagnosis.	Interactive Lecture	BCQ SAQs OSPE
<b>20</b>	<b><u>GIT-II-MICRO-4</u></b> Intestinal Nematodes	Classify medically important nematodes. Describe the important properties, clinical findings and laboratory diagnosis.	Interactive Lecture	BCQ SAQs OSPE
<b>21</b>	<b><u>GIT-II-PATHO-08</u></b> Inflammatory bowel diseases	Name inflammatory bowel disease. Describe etiopathology, clinical features and morphological features of Crohn's disease and ulcerative colitis.	Interactive Lecture	BCQ SAQs OSPE
<b>22</b>	<b><u>GIT-II-PATHO-3[P]</u></b>	Describe/ Enlist the various microbial agents causing diarrhea and dysentery and mention their lab diagnosis.	Practical	BCQ SAQs OSPE
<b>PHARMACOLOGY</b>				
<b>23</b>	<b><u>GIT-II-PHARMA-3</u></b> Emetics and Antiemetic's	Discuss drugs used as Emetics and Antiemetic's	Interactive Lecture	BCQ SAQs
<b>24</b>	<b><u>GIT-II-PHARMA-P2</u></b> Anti-emetics	Construct prescriptions for motion sickness, morning sickness, post-operative patient and cancer chemotherapy induced vomiting	Practical	BCQ OSPE
<b>MEDICINE</b>				
<b>25</b>	<b><u>GIT-II-MED-3</u></b> Causes and clinical presentation and management of malabsorption syndrome / Coeliac disease. Irritable bowel	Describe in detail the causes and clinical presentation and management of malabsorption syndrome / Coeliac disease. Discuss Irritable bowel syndrome.	Interactive Lecture	BCQ SAQs OSPE

	syndrome.			
<b>SURGERY</b>				
<b>26</b>	<b><u>GIT-II-SURG-3</u></b> Clinical presentation and surgical management of inflammatory bowel disease.	Describe the clinical presentation and surgical management of inflammatory bowel disease.	Interactive Lecture	BCQ SAQs OSPE
<b>PEDIATRICS</b>				
<b>27</b>	<b><u>GIT-II-PAEDS-1</u></b> Causes and clinical Presentation and management of acute diarrhea.	Discuss the causes and clinical presentation and management of acute diarrhea.	Interactive	BCQ SAQs OSPE

### THEME 3: DIARRHEAL DISEASES AND MALABSORPTION SYNDROMES

### THEME 4: INTESTINAL DISORDERS

S#	Topics	Learning Objectives	Teaching Strategies	Assessments
<b>PATHOLOGY</b>				
<b>28</b>	<b><u>GIT-II-PATHO-09</u></b> Intestinal obstruction	Mention various causes of intestinal obstruction Define volvulus, intussusception, hernias and adhesions. Discuss etiopathogenesis, clinical features and morphology of Hirschsprung disease.	Interactive Lecture	BCQ SAQs OSPE
<b>29</b>	<b><u>GIT-II-PATHO-10</u></b> Inflammatory condition of abdomen	Define acute appendicitis. Describe causes, clinical features and morphology of acute appendicitis. Mention clinical features and morphology of Meckel's diverticulitis. Define diverticulosis, describe etiopathology and morphology.	Demonstration	BCQ SAQs OSPE
<b>30</b>	<b><u>GIT-II-PATHO-11</u></b> Benign tumors of small intestine and large intestine	Name benign polypoidal lesion of intestine. Describe etiopathology, clinical features and morphology of benign polyp. Define familial adenomatous polyposis syndrome. Describe etiopathology and morphology of FAP syndrome.	Interactive Lecture	BCQ SAQs OSPE
<b>31</b>	<b><u>GIT-II-PATHO-12</u></b> Malignant tumors of small intestine and large intestine	Name malignant tumor of large intestine. Describe etiopathology, clinical features and morphological features.	Interactive Lecture	BCQ SAQs OSPE
<b>32</b>	<b><u>GIT-II-PATHO-4[P]</u></b> Benign and malignant tumors of intestine.	Describe gross and microscopic features of benign and malignant tumors of intestine.	Practical	BCQ SAQs OSPE

PHARMACOLOGY				
33	<b><u>GIT-II-PHARMA-4</u></b> Drugs used in constipation. Management of diarrhea and inflammatory bowel syndrome.	Discuss the drugs used in constipation. Describe briefly Management of diarrhea and inflammatory bowel syndrome.	Interactive Lecture	BCQ SAQs OSPE
34	<b><u>GIT-II-PHARMA-P3</u></b> Amoebic Dysentery	Construct a prescription for a patient suffering from amoebic dysentery	Practicle	BCQ OSPE
35	<b><u>GIT-II-PHARMA-P4</u></b> Enteric Fever	Construct a prescription for a patient suffering from Enteric Fever Construct a prescription for a patient suffering from Ascariasis	Practicle	BCQ OSPE
SURGERY				
36	<b><u>GIT-II-SURG-4</u></b> Causes and management of intestinal obstruction.	Discuss the causes and management of intestinal obstruction.	Interactive Lecture	BCQ SAQs OSPE

#### THEME 5: JAUNDICE & CHOLESTASIS

S#	Topics	Learning Objectives	Teaching Strategies	Assessments
PATHOLOGY				
37	<b><u>GIT-II-PATHO-13</u></b> Jaundice and cholestasis	Bile Formation and Secretion Pathophysiology of Hyperbilirubinemia Explain etiology & clinical diagnosis of Pre-Hepatic Jaundice Hepatic Jaundice Post-Hepatic Jaundice Hereditary Hyperbilirubinemia Gilbert's syndrome Crigler–Najjar syndrome type I & II Dubin-Johnson syndrome (DJS) Rotors syndrome (DJS)	Demonstration	BCQ SAQs OSPE
38	<b><u>GIT-II-PATHO-14</u></b> Infectious disorder	Pathophysiology of viral hepatitis A, B, C, D & E Virus	Interactive Lecture	BCQ SAQs OSPE
39	<b><u>GIT-II- MICRO-5</u></b> Hepatitis Virus	Describe the mode of transmission, Clinical features and serology of viral hepatitis (microbiology)	Interactive Lecture	BCQ SAQs OSPE

40	<b><u>GIT-II-PATHO-15</u></b> Autoimmune liver diseases & Cholangiopathies	Explain etiology, pathogenesis & clinical features & Diagnostic criteria of Type I Autoimmune liver diseases Type II Autoimmune liver diseases Primary Biliary Cholangitis (PBC) Primary Sclerosing Cholangitis (PSC)	Interactive Lecture	BCQ SAQs OSPE
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### THEME 6: METABOLIC & DRUG/TOXIN RELATED LIVER DISEASES

S#	Topics	Learning Objectives	Teaching Strategies	Assessments
<b>PATHOLOGY</b>				
41	<b><u>GIT-II-PATHO-16</u></b> Metabolic Liver Diseases	Explain etiology, pathogenesis & clinical features & Diagnostic criteria of -Hemochromatosis -Wilson Disease - $\alpha$ 1-Antitrypsin Deficiency	Interactive Lecture	BCQ SAQs OSPE
42	<b><u>GIT-II-PATHO-17</u></b> Drug- and Toxin- Induced Liver Injury & Fatty Liver Disease	Explain etiology, pathogenesis & clinical features & Diagnostic criteria of -Alcoholic Liver Disease -Nonalcoholic Fatty liver	Interactive Lecture	BCQ SAQs OSPE
43	<b><u>GIT-II-RADIO-1</u></b> Radiation Dose	Describe briefly regarding the typical effective doses from diagnostic medical exposure.	Interactive Lecture	BCQ OSPE

### THEME 7: CIRRHOSIS

#	Topics	Learning Objectives	Teaching Strategies	Assessments
<b>PATHOLOGY</b>				
43	<b><u>GIT-II-PATHO-18</u></b> Cirrhosis of liver	Etiology, Pathogenesis Symptoms and Complications	Interactive Lecture	BCQ SAQs
44	<b><u>GIT-II-PATHO-5[P]</u></b> Cirrhosis of liver	Describe gross and microscopic features	Practical	OSPE
<b>PHARMACOLOGY</b>				
45	<b><u>GIT-II-PHARMA-5</u></b> Drugs used in Hepatitis	Discuss the drugs used in Hepatitis	Interactive Lecture	BCQ SAQs
<b>MEDICINE</b>				
46	<b><u>GIT-II-MED-4</u></b> Clinical presentation and outline management of	Describe the clinical presentation and outline management of Hepatitis B&C	Interactive Lecture	BCQ SAQs OSPE

	Hepatitis B&C			
47	<b><u>GIT-II-MED-5</u></b> Management of acute hepatitis and fulminant hepatic failure	Discuss in detail the management of acute hepatitis and fulminant hepatic failure	Interactive Lecture	BCQ SAQs OSPE
<b>SURGERY</b>				
48	<b><u>GIT-II-SURG-5</u></b> Clinical presentation and indication of surgery in liver cirrhosis.	Discuss briefly the clinical presentation and indication of surgery in liver cirrhosis.	Interactive Lecture	BCQ SAQs OSPE

### THEME 8: TUMORS OF LIVER AND GALL BLADDER

S#	Topics	Learning Objectives	Teaching Strategies	Assessments
<b>PATHOLOGY</b>				
49	<b><u>GIT-II-PATHO-19</u></b> Tumors of liver	Etiology, pathogenesis, gross & histologic Features Focal Nodular Hyperplasia Cavernous Hemangioma Hepatocellular Adenoma Hepatoblastoma Hepatocellular Carcinoma Malignant Biliary Tumors	Demonstration	BCQ SAQs OSPE
50	<b><u>GIT-II-PATHO-20</u></b> Diseases & Tumors of gall bladder	Congenital Anomalies Etiology, pathogenesis, gross & histologic Features of Cholelithiasis (Gall stones) Acute & Chronic Cholecystitis Gall bladder Carcinoma	Interactive Lecture	BCQ SAQs OSPE
51	<b><u>GIT-II-PATHO-6[P]</u></b> Ca liver and Gall Bladder	Gross and microscopic feature of hepatocellular carcinoma and carcinoma gall bladder	Practical	BCQ SAQs OSPE
<b>MEDICINE</b>				
52	<b><u>GIT-II-MED-6</u></b> Cirrhosis, partial hypertension, variceal bleeding, medical and endoscopic management.	Briefly describe the Cirrhosis, partial hypertension, variceal bleeding, their medical and endoscopic management.	Interactive Lecture	BCQ SAQs OSPE
53	<b><u>GIT-II-MED-7</u></b> Ascites, Hepatic encephalopathy and hepatorenal syndrome	Discuss the clinical features of Ascites, Hepatic encephalopathy and hepato renal syndrome	Interactive Lecture	BCQ SAQs OSPE
<b>SURGERY</b>				

<b>54</b>	<b><u>GIT-II-SURG-6</u></b> Clinical presentation and management of cholelithiasis	Describe the clinical presentation and management of cholelithiasis	Interactive Lecture	BCQ SAQs
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**SUBJECT: COMMUNITY MEDICINE – NUTRITION**

<b>S. No</b>	<b>Learning Objectives</b>	<b>Topic</b>	<b>Teaching Strategy</b>	<b>Assessment</b>
<b>01</b>	<p>Define balanced diet</p> <p>Understand the importance of a balanced diet</p> <p>Explain the food pyramid</p> <p>Describe the different focus groups in a balanced diet</p> <p>Enumerate the routine dietary requirements and nutritional values at different age groups.</p> <p>Describe the routine dietary needs of pregnant and lactating mothers.</p> <p>Define the nutritional status, growth and development.</p> <p>Describe the purpose of nutritional assessment. Understand and discriminate between internal and external methods of nutritional assessment in children and adults.</p> <p>Enumerate different nutritional indices in adults</p>	<p><b><u>GIT-II-COM</u></b></p> <p><b><u>MED-1</u></b></p> <p>Balanced Diet and Nutritional status assessment</p>	Interactive Lecture	
<b>02</b>	<p>Describe micro and macro-nutrient components.</p> <p>Comprehend the importance of micro and macro nutrient components.</p> <p>Enumerate the different factors of micro and macronutrient deficiencies.</p> <p>Describe the burden of micro and macronutrient deficiency in Pakistan.</p> <p>Describe the malnutrition</p> <p>Classify the types of malnutrition among children under and over 5 years.</p> <p>Discriminate between the risk factors responsible for malnutrition among children under and over 5 years of age.</p> <p>Discuss the epidemiology of Malnutrition in Pakistan.</p> <p>Discriminate between Kwashiorkor and Marasmus</p> <p>Discuss the strategies for controlling malnutrition in Pakistan</p>	<p><b><u>GIT-II-COM</u></b></p> <p><b><u>MED-2</u></b></p> <p>Micro and macro nutritional Deficiencies and Malnutrition in under and over five years' age children</p>	Interactive Lecture	BCQ's, SAQ's OSPE, VIVA

03	<p>Define food preservation, fortification and adulteration.</p> <p>Describe the public health importance of food preservation and fortification.</p> <p>Discriminate between food adulteration and fortification.</p> <p>Define food poisoning</p> <p>Describe what causes food poisoning Explain the effects of food poisoning</p>	<p><b><u>GIT-II-COM</u></b></p> <p><b><u>MED-3</u></b></p> <p>Food preservation, fortification and adulteration/ Food Poisoning</p>	<p>Interactive Lecture</p>	
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**SUBJECT: FORENSIC MEDICINE**

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
01	<p>Define death</p> <p>Explain Scientific concepts regarding death</p> <p>Describe Medico-legal aspect of brain death, Howard's criteria of death</p> <p>Explain Medico-legal aspects of sudden &amp; unexpected deaths</p> <p>Discuss Cause, manner, mode and mechanism of death</p>	<p><b><u>THEME:</u></b></p> <p><b><u>THANATOLOGY</u></b></p> <p><b><u>GIT -II-FOR MED-1</u></b></p> <p>Death (Intro) Cause, Manner, Mode &amp; Mechanism of Death</p>	<p>Interactive Lecture</p>	
02	<p>Describe Immediate signs of death with special stress on Somatic or clinical death Define Suspended animation</p> <p>Explain Changes in the eye</p> <p>Discuss Early changes after death such as Algor Mortis (Cooling of the body) Discuss Early changes after death such as Liver Mortis.</p> <p>Discuss Early changes after death such as Rigor Mortis</p>	<p><b><u>GIT -II-FOR MED-2</u></b></p> <p>Immediate &amp; Early Signs of Death</p>	<p>Interactive Lecture</p>	
03	<p>Describe Physio-chemical changes in various body tissues and organs under various environmental conditions, such as changes in muscular system after death Describe Changes in the blood</p> <p>Describe Changes in the CSF</p> <p>Describe Changes in the Vitreous humor</p> <p>Describe Changes in the Bone marrow</p>	<p><b><u>GIT -II-FOR MED-3</u></b></p> <p>Physio-Chemical Changes of Death and Death Changes in Blood, CSF, Vitreous Humour &amp; Bone Marrow</p>	<p>Interactive Lecture</p>	<p>BCQ's, SAQ's OSPE, VIVA</p>
04	<p>Describe Late signs of death i.e., Putrefaction, mechanism, changes, gases of decomposition</p> <p>Explain Adipocere formation</p> <p>Explain Mummification</p>	<p><b><u>GIT -II-FOR MED-4</u></b></p> <p>Late &amp; very late Sign of Death</p>	<p>Interactive Lecture</p>	

05	<p>Discuss Forensic entomology Define Maceration</p> <p>Discuss Process in formation of maceration</p> <p>Microscopic changes occurred in maceration</p> <p>Differentiate b/w putrefaction, maceration, mummification and adipocere formation</p>	<p><b><u>GIT -II-FOR MED-5</u></b></p> <p>Forensic Entomology and Maceration</p>	<p>Interactive Lecture</p>	
06	<p>Define Sexual offences Classify sexual offences</p>	<p><b><u>THEME: FORENSIC SEXOLOGY</u></b></p> <p><b><u>GIT -II-FOR MED-6</u></b></p> <p>Sexual Offences (Intro)</p>	<p>Interactive Lecture</p>	
07	<p>Define Legal definition of Rape Describe Procedure of examination of a victim of rape and Collection of specimens during examination</p> <p>Describe Examination of accused person Define Rape in children</p> <p>Discuss Complications following rape with special stress of post-traumatic stress disorder</p> <p>Discuss Problems in medico legal examination of victim of rape in present scenario</p> <p>Define Incest and its legal aspects</p>	<p><b><u>GIT -II-FOR MED-7</u></b></p> <p>Natural Sexual Offences and Legal Aspects</p>	<p>Interactive Lecture</p>	
08	<p>Define Legal definition of sodomy and its types</p> <p>Describe Examination of a victim of Sodomy</p> <p>Describe Examination of a habitual passive agent (Catamite) and habitual active agent (Sodomite)</p> <p>Describe Collection of samples from passive and active agent</p> <p>Define Bestiality with examination</p> <p>Define Tribadism or female homosexuality and its legal aspects</p> <p>Define Buccal coitus</p> <p>Describe common sexual perversions and legal aspects</p>	<p><b><u>GIT -II-FOR MED-8</u></b></p> <p>Unnatural Sexual Offences and Legal Aspects</p>	<p>Interactive Lecture</p>	
09	<p>Define Sexual perversions</p> <p>Classify Sexual perversions</p> <p>Discuss Sexual perversions</p>	<p><b><u>GIT -II-FOR MED-9</u></b></p> <p>Sexual Perversions</p>	<p>Interactive Lecture</p>	
10	<p>Define Virginity, Pregnancy, Delivery, Impotence, Sterility, Artificial insemination abortion</p>	<p><b><u>THEME: FORENSIC OBGYN</u></b></p> <p><b><u>GIT -II-FOR MED-10</u></b></p> <p>Introduction of Forensic OBGYN</p>	<p>Interactive Lecture</p>	



11	<p>Describe Virginity and its medico legal perspectives</p> <p>Describe Signs of virginity on medicolegal examination</p> <p>Differentiate between true and false virginon examination</p> <p>Describe Defloration along with causes ofrupture of hymen and age of a torn hymen</p>	<p><b><u>GIT -II-FOR MED-11</u></b> Virginity</p>	<p>Interactive Lecture</p>	
12	<p>Describe Pregnancy and its legal aspectsDescribe Calculation of EDD (Expected date of delivery</p> <p>Describe Signs of pregnancy (presumptive, probable and definitesigns)</p> <p>Describe Diagnosis of pregnancy inmedico legal cases</p> <p>Describe Motives of feigned pregnancyDiscuss Abnormal forms of pregnancy and Legitimacy- Legitimate child as per law</p>	<p><b><u>GIT -II-FOR MED-12</u></b> Pregnancy</p>	<p>Interactive Lecture</p>	
13	<p>Describe Delivery and its medico legalaspects</p> <p>Describe Signs of recent delivery in living Describe Signs of recent delivery in dead Describe Signs of remote delivery in livingDescribe Signs of remote delivery in dead</p> <p>Describe Medico legal aspects of delivery</p>	<p><b><u>GIT -II-FOR MED-13</u></b> Delivery</p>	<p>Interactive Lecture</p>	
14	<p>Define Impotence, Sterility and Artificial insemination</p> <p>Describe Consummation of marriage, causes of nullity of marriage and divorcefrom legal aspects</p> <p>Describe Impotency and Sterility withlegal dictums</p> <p>Describe Causes of impotency andsterility</p> <p>Discuss Examination of a case of impotency and how to give opinion insuch a case</p> <p>Artificial Insemination, its types, procedure, precautions in selecting adonor and legal implications, Surrogate birth</p>	<p><b><u>GIT -II-FOR MED-14</u></b> Impotence</p>	<p>Interactive Lecture</p>	

15	<p>Define Abortion, types of abortion &amp; its Medico legal aspects</p> <p>Discuss Grounds for abortion with special emphasis on pregnancy after rape</p> <p>Define Criminal abortion and its types according to Pakistan Penal Code Describe Unskilled, Semi-skilled and Skilled methods of criminal abortion Complications of Criminal abortion Describe Causes of death in criminal abortion and autopsy finding</p>	<p><b><u>GIT -II-FOR MED-15</u></b> Abortion</p>	<p>Interactive Lecture</p>	
16	<p>Define Properties, Pharmacological Action, Absorption, Distribution and Elimination of Barbiturates.</p> <p>Explain Classification, Features of Acute &amp; Chronic Toxicity &amp; the Methods used for the Detection, Management &amp; Postmortem changes in a Victim of Barbiturate Toxicity.</p> <p>Discuss Fatal &amp; Lethal Doses, Medico-legal Aspects of Barbiturates.</p>	<p>Barbiturate Poisoning</p>		
17	<p>Define narcotics.</p> <p>Discuss pathophysiology, signs &amp; symptoms, diagnosis and treatment.</p> <p>Discuss medico legal importance</p>	<p>Narcotics Drug</p>	<p><b><u>Special Toxicology Demonstration/ Tutorial Classes</u></b></p>	<p>OSPE, VIVA</p>
18	<p>Define drug, drug dependence &amp; drug addiction.</p> <p>Enlist addictive drugs.</p> <p>Define drug abuse, habituation, hypnotics, &amp; narcotics.</p> <p>Discuss different terminologies i.e. physical &amp; psychological dependence, psychotropic drugs, sedative, stimulants and tolerance.</p>	<p>Dependence &amp; Drug Addiction</p>		
19	<p>Define hallucinogens.</p> <p>Classify types of hallucinogens. Discuss source, sign &amp; symptoms, fatal dose, fatal period and treatment.</p> <p>Discuss postmortem appearance and medico legal importance.</p>	<p>Hallucinogens</p>		
20	<p>Introduction, different types, treatment, Postmortem appearance, medico legal importance</p>	<p>Amphetamine Poisoning</p>		
21	<p>Define herbicides</p> <p>Discuss toxicity, sign &amp; symptoms, fatal dose, fatal period and treatment.</p> <p>Discuss medico legal importance</p>	<p>Herbicide</p>		

22	Define Properties, Common sources, common features for absorption, Clinical Features & Occupations at risk, Discuss Methods for the detection, Risks in pregnancy & Management, Postmortem changes & Medico-legal aspects of Carbon Monoxide Poisoning. Discuss How Does Carbon Monoxide Poisoning Works & Its elimination & Why Carbon Monoxide is considered as a Chemical Asphyxiant.	Carbon monoxide		
23	Define fuel poisoning, Signs & Symptoms, fatal dose and fatal period Discuss poisoning management options Discuss postmortem appearance and medico legal importance	Fuel poisoning (kerosene and petrol)		

### TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>PROFESSIONALISM AND BEHAVIORAL SCIENCES</b>						
<b>Dynamics of professionalism</b>	Trust definition, its attributes, and components, and its' application	Dynamics of trust in health professional- patient relationship	Lecture / Group Discussion	Git and Liver	2	MCQ
<b>Professional identity formation</b>	Types, multiple identities	Students' roles in terms of professional identity	Group Discussion	Git and Liver	2	MCQ
<b>Attributes of Professionalism</b>	Principles of trust in daily work activities	Adheres to principles of trust in day-to-day professional interactions	Group Discussion	Git and Liver	2	MCQ
<b>Dealing with patient</b>	Patient reception, and respect	Receive patients with respect	Group Discussion	Git and Liver	1	MCQ
<b>Communicating with administration</b>	Communicating with administration	Share with administration on matters one feels sensitive about	Hospital teaching	Git and Liver	3	MCQ

<b>Dealing with patients</b>	Answering to patient queries	Answering questions and giving explanations and/or instructions	Role play, Group Discussion	Git and Liver	1	MCQ
<b>Motivation</b>	Motivation. Team working	Explain motivational skills for team members for clinical tasks	Small group discussion	Git and Liver	2	MCQ
<b>RESEARCH</b>						
<b>Purpose and process of health research</b>	Background, concepts, uses. Definition of medical research Need of medical research Broad overview of the different types of research (qualitative, quantitative, mixed methods and the common research methods/design used in each	Define and categorize types of health research Explain the purpose of health research	Lecture	Git and Liver	2	MCQ
<b>Referencing</b>	Bibliography Intacts (secondary citation Mandelely / Zotero	Differentiate between references, citation & bibliography List different styles of referencing Select appropriate referencing style for research project.	Lecture  Self-directed learning	Git and Liver	1	MCQ

	Explore and Practice free reference software Zotero for referencing (open access)	Apply referencing software to word document	Lecture  Small group Discussion	Git and Liver	2	Assignment
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### CLINICAL SCIENCES SUBJECTS

GIT AND LIVER – II MODULE				
S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>ANAESTHESIA</b>  Pharmacology of IV Anesthetic Agents	Classify drugs used in Anesthesia	1	Lecture
		Describe their mechanism of action	1	Lecture
		Describe their hemodynamic effect	1	Lecture
		Explain doses of common IV anesthetic agents	1	Lecture
2.	<b>CRITICAL CARE</b> Toxicology	Acetaminophen Poisoning	1	Lecture
		Organophosphate Poisoning	1	Lecture
3.	<b>ORTHOPAEDICS &amp; TRAUMA</b>	Hand Surgery	1	Lecture
		Arthroscopy	1	Lecture
		Total joint replacement	1	Lecture
		Spine Surgery	1	Lecture
4.	<b>FAMILY MEDICINE</b>  Common GI Problems	Constipation	1	Lecture
		Diarrhea	1	Lecture
		Dyspepsia	1	Lecture
		IBS and IBD	1	Lecture
		Acute GI presentations	1	Lecture

### CLINICAL ROTATION SCHEDULE

<b>Duration</b>	9 weeks	11 weeks	8 weeks	8 weeks
<b>Disciplines</b>	Medicine	Surgery	Gynae/Obs	Paeds
<b>Total hours*</b>	117	143	104	104

\* 2.6 Clinical rotation hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

### TEACHING HOURS ALLOCATION

S. No	Subject	Hours	Practical Hours
1	Pathology	32	12

2	Pharmacology	5	8
3	Forensic medicine	22	14
4	Community medicine	3	-
5	Medicine	7	-
6	Microbiology	5	-
7	Paediatrics	1	-
8	Surgery	6	-
9	CBL (Pathology)*	16	-
10	CBL (Pharmacology)*	8	-
11	Radiology	1	-
12	Anesthesia	4	-
13	Critical Care	2	-
14	Orthopaedics & Trauma	4	-
15	Family Medicine	5	-
<b>Total hours</b>		<b>121</b>	<b>34</b>

\*Minimum 2 hours are allotted for each CBL session per Module

S. No	Tagged Subject	Teaching Hours
1	Professionalism and behavioral sciences	13
2	Research	5
<b>Total hours</b>		<b>18</b>

## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

- Student must report to examination hall/venue, in time for smooth conduction of the exams.
- No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
- No students will be allowed to sit in exam without College ID Card, and Lab Coat

- Students must sit according to their roll numbers mentioned on the seats.
- Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
- Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
- Students must not possess any written material or communicate with their fellow students
- Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
- **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### ASSESSMENT

#### **Internal: Total 10% (20 marks)**

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

#### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

### METHODS OF ASSESSMENT

#### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.

- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

#### **Short Essay Questions (SEQs):**

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

#### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

#### **ASSIGNMENTS**

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.



## WEEKLY TESTS

The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle. The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.

It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.

Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

## POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD  
Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class  
PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail or Non gradable

## ASSESSMENT BLUEPRINT

### GIT AND LIVER-II MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
			Total

### LEARNING RESOURCES

The learning resources for the educational contents of MBBS program are available for the students which assist learners to achieve the outcomes and by focusing on educational content. In addition; the names of the books for each subject as a learning resources is available with the educational content of the same subject.

Following learning resources can be used by the undergraduates;

- Books
- Evidence based articles from journals
- Digital library to search the material for self-directed learning
- Video Tapes
- Displays
- Models
- Phantom Heads
- Printed Notes
- Case based scenarios'
- Community Visits

#### Recommended Books THIRD YEAR MBBS

General Pathology	Parasitology	Pharmacology	Microbiology
Robbins & Cotran Pathologic Basis Of Disease Vinay Kumar, Abul K. Abbas, Jon C. Aster 10 <sup>th</sup> Edition Brs Pathology (Board Review Series), Arthur S. Schneider, Philip A. Szanto, Schneider,	<b>Parasitology P:rotozoology And Helminthology K.D. Chatterjee, 13<sup>th</sup> Edition</b>	1. Lippincott Illustrated Reviews: Pharmacology Karen Whalen, Carinda Feild, Rajan Radhakrishnan Pharmacology: Examination & Board Review, Anthony J. Trevor, Bertram G. Katzung, Marieke Knudering-Hall 12 <sup>th</sup>	<b>Review Of Medical Microbiology &amp; Immunology Warren E. Levinson, 14<sup>th</sup> Edition</b>

<p><b>Philip A. Szanto.</b> 5th<sup>th</sup> Edition</p>		Edition	
<p><b>Community Medicine</b></p>	<p><b>Forensic Medicine And Toxicology</b></p>		
<p><b>Park's Textbook Of Preventive And Social Medicine K. Park 26<sup>th</sup> Edition</b></p> <p><b>Text Book Of Community Medicine &amp; Public Health Ilyas Shah Ansari 8<sup>th</sup> Edition</b></p>	<p><b>1. Principles And Practice Of Forensic Medicine</b> <b>Naseeb Awan 2<sup>nd</sup> Edition</b></p> <p><b>8. Parikh's Textbook Of Medical Jurisprudence, Forensic Medicine And Toxicology Parikh, C.K 6<sup>th</sup> Edition</b></p> <p><b>9. Simpson's Forensic Medicine Knight B 11<sup>th</sup> Edition</b></p> <p><b>10. Taylor's Principles And Practice Of Medical Jurisprudence Taylor Volume 1</b></p>		

**THIRD PROFESSIONAL MBBS**



## MODULE OVERVIEW

### ENDOCRINOLOGY-II MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Third professional
<b>Duration</b>	4 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

### ENDOCRINOLOGY-II MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Dr. Bhawani Shankar	Pathology	Associate Professor
2.	Abid Laghari	Pharmacology	Lecturer
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### Module objectives:

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

#### Achievement of objectives:

- ✚ Focuses on information pertaining to examination policy, rules and regulation

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations

- Skills session
- Practicals
- Self-Directed Study

- **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to pharmacology, microbiology, forensic medicine, and community medicine have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

The endocrine system regulates and integrates cellular activity throughout the body by preserving homeostasis and controlling cellular and organ function throughout life. Maintaining a steady internal environment, or homeostasis, is essential for proper cellular activity. In addition to the hormonal changes linked to diseases of the reproductive organs, common endocrinological disorders such as diabetes mellitus, thyrotoxicosis, hypothyroidism, Cushing syndrome, and pituitary disorders must be addressed for comprehensive care. These illnesses are frequently seen in the practice of medicine. This module builds a strong clinical foundation by integrating the fundamental knowledge from the first spiral.

### **RATIONALE**

Endocrine illnesses, such as diabetes mellitus and diseases connected to the thyroid, are widespread throughout Pakistan. This module offers the foundation for third-year MBBS students to learn not only the knowledge application to understand the pathology but also the ability to connect anomalies with available treatments in the second curriculum spiral. Comprehensive care of common endocrine disorders such as Cushing syndrome, hypothyroidism, diabetes mellitus, thyrotoxicosis, and pituitary abnormalities requires an understanding of these conditions. These illnesses are frequently seen in the practice of medicine. This module builds a strong clinical foundation by thoroughly understanding the pharmacotherapy, integrating the fundamental knowledge from the first spiral.

### **LEARNING OBJECTIVES**

#### **Knowledge / Cognitive Domain:**

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

1. Explain the clinical applications of growth hormone and the side effects of adrenocorticotrophic (ACTH) hormones.
2. Describe the thyroxine's therapeutic benefits in treating hypothyroidism.
3. Describe the anti-thyroid drug's mode of action, benefits, and side effects.
4. Describe how iodine can be used to treat and prevent thyroid problems.
5. Sort diabetes mellitus according to the WHO classification system.
6. Explain the causes, symptoms, pathological alterations, consequences, and ways to prevent diabetes mellitus.
7. Explain the pharmacokinetics, mechanism of action, and side effects of oral hypoglycemic medications and insulin.
8. To outline and go over the function of hormone receptors in the action of hormones, including their kind, location, and signaling pathways.
9. To identify the pathophysiological causes and effects of particular endocrine illnesses by using endocrinological concepts.
10. Talk about the causes and effects of iodine deficiency as well as the key components of Pakistan's iodine control program.
11. Describe Pakistan's diabetes mellitus epidemiology from a global viewpoint.
12. Explain the various approaches to diabetes mellitus prevention and management.

#### **Skills / Psychomotor Domain:**

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

1. To understand the importance of Health Education and its role in prevention of diseases and promotion of Health of the communities

2. To equip with various skills of Communication and modes/methods of transferring health related knowledge to others, which will lead to positive behavior change.
3. Demonstrate the ability to perform the disease specific relevant examination
4. Respond to common medical emergencies
5. Master the skill of first aid
6. Perform BLS
7. Apply the best evidenced practices for local health problems

#### **Attitude / Affective Domain:**

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

1. Respect oneself and one's peers, both when providing and receiving comments.
2. To show patients compassion and understanding.
3. Develop your ability to communicate while keeping a sense of duty to your patients.
4. Showcase appropriate laboratory procedures.
5. Relate to patient and caregivers vulnerability
6. Demonstrate ethical self-management
7. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
8. Display compassion with patient and colleagues
9. Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease

#### **Outcomes of Endocrinology-II Module**

- A. Knowledgeable
- B. Skillful
- C. Community Health Promoter
- D. Problem-solver
- E. Professional
- F. Researcher
- G. Leader and Role Model

### THEMES FOR ENDOCRINOLOGY-II MODULE

SNO	Themes	Duration
1	<b>Non-neoplastic &amp; neoplastic diseases of Pituitary Gland</b>	1 week
2	<b>Non-neoplastic &amp; neoplastic diseases of Thyroid &amp; Parathyroid</b>	1 week
3	<b>Non-neoplastic &amp; neoplastic diseases of Pancreas</b>	1 week
4	<b>Non-neoplastic &amp; neoplastic diseases of Adrenal Gland</b>	1 week
5	<b>Multiple Endocrine Neoplasia Syndromes</b>	1 week



**SPECIFIC LEARNING OBJECTIVES**

**SUBJECT: PHARMACOLOGY**

<b>S No</b>	<b>LEARNING OBJECTIVES</b>	<b>TOPIC</b>	<b>TEACHING STRATEGY</b>	<b>ASSESSMENT</b>
1	Discuss the pharmacology of anterior pituitary growth hormone (Somatotropin)	<b>Endo-II PHA-1</b> Anterior pituitary hormones	Interactive Lecture	BCQs, SAQs, OSPE,
2	Classify the drugs used in Thyroid disorders Pharmacological effects of anti-thyroid drugs Discuss the drugs used for hypothyroidism	<b>Endo- II PHA-2</b> Introduction to Basic pharmacology of Thyroid drugs	Interactive Lecture	BCQs, SAQs, OSPE, VIVA
3	Drugs used in parathyroid disorders (Tetany)	<b>Endo- II PHA- 3</b> Parathyroid agents	Interactive Lecture	BCQs, SAQs,
4	Describe the pharmacology of insulin and benefits of glycemic control in diabetes mellitus type I	<b>Endo- II PHA-4</b> Pancreas (Insulin)	Interactive Lecture	BCQs, SAQs, OSPE,
5	Describe the drugs used in type II diabetes mellitus.	<b>Endo- II PHA-5</b> Non-Insulin antidiabetic agents	Interactive Lecture	BCQs, SAQs, OSPE,
6	Describe the pharmacokinetic pharmacodynamics clinical uses and toxicity of glucocorticoids	<b>Endo- II PHA-6</b> Corticosteroids (Glucocorticoids).	Interactive Lecture	BCQs, SAQs, OSPE,
7	Discuss the pharmacology of mineralo corticoids.	<b>Endo- II PHA-7</b> Mineralo corticoids	Interactive Lecture	BCQs, SAQs,
8	Discuss the corticosteroid antagonists	<b>Endo- II PHA-8</b> Corticosteroid antagonists	Interactive Lecture	BCQs, SAQs, OSPE,
9	Formulate prescription for a patient with Cushing's disease	<b>Endo- II PHA-P1</b> Cushing's Disease	Practicle	OSPE
10	Formulate prescription for a patient with Hypothyroidism	<b>Endo- II PHA-P2</b> Hypothyroidism	Practicle	OSPE,
11	Formulate prescription for a patient with Tetany	<b>Endo- II PHA-P3</b> Tetany	Practicle	OSPE

**SUBJECT: PATHOLOGY**

<b>S No</b>	<b>LEARNING OBJECTIVES</b>	<b>TOPIC</b>	<b>TEACHING STRATEGY</b>	<b>ASSESSMENT</b>
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1	Describe clinical manifestations of Anterior Pituitary gland disorders & Syndromes Describe the pathophysiology and Histologic features of <ul style="list-style-type: none"> <li>• Lactotroph Adenoma</li> <li>• Somatotroph Adenoma</li> <li>• Corticotroph Adenoma</li> <li>• Other Anterior Pituitary Tumors</li> </ul> Histologic features of Hypothalamic Suprasellar Tumors	<b>Endo-II-Path-1</b> Disorders and neoplasms of Pituitary gland.	Demonstration	BCQ'S SAQ's, OSPE
2	Describe the pathophysiology of <ul style="list-style-type: none"> <li>• -Hyperparathyroidism</li> <li>• Primary Hyperparathyroidism</li> <li>• Secondary Hyperparathyroidism</li> <li>• Hypoparathyroidism</li> <li>• Pseudohypoparathyroidism</li> </ul>	<b>Endo II-Path-2</b> Disorder of Parathyroid gland	Demonstration	BCQ'S, SAQ's, OSPE
3	Histology thyroid hormones T3 and T4 synthesis and functions. Pathophysiology, clinical features and laboratory diagnosis of simple and multinodular goiter. Toxic multinodular goiter	<b>Endo II-Path-3</b> Diseases of Thyroid gland Introduction Simple goiter and Multinodular goiter	Demonstration	BCQ'S SAQ's, OSPE
4	Hyperthyroidism and thyrotoxicosis. Primary and secondary hyperthyroidism. Pathophysiology causes, clinical features and laboratory diagnosis of Graves' disease Thyroid function and its interpretation	<b>Endo II-Path-4</b> Hyperthyroidism. Graves' disease Thyroid storm Apathetic hyperthyroidism	Interactive lecture	BCQ'S SAQ's, OSPE
5	Hypothyroidism its causes clinical features and laboratory diagnosis	<b>Endo II-Path-5</b> Hypothyroidism Cretinism Myxedema	Interactive lecture	BCQ'S, SAQ's, OSPE
6	Discuss Clinical and morphological features of : <ul style="list-style-type: none"> <li>• Hashimoto Thyroiditis</li> <li>• Subacute Lymphocytic Thyroiditis</li> <li>• Granulomatous Thyroiditis</li> </ul>	<b>Endo II-Path-6</b> Inflammatory diseases of Thyroid gland	Interactive lecture	BCQ'S, SAQ's, OSPE
7	Causes, pathogenesis, morphological features and laboratory diagnosis of thyroid adenoma and papillary carcinoma	<b>Endo II Path-7</b> Thyroid Neoplasms-I	Interactive lecture	BCQ'S, SAQ's, OSPE
8	Causes, pathogenesis, morphological features and laboratory diagnosis of follicular carcinoma, medullary carcinoma and anaplastic carcinoma.	<b>Endo II-Path-8</b> Thyroid Neoplasms-II	Interactive lecture	BCQ'S, SAQ's, OSPE

9	Glucose homeostasis, metabolic action of insulin and mechanism of insulin release. Classification of diabetes mellitus. Types of incretins. Impaired glucose tolerance test. Laboratory diagnosis of diabetes mellitus	<b>Endo II-Path-9</b> Disorder of Endocrine Pancreas Diabetes Mellitus-1	Interactive lecture	BCQ'S, SAQ's, OSPE
10	Pathogenesis of type -I and type-II diabetes mellitus, clinical presentation and complications of diabetes mellitus.	<b>Endo II-Path-10</b> Disorder of Endocrine Pancreas Diabetes mellitus-II	Interactive lecture	BCQ'S, SAQ's, OSPE
11	Discuss clinical presentation, pathogenesis and histologic features of Common Pancreatic Endocrine Neoplasms <ul style="list-style-type: none"> <li>• Hyperinsulinism (Insulinoma)</li> <li>• Zollinger-Ellison Syndrome (Gastrinoma)</li> <li>• Pancreatic carcinoid tumors</li> </ul>	<b>Endo II-Path-11</b> Pancreatic tumors	Interactive lecture	BCQ'S, SAQ's, OSPE
12	Describe the hyper-secretory & hypo-secretory disorders of adrenal cortex Adrenocortical Hyperfunction <ul style="list-style-type: none"> <li>• -Hypercortisolism (Cushing Syndrome)</li> <li>• -Primary Hyperaldosteronism</li> <li>• -Adrenogenital Syndromes</li> </ul> Adrenocortical Insufficiency <ul style="list-style-type: none"> <li>• -Primary Acute Adrenocortical Insufficiency</li> <li>• -Primary Chronic Adrenocortical Insufficiency (Addison Disease)</li> </ul> Discuss clinical presentation, pathogenesis and histologic features of Adrenocortical Neoplasms <ul style="list-style-type: none"> <li>• -Adrenocortical adenomas</li> <li>• -Pheochromocytoma.</li> </ul>	<b>Endo II-Path-12</b> Non-neoplastic diseases of adrenal cortex Neoplastic diseases of adrenal cortex & Medulla MEN-I & MEN-II	Demonstration	BCQ'S, SAQ's, OSPE
13	Laboratory interpretation of parathyroid gland diseases	<b>Endo II-Path- P1</b> Parathyroid gland Lab interpretation	Interactive Practical	BCQ'S, SAQ's, OSPE
14	Thyroid function test and its interpretation according to disease	<b>Endo II-Path- P2</b> Thyroid function tests	Interactive Practical	BCQ'S, SAQ's, OSPE
15	Neoplastic lesions of thyroid gland	<b>Endo II-Path- P3</b> Benign and malignant tumors of thyroid gland	Interactive Practical	BCQ'S, SAQ's, OSPE
16	Diabetes mellitus its type and laboratory interpretation	<b>Endo II-Path- P4</b> Diabetes mellitus Lab interpretation	Interactive Practical	BCQ'S, SAQ's, OSPE

**SUBJECT: COMMUNITY MEDICINE**

S No	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
1	<ul style="list-style-type: none"> <li>To understand the Health Education</li> <li>To discuss the importance of Health</li> <li>To describe the Aims and Objectives of Health Education</li> <li>To discuss various Principles of Health Education</li> <li>To describe the Stages of Health Education</li> </ul>	<b>Endo-II CM-1</b> Health Education: Concept, Aims and Objectives, Principles and Stages of Health Education	Interactive Lecture	BCQs, SAQs, OSPE, VIVA
2	<ul style="list-style-type: none"> <li>To describe term Communication and its various Methods</li> <li>To elaborate the Barriers of Communication and discuss how to overcome it.</li> </ul>	<b>Endo- II CM-2</b> Communication Methods, Barriers and skills in Health Education		
3	<ul style="list-style-type: none"> <li>To know how to organize a Health Education Program</li> <li>To understand the Terms of IEC, KAP and BCC, through an example</li> <li>To know the Steps of: Planning, Organizing and Evaluating the health education program</li> </ul>	<b>Endo- II CM- 3</b> Planning, Organizing and evaluating a Health Education Program		
4	<ul style="list-style-type: none"> <li>To define Family</li> <li>To discuss various types of Families</li> <li>To discuss the social evils and its consequences on Health</li> </ul>	<b>Endo- II CM-4</b> Types of Families, Social evils including Juvenile delinquency		

**SUBJECT: FORENSIC MEDICINE**

Themes	Topic	Learning Objectives	Teaching Strategy	Assessment
<b>Forensic</b>	<b>Endo II-FM-1</b>  Mental Illness	<ul style="list-style-type: none"> <li>Classify common mental illnesses.</li> <li>Define, classify and describe delusions, hallucinations, illusion, lucid interval, obsessions and schizophrenia with exemplification.</li> </ul>		SBA, SEQs,

<b>Psychiatry</b>	<b>Endo II-FM-2</b> Insanity	<ul style="list-style-type: none"> <li>• Define insanity. Differentiate between true insanity from feigned insanity.</li> <li>• Discuss Legal test of insanity i.e., McNaughton's Rule. Motives of feigned insanity.</li> </ul>	Lecture	OSPE & Viva Voce
	<b>Endo II-FM-3</b> Mental Health Ordinance	<ul style="list-style-type: none"> <li>• Describe the Mental Health ordinance 2001 with special reference to admission, care and discharge of a mentally ill person.</li> </ul>		
	<b>Endo II-FM-4</b> Civil and Criminal responsibilities of mentally ill	<ul style="list-style-type: none"> <li>• Describe Civil and criminal responsibilities of a mentally ill person.</li> <li>• Discuss Testamentary capacity</li> <li>• Discuss McNaghten rules, Durham rule and Currens rule</li> </ul>		
<b>Pediatric Forensic</b>	<b>Endo II-FM-5</b> Introduction Still born and dead born Signs of establishment of respiration Time of survival of live born	<ul style="list-style-type: none"> <li>• Define Infanticide &amp; Feticide</li> </ul>		
		<ul style="list-style-type: none"> <li>• Differentiate Still born baby &amp; Dead born baby</li> <li>• Define Maceration</li> </ul>		
		<ul style="list-style-type: none"> <li>• Describe Signs of live birth</li> <li>• Discuss Precipitate labor/Unconscious delivery</li> </ul>		
	<b>Endo II-FM-6</b> Causes of death  Autopsy	<ul style="list-style-type: none"> <li>• Discuss Criminal causes of death of new born babies i.e., Acts of commission and acts of omission</li> </ul>		

		<ul style="list-style-type: none"> <li>• Describe Autopsy on bodies of new born babies</li> </ul>
	<p style="text-align: center;"><b>Endo II-FM-7</b> Battered Baby Syndrome</p>	<p>Define Battered Baby Syndrome</p> <ul style="list-style-type: none"> <li>• Define Shaken Baby Syndrome</li> <li>• Define Battered Baby Syndrome or Caffey's Syndrome</li> <li>• Discuss Etiology of Battered baby Syndrome</li> <li>• Discuss Clinical Features of a battered baby</li> <li>• Describe Injuries seen in Shaken Baby Syndrome with mechanism</li> </ul>
	<p style="text-align: center;"><b>Endo II-FM-8</b> Sudden Infant death syndrome(SIDS)</p>	<ul style="list-style-type: none"> <li>• Define COT death (sudden infant death syndrome)</li> <li>• Discuss SIDS and various possibilities of death with postmortem findings and Medico legal importance of SIDS</li> </ul>
<b>Regional Injuries</b>	<p style="text-align: center;"><b>Endo II-FM-9</b> Introduction of Injuries</p>	<ul style="list-style-type: none"> <li>• Describe Head, general consideration and injuries to scalp &amp; Fractures of Skull.</li> </ul>
	<p style="text-align: center;">Injuries of Scalp &amp; Skull</p>	<ul style="list-style-type: none"> <li>• Classify injuries of scalp.</li> <li>• Describe Injuries of the scalp including forensic aspects of anatomy of the scalp and their medico legal aspects</li> </ul>

		<ul style="list-style-type: none"> <li>• Classify fractures of the skull including forensic aspects of anatomy of skull</li> <li>• Explain Mechanism of production of fractures of the skull and their medico legal significance</li> </ul>		
	<p align="center"><b>Endo II-FM-10</b> Intracranial Hemorrhages &amp; Brain Injuries</p>	<ul style="list-style-type: none"> <li>• Define Intracranial Hemorrhages</li> <li>• Differentiate types of intracranial hemorrhages along with forensic anatomy of blood vessels Commonly involved</li> <li>• Describe Signs and symptoms of different types of intracranial hemorrhages and methods to diagnose them</li> <li>• Explain Medico legal aspects of intracranial hemorrhages</li> </ul>	<p align="center">Interactive Lecture</p>	

		<ul style="list-style-type: none"> <li>• Define Brain Injuries, Spinal Injuries</li> <li>• Classify types of injuries to the brain and spine.</li> <li>• Discuss Mechanism of brain injuries such as Concussion/Contusion/ Irritation Coup and contre coup injuries with their mechanism</li> <li>• Define Brain injuries to boxers.</li> <li>• Describe Spinal injuries with special emphasis on Railway spine</li> <li>• Explain Medico legal aspects of brain and spinal injuries</li> </ul>	
	<p style="text-align: center;"><b>Endo II-FM-11</b> Face &amp; Neck Injuries</p>	<ul style="list-style-type: none"> <li>• Discuss Common Injuries of Face</li> <li>• Explain medico legal significance to the face.</li> </ul>	
		<ul style="list-style-type: none"> <li>• Discuss Neck including different cervical fractures, whiplash injuries, homicidal and suicidal cutthroat.</li> </ul>	
	<p style="text-align: center;"><b>Endo II-FM-12</b> Chest &amp; Abdominal Injuries</p>	<ul style="list-style-type: none"> <li>• Describe chest injuries including traumatic asphyxia, injuries to ribs, lungs, heart with special emphasis on penetrating injuries and Commotion Cordis.</li> </ul>	Interactive Lecture



		<ul style="list-style-type: none"> <li>• Describe Abdominal injuries with medico legal aspects of rupture of liver, spleen, injuries to abdominal aorta and intestines,</li> <li>• Define Pelvic injuries of medico legal significance</li> </ul>	Interactive Lecture	
	<p><b>Endo II-FM-13</b> Thermal Injury &amp; Electrocution</p>	<ul style="list-style-type: none"> <li>• Define electrical burn and its types</li> <li>• Enlist the body tissues that are resistant to electrical burn &amp; factors on which injury of electrical burn depends.</li> <li>• Describe the mortality of electrical burn</li> <li>• Define Features of injuries due to various types of electrical current. Describe Causes of death due to electrocution.</li> <li>• Discuss Lightning injuries and lightning deaths.</li> </ul>	Interactive Lecture	
<p><b>Special Toxicology</b></p>	<p>Organo phosphorus</p>	<ul style="list-style-type: none"> <li>• Describe common uses of organophosphorus.</li> <li>• Discuss the signs and symptoms of organophosphorus toxicity &amp; evaluation of a patient with suspected organophosphorus toxicity.</li> <li>• Explain treatment of organophosphorus toxicity &amp; medico legal</li> </ul>	Practical	<p>SBA, SEQs, OSPE &amp; Viva Voce</p>

		importance of it.		
	Naphthalene	<ul style="list-style-type: none"> <li>•Enlist the other names of Naphthalene</li> <li>•Discuss routes of transmission of Naphthalene in body</li> <li>•Describe the clinical features, investigation, treatment, fatal dose and fatal period of Naphthalene toxicity</li> <li>•Enlist the uses of Naphthalene</li> <li>•Discuss medico legal importance of naphthalene toxicity</li> </ul>		
	Veg Poison: Hydrocyanic Acid & Cyanides	<ul style="list-style-type: none"> <li>•Describe Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to hydrogen cyanide &amp; derivatives</li> </ul>		

**SUBJECT: MEDICINE**

S No	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
1	Describe clinical manifestations of the anterior & posterior pituitary gland.	<b>Endo-II MED-1</b> Hypopituitarism/ Pan hypopituitarism, GHD, Sheehan Syndrome. Diabetes Insipidus	Interactive Lecture	BCQs, SAQs, OSPE, VIVA
2	Describe the clinical features of pituitary tumors + Hypothalamic suprasellar tumors. Clinical features of Hyper function tumors + Mass effects	<b>Endo- II MED-2</b> Pituitary tumors + Hypothalamic suprasellar tumors	Interactive Lecture	

3	Describe the clinical features & management of & Hyperparathyroidism	<b>Endo- II MED-3</b> Primary+ Secondary+ tertiary. Hyperparathyroidism	Interactive Lecture	BCQs,SAQs, OSPE,VIVA
4	Describe the clinical features & management of hypoparathyroidism	<b>Endo- II MED-4</b> Primary+ Secondary+ tertiary. Hypoparathyroidism+Pseudo hypoparathyroidism	Interactive Lecture	
5	Discuss Clinical features of inflammatory thyroid disorders	<b>Endo- II MED-5</b> Thyroiditis. Hypothyroidism (Hashimoto thyroid disease, Myxedema and cretinism)	Interactive Lecture	
6	Discuss Clinical features of inflammatory thyroid disorders	<b>Endo- II MED-6</b> Hyperthyroidism (Graves' disease)	Interactive Lecture	
7	Discuss Toxic adenoma. Multinodular Goiter Simple Nontoxic goiter Types of thyroid carcinomas.	<b>Endo- II MED-7</b> Goiter + Adenoma + Thyroid Malignancies.	Interactive Lecture	
8	Describe Diabetes (Definition +WHO Classification). Management of diabetes.	<b>Endo- II MED-8</b> Diabetes Mellitus-I	Interactive Lecture	
9	Discuss Acute & chronic complications of diabetes.	<b>Endo- II MED-9</b> Diabetes Mellitus-II	Interactive Lecture	
10	Describe the clinical manifestations of Hyper functioning of the Adrenal gland. (Cortex)	<b>Endo- II MED-10</b> Cushing Syndrome	Interactive Lecture	
11	Describe the clinical manifestations of hypo functioning of the Adrenal gland. (Cortex)	<b>Endo- II MED-11</b> Adrenal insufficiencies (Addison disease)	Interactive Lecture	
12	Describe the clinical features of. Corticotrophin adenoma.	<b>Endo- II MED-12</b> Corticotrophin adenoma. (Cushing Syndrome of pituitary origin)	Interactive Lecture	
13	Discuss the Clinical manifestation of Adrenal Medullary tumors + paragangliomas	<b>Endo- II MED-13</b> Pheochromocytoma + paragangliomas	Interactive Lecture	

14	Discuss the genetic mutation in Endocrinology	<b>Endo- II MED-14</b> MEN-I, MEN-II, A&B	Interactive Lecture	
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**SUBJECT: SURGERY**

S No	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
1	Identify the indications for trans sphenoidal Hypophysectomy Describe the technique in regards to trans sphenoidal Hypophysectomy Outline the appropriate evaluation of the potential complications of trans sphenoidal Hypophysectomy Review some interprofessional team strategies for improving care, coordination and communication to advance transsphenoidal Hypophysectomy and improve outcomes	<b>Endo- II Surgery-1</b> Hypophysectomy		BCQs, SAQs, OSPE, VIVA
2	Identify the indications of Para thyroidectomy Describe the technique of Para thyroidectomy. Review the clinical significance of Para thyroidectomy. Summarize the potential complications of Para thyroidectomy	<b>Endo- II Surgery-2</b> Para thyroidectomy.	Interactive Lecture	
3	Identify the indications of adrenalectomy Describe the management of adrenalectomy Outline the complications of adrenalectomy	<b>Endo- II Surgery-3</b> Adrenalectomy	Interactive Lecture	

**TAGGED SUBJECTS**

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>PROFESSIONALISM AND BEHAVIORAL SCIENCES</b>						
<b>Attributes of professionalism</b>	Empathy levels & its application	Demonstrate empathy in patient-health professional interaction.	Group Discussion	Endocrinology	2	MCQ

<b>Listening skills</b>	Listening skills	Listen to the patient's problems	Group Discussion	Endocrinology	2	MCQ
<b>Communicate as a peer-teacher</b>	Knowing limitations	Recognizing the limits of one's knowledge and skills; and to ensure the accuracy of teaching content delivered to others	Group Discussion,	Endocrinology	2	MCQ
<b>RESEARCH</b>						
<b>Proposal writing</b>	Guidelines and Templates for proposal writing /synopsis writing	Write a proposal for research project using ISU guidelines or any other standard guidelines		Endocrinology	7	Assignment (develop a literature review and synopsis for your topic of interest)
<b>Referencing</b>	Bibliography  Intacts (secondary citation Mandelely / Zotero	Differentiate between references, citation & bibliography  List different styles of referencing Select appropriate referencing style for research project.	Lecture  Self-directed learning	Endocrinology	1	MCQ
	Explore and Practice free reference software Zotero for referencing (open access)	Apply referencing software to word document	Lecture  Small group format	Endocrinology	2	Assignment

## CLINICAL SCIENCES SUBJECTS

### ENDOCRINOLOGY – II MODULE

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
	Family Medicine	Thyroid Problems (goiter)	1	Lecture
	Common Complains	Acne	1	Lecture
		Hirsutism	1	Lecture
		Hypoglycemia	1	Lecture
		Hyperglycemia	1	Lecture

## CLINICAL ROTATION SCHEDULE

<b>Duration</b>	9 weeks	11 weeks	8 weeks	8 weeks
<b>Disciplines</b>	Medicine	Surgery	Gynae/Obs	Paeds
<b>Total hours*</b>	117	143	104	104

\* 2.6 Clinical rotation hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

## TEACHING HOURS ALLOCATION

S. No	Subject	Hours	Practical Hours
1	Pathology	16	8
2	Pharmacology	08	6
3	Forensic medicine	14	6
4	Community medicine	04	-
5	Medicine	14	-
6	Surgery	03	-
7	CBL (Pathology)*	8	-
8	CBL (Pharmacology)*	8	-
9	Family medicine	5	-
	<b>Total hours</b>	<b>80</b>	<b>20</b>

\*Minimum 2 hours are allotted for each CBL session per Module

S. No	Tagged Subject	Teaching Hours
1	Professionalism and behavioral sciences	6
2	Research	10
	<b>Total hours</b>	<b>16</b>

## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

1. Student must report to examination hall/venue, in time for smooth conduction of the exams.
2. No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
3. No students will be allowed to sit in exam without College ID Card, and Lab Coat
4. Students must sit according to their roll numbers mentioned on the seats.
5. Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
6. Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
7. Students must not possess any written material or communicate with their fellow students
8. Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
9. **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### ASSESSMENT

#### **Internal: Total 10% (20 marks)**

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

#### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

## METHODS OF ASSESSMENT

### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

### **Short Essay Questions (SEQs):**

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts



## ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## WEEKLY TESTS

The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.

It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.

Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

## POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD  
Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class  
PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
------------------------------------	-----------------	--------------------

80-100	4.0	<b>A+</b>
75-79	4.0	<b>A</b>
70-74	3.7	<b>A-</b>
67-69	3.3	<b>B+</b>
63-66	3.0	<b>B</b>
60-62	2.7	<b>B-</b>
56-59	2.3	<b>C+</b>
50-55	2.0	<b>C</b>
<50 Non gradable	0	<b>N</b>

- A student obtaining GPA less than 2.0 (50%) is declared fail or Non gradable

### ASSEMENT BLUEPRINT

#### ENDOCRINOLOGY-II MODULE

Assessment is based on Table of Specification (TOS)

	ASSEMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

### LEARNING RESOURCES

The learning resources for the educational contents of MBBS program are available for the students which assist learners to achieve the outcomes and by focusing on educational content. Ina addition; the names of the books for each subject as a learning resources is available with the educational content of the same subject.

Following learning resources can be used by the undergraduates;

- Books
- Evidence based articles from journals
- Digital library to search the material for self-directed learning
- Video Tapes
- Displays
- Models
- Phantom Heads
- Printed Notes

- Case based scenarios'
- Community Visits

Recommended Books THIRD YEAR MBBS			
General Pathology	Parasitology	Pharmacology	Microbiology
Robbins & Cotran Pathologic Basis Of Disease Vinay Kumar, Abul K. Abbas, Jon C. Aster 10 <sup>th</sup> Edition Brs Pathology (Board Review Series), Arthur S. Schneider, Philip A. Szanto, Schneider, Philip A. Szanto. 5 <sup>th</sup> Edition	<b>Parasitology P:rotozoology And Helminthology</b> K.D. Chatterjee, 13 <sup>th</sup> Edition	1. Lippincott Illustrated Reviews: Pharmacology Karen Whalen, Carinda Feild, Rajan Radhakrishnan <b>Pharmacology: Examination &amp; Board Review,</b> Anthony J. Trevor, Bertram G. Katzung, Marieke Knudering-Hall 12 <sup>th</sup> Edition	<b>Review Of Medical Microbiology &amp; Immunology Warren E. Levinson, 14<sup>th</sup> Edition</b>
<b>Community Medicine</b>	<b>Forensic Medicine And Toxicology</b>		
Park's Textbook Of Preventive And Social Medicine K. Park 26 <sup>th</sup> Edition  Text Book Of Community Medicine & Public Health Ilyas Shah Ansari 8 <sup>th</sup> Edition	<b>1. Principles And Practice Of Forensic Medicine</b> <b>Naseeb Awan 2<sup>nd</sup> Edition</b> <b>11. Parikh's Textbook Of Medical Jurisprudence, Forensic Medicine And Toxicology Parikh, C.K 6<sup>th</sup> Edition</b> <b>12. Simpson's Forensic Medicine Knight B 11<sup>th</sup> Edition</b> <b>13. Taylor's Principles And Practice Of Medical Jurisprudence Taylor Volume 1</b>		



**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you?    Y     N
- B. The course contents met with your expectations   
    l. Strongly disagree                      5. Strongly agree
- C. The lecture sequence was well-planned   
    l. Strongly disagree                      5. Strongly agree
- D. The contents were illustrated with   
    l. Too few examples                      5. Adequate examples
- E. The level of the course was   
    l. Too low                                      5. Too high
- F. The course contents compared with your expectations   
    l. Too theoretical                      5. Too empirical
- G. The course exposed you to new knowledge and practices   
    l. Strongly disagree                      5. Strongly agree
- H. Will you recommend this course to your colleagues?   
    l. Not at all                                      5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand   
    l. Strongly disagree                      5. Strongly agree
- B. The teaching aids were effectively used   
    l. Strongly disagree                      5. Strongly agree
- C. The course material handed out was adequate   
    l. Strongly disagree                      5. Strongly agree
- D. The instructors encouraged interaction and were helpful   
    l. Strongly disagree                      5. Strongly agree
- E. Were objectives of the course realized?    Yes     No

F. Please give overall rating of the course

90% - 100% (    )

60% - 70% (    )

80% - 90% (    )

50% - 60% (    )

70% - 80% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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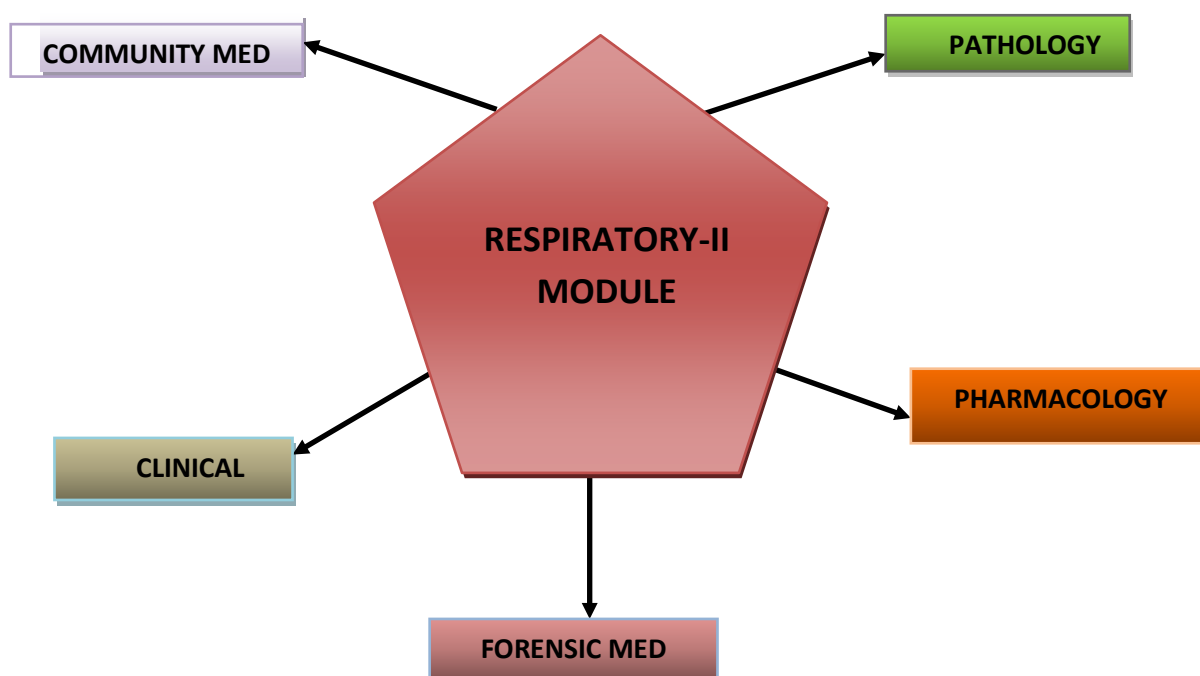


## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as CVS-II, Endocrine-II, Git and Liver-II, Hematology and oncology-II, Infectious Disease and Respiratory-II modules which link basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF RESPIRATORY-II MODULE



## MODULE OVERVIEW

### RESPIRATORY-II MODULE DETAILS

Course	MBBS
Year	Third professional
Duration	4 weeks
Learning Outcomes	The competent Medical Practitioner
Competencies covered	To develop medical professionals who are well - versed, adept, and have the right mindset.
Module Assessment	End module formative assessment
Teaching Methods	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning
Assessment Methods	MCQs, SEQs, OSPE, VIVA

## RESPIRATORY-II MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Dr. Bhawani Shankar	Pathology	Associate Professor
2.	Abid Laghari	Pharmacology	Lecturer
<b>COMMITTEE MEMBERS</b>			
<b>1.</b>	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
<b>2.</b>	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
<b>3.</b>	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

### Module objectives:

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

### Achievement of objectives:

- ✚ Focuses on information pertaining to examination policy, rules and regulations.

## . LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations
- Skills session
- Practicals
- Self-Directed Study

### • INTERACTIVE LECTURES:

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

### • SMALL GROUP DISCUSSIONS (SGDS):

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their



notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to pharmacology, microbiology, forensic medicine, and community medicine have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

This is the Respiratory-2 module. Welcome. This amazing module will be crucial to your future careers as physicians. With its interactive exercises, this module aims to make learning engaging and effective for you. By combining the study of fundamental pharmacology, pathology associated with respiratory system illnesses, and their pertinent clinical applications, this module offers a fundamental understanding (Horizontal Integration). Additionally, community medicine and forensic medicine (vertical integration). We are better preparing you for your future work as a doctor by using this technique, since patients will come to you with issues that are not labeled according to a specific discipline.

We have revised the basic science curriculum to center it around a few significant health-related scenarios (real-life events) that third-year medical students are likely to face in order to support your integrated learning. To help you understand the material and learn more effectively, you will be required to consider the situations and take part in case-based learning sessions. It will also assist you in concentrating on the goals you have set for yourself in relation to the lectures, exercises, and tutorials that are scheduled for this module.

## RATIONALE

Respiratory system illnesses are widespread worldwide. Morbidity and death are avoided when acute respiratory conditions like COPD and asthma are diagnosed and treated promptly. It is crucial to identify and

treat COPD and asthma illnesses as soon as possible in order to lessen the burden of disability on society. Diagnosis and treatment depend on an understanding of the anatomy, physiology, and interaction between the respiratory system and illness pathogenesis.

## LEARNING OBJECTIVES

### General Learning Outcomes:

At the end of this module, the students will be able to;

1. Understand the normal and abnormal structures and functions of respiratory system.
2. Interpret the biochemical changes in the body related to the respiratory system with reference of some common respiratory disorders.
3. Take history and perform a satisfactory physical examination of the respiratory system.
4. Describe normal changes that occur in respiratory system functioning from infancy to old age.
5. Formulate an appropriate plan for evaluating patients with respiratory signs and symptoms to achieve a reasonable differential diagnosis and to develop an investigative and management plan.
6. Diagnose, manage and prevent common respiratory diseases

### Knowledge / Cognitive Domain

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

1. Explain various lower respiratory tract infections
2. Explain obstructive respiratory diseases.
3. Describe various Granulomatous lung diseases
4. Prescribe medication according to guidelines for common respiratory disorders.
5. Describe medico legal aspect of asphyxial death.
6. Describe respiratory tract diseases of public health importance with emphasis on agent factors, epidemiology, preventive and control measures.
7. Describe management of common respiratory problems.

### Skills / Psychomotor Domain:

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

1. Demonstrate the ability to perform the disease specific relevant examination
2. Respond to common medical emergencies
3. Master the skill of first aid
4. Perform BLS
5. Apply the best evidenced practices for local health problems

### Attitude / Affective Domain:

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

1. Respect oneself and one's peers, both when providing and receiving comments.
2. To show patients compassion and understanding.
3. Develop your ability to communicate while keeping a sense of duty to your patients.
4. Showcase appropriate laboratory procedures.

### Outcomes of Respiratory-II Module

- A. Knowledgeable

- B. Skillful
- C. Community Health Promoter
- D. Problem-solver
- E. Professional
- F. Researcher
- G. Leader and Role Model

### THEMES FOR RESPIRATORY-II MODULE

SNO	Themes	Duration
1	<b>Lung Injury, Edema, Collapse &amp; Obstructive Pulmonary diseases</b>	1 week
2	<b>Chronic diffuse Interstitial/Restrictive Lung diseases</b>	1 week
3	<b>Vascular and Infectious Diseases.</b>	1 week
4	<b>Lung Tumors and Pleural diseases</b>	1 week

### SPECIFIC LEARNING OBJECTIVES

#### PATHOLOGY

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
<b>01</b>	Types & causes of Atelectasis Types & causes of pulmonary edema Define acute lung injury Describe the causes of ARDS Discuss the characteristic features, morphology and pathogenesis of ARDS Describe its consequences and clinical course	<b><u>RESP-II-PATH-1</u></b> Pulmonary Edema, ARDS & Atelectasis	Demonstration	BCQs, SAQs, OSPE, Viva
<b>02</b>	Define Obstructive lung disease (OPD) Classify types of OPD Describe etiology, pathogenesis & clinical features of chronic bronchitis + emphysema	<b><u>RESP-II-PATHO-2</u></b> Obstructive lung Diseases-I	Demonstration	BCQs, SAQs, OSPE, Viva
<b>03</b>	Describe categories of ASTHMA Explain pathogenesis Discuss the immunological mechanisms of bronchial asthma and its triggering factors - Gross features & morphological Features Define BRONCHIECTASIS Describe its causes, pathogenesis and Gross & morphological features	<b><u>RESP-II-PATHO-3</u></b> Obstructive lung diseases-II	Demonstration	BCQs, SAQs, OSPE, Viva

<b>04</b>	Describe major categories Explain the pathogenesis, morphology and clinical course of its important types idiopathic pulmonary fibrosis Non-specific Interstitial Pneumonia Cryptogenic organizing Pneumonia	<b><u>RESP-II-PATHO-4</u></b> Chronic diffuse interstitial lung diseases I- Restrictive lung diseases	Demonstration	BCQs, SAQs, OSPE, Viva
<b>05</b>	Describe major categories Explain the etiology, pathogenesis, gross, histological features of its important types like -Coal worker Pneumoconiosis .Silicosis, Asbestos-related diseases	<b><u>RESP-II-PATHO-5</u></b> Chronic diffuse interstitial lung diseases II- Pneumoconiosis	Demonstration	BCQs, SAQs, OSPE, Viva
<b>06</b>	Explain the etiology, pathogenesis, gross, histological features of Sarcoidosis -Hypersensitivity Pneumonitis -Pulmonary Eosinophilia	<b><u>RESP-II-PATHO-6</u></b> Chronic diffuse interstitial lung diseases III: Granulomatous Diseases	Demonstration	BCQs, SAQs, OSPE, Viva
<b>07</b>	Smoking-related -Desquamative Interstitial Pneumonia -PAP (Pulmonary Alveolar Proteinosis) -Respiratory bronchiolitis-associatedILD	<b><u>RESP-II-PATHO-7</u></b> Chronic diffuse interstitial lung diseases IV & smoking-related	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>08</b>	Explain the etiology, Pathogenesis & histological features of - Pulmonary Thromboembolism, HTN Good pasture syndrome	<b><u>RESP-II-PATHO-8</u></b> Pulmonary Thromboembolism, HTN & important Hemorrhagic Syndromes	Interactive Lecture	BCQs, SAQs, OSPE, Viva
<b>09</b>	Explain the pathogenesis of Granuloma formation Describe the five different clinical patterns of tuberculosis Define primary and secondary tuberculosis Describe lab diagnosis and complications	<b><u>RESP-II-PATHO-9</u></b> Tuberculosis	Demonstration	BCQs, SAQs, OSPE, Viva
<b>10</b>	Explain histological features of - Squamous dysplasia & Carcinoma insitu -Atypical adenomatous hyperplasia -Adenocarcinoma in situ -Diffuse idiopathic pulmonary neuroendocrine cell hyperplasia(DIPNECH)	<b><u>RESP-II-PATHO-10</u></b> Tumors Of Lung- 1	Interactive Lecture	BCQs, SAQs, OSPE, Viva

11	Explain the etiology, pathogenesis, gross, histological features of -Squamous cell carcinoma, Adenocarcinoma Neuroendocrine carcinomas	<b><u>RESP-II-PATHO-11</u></b> Tumors Of Lung-2	Interactive Lecture	BCQs, SAQs, OSPE, Viva
12	Explain the etiology, Pathogenesis and Clinical features of Pleural Effusion Pneumothorax Explain the etiology, Pathogenesis and Microscopic features of - Benign Tumors → Solitary fibrous tumor Malignant Tumors → Mesothelioma	<b><u>RESP-II-PATHO-12</u></b> Pleural diseases	Demonstration	BCQs, SAQs, OSPE, Viva
13		<b><u>RESP-II-PATHO-13</u></b> Pleural Fluid For DR	Practical	BCQ's, SAQ's OSPE, VIVA
14		<b><u>RESP-II-PATHO-14</u></b> Inflammatory Diseases of Lung	Practical	
15		<b><u>RESP-II-PATHO-15</u></b> Obstructive Diseases of Lung	Practical	
16		<b><u>RESP-II-PATHO-16</u></b> Tumors of Lung	Practical	

### PHARMACOLOGY

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
01	Classify the drugs used as Anti-tussive. Describe the mechanism of action, side effects of Anti-tussive drugs	<b><u>RESP-II-PHARMA-1</u></b> Drugs used as Anti-tussive	Interactive Lecture	BCQ's, SAQ's OSPE, VIVA
02	Classify the drugs used in TB Describe the mechanism of action and side effects of 1st and 2nd line anti-TB drugs	<b><u>RESP-II-PHARMA-2</u></b> Drugs used in TB	Interactive Lecture	
03	Classify the drugs used in Asthma and COPD. Describe the mechanism of action, side effects of beta-2 receptor Agonists, Phosphodiesterase inhibitors, Leukotrienes Pathway Inhibitors and Discuss the role of corticosteroids in asthma.	<b><u>RESP-II-PHARMA-3</u></b> Drugs used in Asthma and COPD I	Interactive Lecture	
04		<b><u>RESP-II-PHARMA-4</u></b> Drugs used in Asthma and COPD II	Interactive Lecture	

05	Write the proper prescription for Pulmonary Tuberculosis	<b><u>RESP-II-PHARMA-P1</u></b> Anti-TB Drugs	Practical	OSPE,
06	Write the proper prescription for Asthma	<b><u>RESP-II-PHARMA-P2</u></b> Anti-Asthmatic Drugs	Practical	OSPE,

### COMMUNITY MEDICINE

S.NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
01		<b><u>RESP-II-COMM MED-1</u></b> Methods of purification of water, Slow sand & rapid sand filters	Interactive Lecture	BCQ's, SAQ's OSPE, VIVA
02		<b><u>RESP-II-COMM MED-2</u></b> World Health Organization (W.H.O) criteria for purification of water/surveillance	Interactive Lecture	
03		<b><u>RESP-II-COMM MED-3</u></b> Hydrological cycle & sources of water pollution	Interactive Lecture	
04		<b><u>RESP-II-COMM MED-4</u></b> Health Hazards arising from consuming polluted water; water borne disease	Interactive Lecture	
05		<b><u>RESP-II-COMM MED-5</u></b> Radiation Hazards	Interactive Lecture	
06		<b><u>RESP-II-COMM MED-6</u></b> Disposal of waste Introduction, Public Health importance of waste management. methods of collection & disposal of refuse	Interactive Lecture	
07		<b><u>RESP-II-COMM MED-7</u></b> Methods of disposal of human excreta & sewage	Interactive Lecture	
08		<b><u>RESP-II-COMM MED-8</u></b> Hospital Waste management	Interactive Lecture	
09		<b><u>RESP-II-COMM MED-9</u></b> Healthful housing	Interactive Lecture	
10		<b><u>RESP-II-COMM MED-10</u></b> Noise pollution	Interactive Lecture	
11		<b><u>RESP-II-COMM MED-11</u></b> Effect of health and cold extremes	Interactive Lecture	

### FORENSIC MEDICINE

S.NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
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01		<b><u>RESP-II-FOR MED-1</u></b> Legal Terminology	Interactive Lecture	BCQ's, SAQ's OSPE, VIVA
02		<b><u>RESP-II-FOR MED-2</u></b> Autopsy 1	Interactive Lecture	
03		<b><u>RESP-II-FOR MED-3</u></b> Asphyxia (Intro)	Interactive Lecture	
04		<b><u>RESP-II-FOR MED-4</u></b> Evidence	Interactive Lecture	
05		<b><u>RESP-II-FOR MED-5</u></b> Autopsy 2	Interactive Lecture	
06		<b><u>RESP-II-FOR MED-6</u></b> Hanging & Throttling	Interactive Lecture	
07		<b><u>RESP-II-FOR MED-7</u></b> Medico legal Documents 1 ( Medico legal Reports)	Interactive Lecture	
08		<b><u>RESP-II-FOR MED-8</u></b> Autopsy 3	Interactive Lecture	
09		<b><u>RESP-II-FOR MED-9</u></b> Suffocation, Smothering & Chocking	Interactive Lecture	
10		<b><u>RESP-II-FOR MED-10</u></b> Medico legal Documents 2 ( Post-Mortem Reports)	Interactive Lecture	
11		<b><u>RESP-II-FOR MED-11</u></b> Autopsy 4	Interactive Lecture	
12		<b><u>RESP-II-FOR MED-12</u></b> Strangulation	Interactive Lecture	
13		<b><u>RESP-II-FOR MED-13</u></b> Alcohol	Demonstration / Tutorial Classes / Lab	BCQ's, SAQ's OSPE, VIVA
14		<b><u>RESP-II-FOR MED-14</u></b> Opium/Heroin/Cocaine		
15		<b><u>RESP-II-FOR MED-15</u></b> Fumigants		
16		<b><u>RESP-II-FOR MED-16</u></b> Hydrogen sulphide		

### CLINICAL CLASSES

S.NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
01	Approach to child with Wheezing	<b><u>RESP-II PAEDIATRICS:</u></b> Asthma in Children	Interactive Lecture	BCQ's, SAQ's OSPE,
02		<b><u>RESP-II PULMONOLOGY I:</u></b> <b>Obstructive lung diseases</b> A. Asthma B. COPD C. Bronchiectasis	Interactive Lecture	

03		<b>RESP-II PULMONOLOGY II:</b> <b>Pleural diseases</b> A. Pneumothorax B. Empyema	Interactive Lecture	VIVA
04		<b>RESP-II CARDIOTHORACIC SURGERY:</b> Chest Intubation in Trauma Patients	Interactive Lecture	

### TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>COMMUNICATION SKILLS</b>						
<b>Dealing with patients</b>	Professional behavior while dealing with patients	Adhere to professional behavior while dealing with patients	Group Discussion, Hospital teaching	Respiratory 2	2	MCQ
<b>LEADERSHIP AND MANAGEMENT</b>						
<b>Power dynamics</b>	Power dynamics over and empower	Delegate powers to juniors and team mates	Lecture, and Role Play	Respiratory 2	1	MCQ,

### CLINICAL SCIENCES SUBJECTS

#### RESPIRATORY –II MODULE

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>ANAESTHESIA</b>  Patient Monitoring during Anesthesia	Monitoring and care of patient during general anesthesia	2	Skills Session
		Recovery from Anesthesia	2	Skills Session
		Acute Pain management	1	Lecture
		Chronic Pain management	1	Lecture
2.	<b>ORTHOPAEDICS &amp; TRAUMA</b>	Application of plaster and paris cast	1	Lecture
		Skeletal traction / skin traction	1	Lecture
		Use of orthopedic instrument	1	Lecture
		Post-operative management	1	Lecture
3.	<b>FAMILY MEDICINE</b>  Common Respiratory problems	Upper Respiratory Tract Infections	1	Lecture
		Community Acquired Pneumonia	1	Lecture
		TB	1	Lecture
		Occupational Respiratory diseases	1	Lecture
		Acute Respiratory presentations	1	Lecture

### CLINICAL ROTATION SCHEDULE



<b>Duration</b>	9 weeks	11 weeks	8 weeks	8 weeks
<b>Disciplines</b>	Medicine	Surgery	Gynae/Obs	Paeds
<b>Total hours*</b>	117	143	104	104

\* 2.6 Clinical rotation hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

### TEACHING HOURS ALLOCATION

S. No	Subject	Hours	Practical Hours
1	Pathology	20	8
2	Pharmacology	4	4
3	Forensic medicine	16	-
4	Community medicine	11	-
5	Pediatrics	1	-
6	Pulmonology	2	-
7	Cardiothoracic Surgery	1	-
8	CBL (Pathology)*	8	-
9	CBL (Pharmacology)*	8	-
10	Anesthesia	6	-
11	Orthopaedics & Trauma	4	-
12	Family Medicine	5	-
	<b>Total hours</b>	<b>86</b>	<b>12</b>

\*Minimum 2 hours are allotted for each CBL session per Module

S. No	Tagged Subject	Teaching Hours
1	Communication Skills	2
2	Leadership and Management	1
	<b>Total hours</b>	<b>3</b>

## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

1. Student must report to examination hall/venue, in time for smooth conduction of the

#### Exams

2. No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time
3. No students will be allowed to sit in exam without College ID Card, and Lab Coat
4. Students must sit according to their roll numbers mentioned on the seats.
5. Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
6. Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
7. Students must not possess any written material or communicate with their fellow students
8. Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
9. **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### ASSESSMENT

#### Internal: Total 10% (20 marks)

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

#### University Annual Exam: Total 90%

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

### METHODS OF ASSESSMENT

#### Multiple Choice Questions

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

#### **Short Essay Questions (SEQs):**

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

#### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

#### **ASSIGNMENTS**

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.

- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### WEEKLY TESTS

The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.

It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.

Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

### POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD
- Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class
- PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail or Non gradable

## ASSESSMENT BLUEPRINT

### REPIRATORY-II MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

### LEARNING RESOURCES

The learning resources for the educational contents of MBBS program are available for the students which assist learners to achieve the outcomes and by focusing on educational content. In addition; the names of the books for each subject as a learning resources is available with the educational content of the same subject.

Following learning resources can be used by the undergraduates;

- Books
- Evidence based articles from journals
- Digital library to search the material for self-directed learning
- Video Tapes
- Displays
- Models
- Phantom Heads
- Printed Notes
- Case based scenarios'
- Community Visits

#### Recommended Books THIRD YEAR MBBS

General Pathology	Parasitology	Pharmacology	Microbiology
Robbins & Cotran Pathologic Basis Of Disease Vinay Kumar, Abul K. Abbas, Jon C. Aster 10 <sup>th</sup> Edition Brs Pathology (Board Review Series), Arthur S. Schneider, Philip A.	<b>Parasitology P:rotozoology And Helminthology</b> K.D. Chatterjee, 13 <sup>th</sup> Edition	1. Lippincott Illustrated Reviews: Pharmacology Karen Whalen, Carinda Feild, Rajan Radhakrishnan Pharmacology: Examination & Board Review, Anthony J. Frevor, Bertram G. Katzung, Marieke Knudering-Hall 12 <sup>th</sup>	<b>Review Of Medical Microbiology &amp; Immunology</b> Warren E. Levinson, 14 <sup>th</sup> Edition

<p>Szanto, Schneider, Philip A. Szanto. 5th<sup>th</sup> Edition</p>		Edition	
<p>Community Medicine</p>	<p>Forensic Medicine And Toxicology</p>		
<p>Park's Textbook Of Preventive And Social Medicine K. Park 26<sup>th</sup> Edition</p> <p>Text Book Of Community Medicine &amp; Public Health Ilyas Shah Ansari 8<sup>th</sup> Edition</p>	<p>1. Principles And Practice Of Forensic Medicine Naseeb Awan 2<sup>nd</sup> Edition</p> <p>14. Parikh's Textbook Of Medical Jurisprudence, Forensic Medicine And Toxicology Parikh, C.K 6<sup>th</sup> Edition</p> <p>15. Simpson's Forensic Medicine Knight B 11<sup>th</sup> Edition</p> <p>16. Taylor's Principles And Practice Of Medical Jurisprudence Taylor Volume 1</p>		



**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you? Y  N
- B. The course contents met with your expectations  
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned  
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with  
l. Too few examples 5. Adequate examples
- E. The level of the course was  
l. Too low 5. Too high
- F. The course contents compared with your expectations  
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices  
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?  
l. Not at all 5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand  
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used  
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate  
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful  
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes  No

F. Please give overall rating of the course

90% - 100% (    )

80% - 90% (    )

70% - 80% (    )

60% - 70% (    )

50% - 60% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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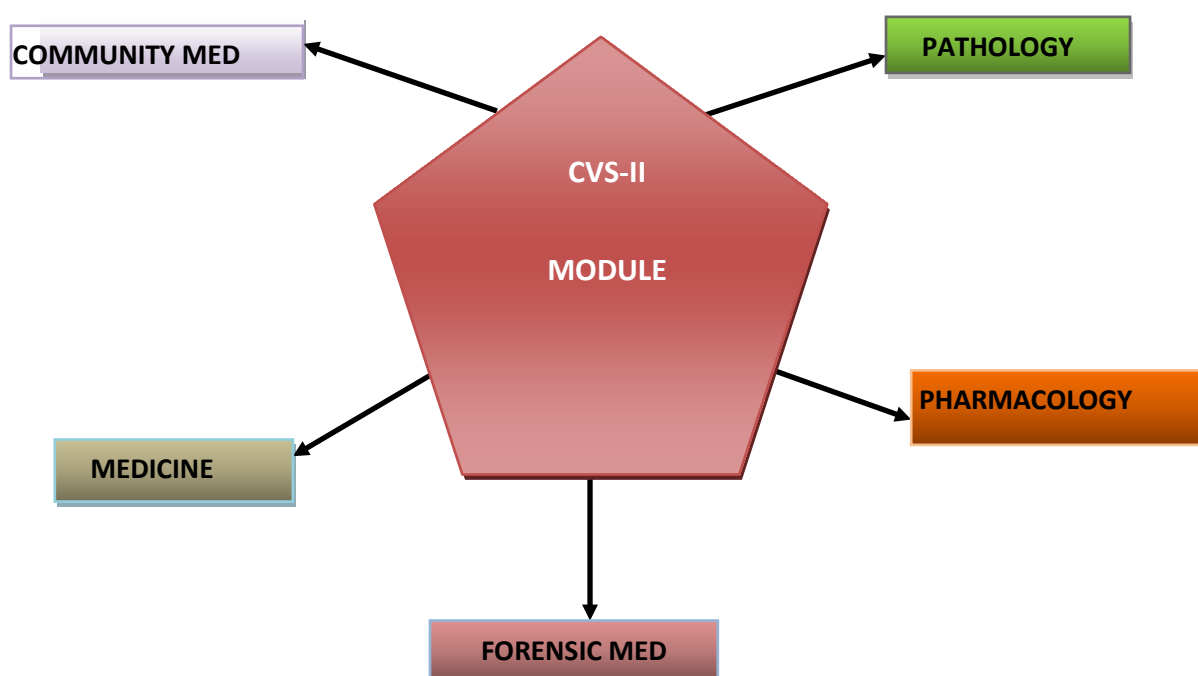


## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as CVS-II, Endocrine-II, Git and Liver-II, Hematology and oncology-II, Infectious Disease and Respiratory-II modules which link basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF CVS-II MODULE



## MODULE OVERVIEW

### CVS-II MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Third professional
<b>Duration</b>	5 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment

<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

### CVS-II MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Dr. Bhawani Shankar	Pathology	Associate Professor
2.	Mr. Abid Laghari	Pharmacology	Lecturer
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### Module objectives:

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

#### Achievement of objectives:

- ✚ Focuses on information pertaining to examination policy, rules and regulations.

### EARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations
- Skills session
- Practicals
- Self-Directed Study
- **INTERACTIVE LECTURES:**  
Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.
- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to pharmacology, microbiology, forensic medicine, and community medicine have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

The most prevalent causes of morbidity and death worldwide are cardiovascular diseases, which include valvular abnormalities, hypertension, ischemic heart disease, and cardiac failure. Therefore, it is expected of a medical graduate to handle these issues in the general public. This module uses prior knowledge of anatomy, physiology, and biochemistry to teach pathology and pharmacology linked to the cardiovascular system. In order for the student to expand on their understanding of clinical presentation, diagnostic tests, and management of cardiovascular illnesses, a strong emphasis is placed on clinical correlation and problem-solving.

Aside from that, this fascinating new module also includes the concurrently offered but related courses in Behavioral Sciences, Community Medicine, and Toxicology and Forensic Medicine.

## RATIONALE

Throughout the world, cardiovascular diseases rank among the leading causes of illness and mortality. Incidence of these conditions is rising in Pakistan in tandem with urbanization. After qualifying, a medical graduate would be expected to address conditions such as hypertension, ischemic heart disease, atherosclerosis, congenital and

rheumatic valvular abnormalities. The student will be able to expand on the knowledge of clinical presentation, diagnostic investigations, and management of cardiovascular disorders with the foundation of knowledge gained in the cardiovascular module of the first cycle, which includes anatomy, physiology, pharmacology, and the fundamentals of cardiovascular diseases.

## LEARNING OBJECTIVES

### Knowledge / Cognitive Domain

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

1. Describe pathogenesis & clinical presentations of common cardiovascular disorders
2. Take history, perform physical examinations of cardiovascular system and formulate appropriate plan of investigations for making a diagnosis.
3. Interpret the investigations for diagnosis.
4. Describe the pharmacology of drugs used in the management of cardiovascular disorders.
5. Practice basic principles of management of cardiovascular disorders.
6. Recognize preventive measures & prognosis for counseling the patients

### Skills / Psychomotor Domain:

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

1. Demonstrate the ability to perform the disease specific relevant examination
2. Respond to common medical emergencies
3. Master the skill of first aid
4. Perform BLS
5. Apply the best evidenced practices for local health problems

### Attitude / Affective Domain:

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

1. Respect oneself and one's peers, both when providing and receiving comments.
2. To show patients compassion and understanding.
3. Develop your ability to communicate while keeping a sense of duty to your patients.
4. Showcase appropriate laboratory procedures.
5. Relate to patient and careers vulnerability
6. Demonstrate ethical self-management
7. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
8. Display compassion with patient and colleagues
9. Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease

### Outcomes of Cardiovascular-II Module

- A. Knowledgeable
- B. Skillful
- C. Community Health Promoter
- D. Problem-solver
- E. Professional
- F. Researcher
- G. Leader and Role Model

## THEMES FOR CVS-II MODULE

SNO	Themes	Duration
1	Hypertension	1 week
2	Atherosclerosis	1 week
3	Myocardial Diseases	1 week
4	Diseases of Vessels	1 week
5	Pericardial and endocardial diseases, and cardiac tumors	1 week

## SPECIFIC LEARNING OBJECTIVES

### PATHOLOGY

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
01	<b>Define</b> hypertension and <b>classify</b> its causes. <b>Discuss</b> the pathogenesis of Hypertension Vascular Pathology in Hypertension.	<b>CVS-II-PATHO-1</b> Hypertensive Vascular Disease	Interactive Lecture	BCQs, SAQs, OSPE, Viva
02	<b>Define</b> Hypertensive heart disease. <b>Differentiate</b> between systemic (Left-Sided) HHD and Pulmonary (Right-Sided) HHD (Cor Pulmonale). <b>Describe</b> the diagnostic features and morphology of Systemic and Pulmonary HHD. <b>Describe</b> various disorders Predisposing to HHD.	<b>CVS-II-PATHO-2</b> Hypertensive heart disease (HHD)	Demonstration	BCQs, SAQs, OSPE, Viva
03	<b>Describe</b> the pathogenesis of Atherosclerosis. <b>Discuss</b> the morphological features of Atherosclerosis. <b>Discuss</b> the complications of Atherosclerosis.	<b>CVS-II-PATHO-3</b> Atherosclerosis	Interactive Lecture	BCQs, SAQs, OSPE, Viva
04	<b>Define</b> Ischemic Heart Disease with its types. <b>Define</b> Angina Pectoris with its pathogenesis, patterns, morphological changes, clinical features, and complications. <b>Define</b> Myocardial Infarction with its pathogenesis, patterns, morphological changes, clinical features, and complications	<b>CVS-II-PATHO-4</b> Ischemic Heart Disease	Interactive Lecture	BCQs, SAQs, OSPE, Viva
05	<b>Define</b> Cardiomyopathy and <b>classify</b> it. <b>Describe</b> the pathogenesis, patterns, morphological changes, clinical features, and complications of various cardiomyopathies.	<b>CVS-II-PATHO-5</b> Cardiomyopathies	Interactive Lecture	BCQs, SAQs, OSPE, Viva

06	<p><b>Define</b> valvular stenosis and insufficiency.</p> <p><b>Describe</b> the causes of the major valvular lesions.</p> <p><b>Describe</b> the natural history of Rheumatic Fever.</p> <p><b>Describe</b> Calcific Valvular Degeneration and characterize it.</p> <p><b>Discuss</b> the morphology and clinical features.</p>	<p><b>CVS-II-PATHO-6</b> Valvular Heart Disease and Rheumatic Heart Disease</p>	Demonstration	BCQs, SAQs, OSPE, Viva
07	<p><b>Define</b> vasculitis and <b>classify</b> primary forms.</p> <p><b>Describe</b> causes and mechanisms.</p> <p><b>Describe</b> the typically involved vascular sites.</p> <p><b>Describe</b> the following and <b>characterize</b> them: Giant Cell (Temporal) Arteritis Thromboangiitis Obliterans (Buerger Disease)</p>	<p><b>CVS-II-PATHO-7</b> Vasculitis</p>	Interactive Lecture	BCQs, SAQs, OSPE, Viva
08	<p><b>Describe</b> varicose veins and their clinical features.</p> <p><b>Differentiate</b> between Thrombophlebitis and Phlebothrombosis based on pathogenesis and clinical features.</p> <p><b>Describe</b> Lymphangitis and Lymphedema.</p>	<p><b>CVS-II-PATHO-8</b> Diseases of Veins and Lymphatics</p>	Interactive Lecture	BCQs, SAQs, OSPE, Viva
09	<p><b>Classify</b> vascular tumors and tumor-like conditions.</p> <p><b>Describe</b> the pathogenesis, morphology, and clinical characteristics of the following:</p> <ul style="list-style-type: none"> <li>• Hemangiomas</li> <li>• Lymphangiomas</li> <li>• Intermediate-Grade (Borderline) Tumors</li> <li>• Malignant Tumors</li> </ul>	<p><b>CVS-II-PATHO-9</b> Vascular Tumors</p>	Interactive Lecture	BCQs, SAQs, OSPE, Viva
10	<p><b>Describe</b> the pathogenesis, morphology, and clinical characteristics of IE, Pericarditis, and cardiac tumors.</p>	<p><b>CVS-II-PATHO-10</b> Infective Endocarditis (IE), Pericarditis, and Tumors of the Heart</p>	Interactive Lecture	BCQs, SAQs, OSPE, Viva
11	<p><b>Interpret</b> the following on a given biochemical report:</p>	<p>a) Lipid Profile b) Cardiac Enzymes c) Pericardial Effusion</p>	Practical	OSPE, Viva
12	<p><b>Interpret</b> the gross and microscopic features of the following on a given histopathology report:</p>	<p>a) Hemangiomas b) Cardiac Myxoma</p>	Practical	OSPE, Viva

**PHARMACOLOGY**

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
01	<b>Classify</b> the antihypertensive agents based on the mechanism of action. <b>Describe</b> the hemodynamic responses, adverse effects, and drug interactions of antihypertensive agents.	<b>CVS-II-PHARMA-1</b> Drugs used to treat Hypertension	Interactive Lecture	BCQ's, SAQ's OSPE, VIVA
02	<b>Classify</b> the Hypolipidemic drugs according to their mode of action. <b>Describe</b> the clinical uses, drug interactions, and adverse effects of hypolipidemic drugs.	<b>CVS-II-PHARMA-2</b> Drugs to treat Hyperlipidemia	Interactive Lecture	BCQ's, SAQ's OSPE, VIVA
03	<b>Classify</b> anti-anginal drugs based on their mechanism of action. <b>Describe</b> adverse effects and drug interaction of antianginal drugs.	<b>CVS-II-PHARMA-3</b> Drugs used to treat Ischemic Heart Disease	Interactive Lecture	BCQ's, SAQ's OSPE, VIVA
04	<b>List</b> the major classes of anti-arrhythmic drugs based on their mechanism of action. <b>Describe</b> the clinical use, drug interactions, and adverse effects of anti-arrhythmic drugs.	<b>CVS-II-PHARMA-4</b> Drugs used to treat Cardiac Arrhythmias	Demonstration	BCQ's, SAQ's OSPE, VIVA
05	<b>Classify</b> the major classes of drugs used to treat congestive cardiac failure based on their mechanism of action. <b>Describe</b> the pharmacokinetics, mechanism of action, indications, and adverse effects of drugs used in acute and chronic heart failure. <b>Describe</b> the clinical use, drug interactions, and adverse effects of drugs used in CCF.	<b>CVS-II-PHARMA-5</b> Drugs used to treat Congestive Cardiac Failure	Demonstration	BCQ's, SAQ's OSPE, VIVA
08	<b>Identify</b> the following in a given prescription:	a) Drug-Drug interactions b) Flaws	Practical	OSPE, Viva
09	<b>Write</b> down a prescription based on a given scenario.	a) Dyslipidemia	Practical	OSPE, Viva
10	<b>Construct</b> a prescription for a patient with Myocardial Infarction	Myocardial Infarction	Practical	OSPE, Viva
11	<b>Construct</b> a prescription for a patient with Hypertension	Hypertension	Practical	OSPE, Viva
12	<b>Construct</b> a prescription for a patient with Congestive Cardiac Failure	Congestive Cardiac Failure	Practical	OSPE, Viva

### COMMUNITY MEDICINE



S.NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
01	<p>To understand the aim of the program</p> <p>To understand the objectives of the program</p> <p>To know the major challenges to development in the 21st century</p> <p>To understand Socioeconomic impacts of NCDs</p> <p>To differentiate in between modifiable and non-modifiable risk factors related to NCDs.</p> <p>To understand Operational Impediments In Pakistan for Implementation of National Action Plan</p>	<p><u>CVS-II-COMMMED-1</u></p> <p>Introduction and national action program for prevention and control of non-communicable disease and health promotion</p>	Interactive Lecture	BCQ's, SAQ's OSPE, VIVA
02	<p>Define Cardiovascular disease (CVD)</p> <p>Elaborate the concept of CVD risk stratification</p> <p>Describe the epidemiology of cardiovascular diseases and explain cardiovascular diseases of Public Health importance globally and in Pakistan</p> <p>Explain the known risk factors of CVD and cultural, racial and gender difference in CVD prevalence and incidence</p> <p>Role of diet and nutrition / lifestyle modification</p> <p>Describe the epidemiology of hypertension and its public Health importance globally and in Pakistan</p>	<p><u>CVS-II-COMM MED-2</u></p> <p>Coronary heart diseases and its prevention/ Hypertension</p>	Interactive Lecture	
03	<p>To understand the magnitude of cancer problem in Pakistan.</p> <p>To understand the epidemiological features of cancer.</p> <p>To describe different causes of cancer To explain screening of cancer</p> <p>To describe risk factors of cancer</p> <p>To explain the control measures and prevention of cancer</p>	<p><u>CVS-II-COMMMED-3</u></p> <p>Epidemiology &amp; control measures of cancer</p>	Interactive Lecture	

04	To define Epidemiology of snake bite To understand the Habitat of snakes in Pakistan To describe Clinical features, local and Systematic symptoms, and signs To discuss Snake bite prevention To describe First aid for snake bite To define Management and treatment of snake bite To understand the Importance of anti-snake venom	<u>CVS-II-COMMED-4</u> Snake Bite	Interactive Lecture	
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**SUBJECT: FORENSIC MEDICINE**

S.NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
01	List various courts of law in Pakistan Discuss Supreme court and its jurisdiction and powers Discuss Federal Shariat Court jurisdiction and powers Discuss High Court jurisdiction and powers Discuss District Session and Civil Court jurisdiction and powers	<u>LEGAL PROCEDURES –II</u>  <u>CVS-II-FORMED-1</u> Court System in Pakistan	Interactive Lecture	BCQ's, SAQ's OSPE, VIVA
02	Discuss Legal procedures of courts of law	<u>CVS-II-FORMED-2</u> Legal Procedures of Courts	Interactive Lecture	
03	Describe the Documents prepared by a medical man (Certificates such as birth certificate, death certificate, consent form, Prescription writing, sickness certificates, certificates of fitness to drive a vehicle, certificate for estimate of age)	<u>CVS-II-FORMED-3</u> Medical Documents 1 & 2	Interactive Lecture	
04	Discuss Internal examination of thoracic and abdominal cavities Describe Dissection of respiratory tract Describe Dissection of heart Describe Dissection of abdominal viscera Describe Dissection of pelvic organs Describe Dissection of Spinal cord	<u>AUTOPSY – II</u>  <u>CVS-II-FORMED-4</u> Internal Examinations 1 & 2	Interactive Lecture	

05	Explain Preservation of viscera for Chemical and Histo-pathological examination Explain Preservatives used in mortuary	<u>CVS-II-FOR MED-5</u> Collection, Preservation & Dispatch (CPD)	Interactive Lecture	
06	Explain Exhumation and Postmortem artifact	<u>CVS-II-FOR MED-6</u> Exhumation	Interactive Lecture	

07	Define Drowning, its types Discuss Mechanism of drowning Describe Causes of death in drowning Discuss Postmortem finding of drowning Define Diatoms and their medico legal significance	<u>ASPHYXIA-II</u>  <u>CVS-II-FOR MED-7</u> Drowning	Interactive Lecture	OSPE, VIVA
08	Discuss Traumatic Asphyxia	<u>CVS-II-FOR MED-8</u> Traumatic Asphyxia	Interactive Lecture	
09	Discuss Sexual asphyxia (auto eroticasphyxia)	<u>CVS-II-FOR MED-9</u> Sexual Asphyxia	Interactive Lecture	
10	Classify corrosive poisons. Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to: Caustics Inorganic – sulphuric, nitric, and hydrochloric acids; Organic- Carbolic Acid (phenol), Oxalic and acetylsalicylic acids	Corrosives	<u>Special Toxicology Demonstration/ Tutorial Classes</u>	
11	Discuss sources, fatal dose and fatal period and treatment Discuss postmortem appearance and medico-legal importance	Nicotine poisoning		
12	Discuss Introduction to the poison Describe sign, symptoms, fatal dose and fatal period, treatment of a poison. Discuss postmortem appearance and medico-legal importance.	Aconite poisoning		
13	Classify types of snakes Discuss Diagnosis of a snake bite, sign & symptoms and treatment Discuss postmortem appearance and medico-legal importance.	Snake bite		

#### CLINICAL – CARDIOLOGY

S. NO	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
01	<b>Describe</b> the sign and symptoms of RF and RHD <b>Describe</b> the drugs used to treat RHD and their adverse effects	<u>CVS-II-CARDIO-1</u> Rheumatic Fever and Rheumatic Heart Disease (RHD)	Interactive Lecture	BCQ's, SAQ's OSPE, VIVA

02	<p><b>Describe</b> the sign and symptoms of pericarditis, myocarditis, and infective endocarditis.</p> <p><b>Describe</b> the treatment of pericarditis, myocarditis, and infective endocarditis.</p>	<p><b>CVS-II-CARDIO-2</b> Cardiac inflammation</p>	Interactive Lecture	BCQ's, SAQ's OSPE, VIVA
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### TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>COMMUNICATION SKILLS</b>						
<b>Counselling skills</b>	Counselling skills	Develops counselling skills in professional life	Lecture/ Group Discussion	CVS-2	2	MCQ
<b>Informed consent</b>	Informed consent Special Situations	Obtaining informed consent	Lecture Bedside teaching	CVS -2	2	MCQ
<b>Positive attitude</b>	Positive attitude processes	Exhibit positive Attitude and Outlook in workplace environment	Bedside/community Visit	CVS-2	2	MCQ
<b>LEADERSHIP AND MANAGEMENT</b>						
<b>SWOT Analysis</b>	SWOT Analysis	Perform SWOT analysis for a particular task	Group Discussion	CVS 2	1	MCQ,
<b>RESEARCH</b>						
<b>GANTT Chart</b>	How to make a GANTT Chart	Make a GANTT Chart for a research project	Hands-on exercise in computer lab	CVS 2	1	MCQ and Assignment

### CLINICAL SCIENCES SUBJECTS

CVS-II MODULE				
S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>ANAESTHESIA</b> Patient Monitoring	Perioperative management Post-operative Care ICU Monitoring	2 2 2	Skills Session Skills Session Skill Session
2.	<b>ORTHOPAEDICS &amp; TRAUMA</b> General Surgery goals	Pre-operative evaluation of the surgical patient. post-operative patient care including fluid and electrolytes status	2 2	Skill session Skill session
3.	<b>FAMILY MEDICINE</b> Common Complaints	Chest pains Dyspnea Abdominal pains	1 1 1	Lecture Lecture Lecture

	Poisoning	1	Lecture
	Adult BLS	1	Lecture

### CLINICAL ROTATION SCHEDULE

<b>Duration</b>	9 weeks	11 weeks	8 weeks	8 weeks
<b>Disciplines</b>	Medicine	Surgery	Gynae/Obs	Paeds
<b>Total hours*</b>	117	143	104	104

\* 2.6 Clinical rotation hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

### TEACHING HOURS ALLOCATION

S. No	Subject	Hours	Practical Hours
1	Pathology	12	4
2	Pharmacology	7	10
3	Forensic medicine	13	-
4	Community medicine	4	-
5	Medicine (Cardiology)	2	-
6	CBL (Pathology)*	10	-
7	CBL (Pharmacology)*	10	-
8	Anesthesia	6	
9	Orthopaedics & Trauma	4	
10	Family medicine	5	
	<b>Total hours</b>	<b>73</b>	<b>14</b>

\*Minimum 2 hours are allotted for each CBL session per Module

S. No	Tagged Subject	Teaching Hours
1	Communication Skills	6
2	Leadership and Management	1
3	Research	1

	<b>Total hours</b>	<b>8</b>
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## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

1. Student must report to examination hall/venue, in time for smooth conduction of the exams.
2. No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
3. No students will be allowed to sit in exam without College ID Card, and Lab Coat
4. Students must sit according to their roll numbers mentioned on the seats.
5. Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
6. Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
7. Students must not possess any written material or communicate with their fellow students
8. Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
9. **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### ASSESSMENT

#### **Internal: Total 10% (20 marks)**

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

#### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

### METHODS OF ASSESSMENT

### Multiple Choice Questions

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

### Short Essay Questions (SEQs):

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

### OSPE / OSCE

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

### ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.

- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### WEEKLY TESTS

The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.

It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.

Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

### POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD

Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class

PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail or Non gradable

### ASSESSMENT BLUEPRINT



## CVS-II MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

### LEARNING RESOURCES

The learning resources for the educational contents of MBBS program are available for the students which assist learners to achieve the outcomes and by focusing on educational content. In addition; the names of the books for each subject as a learning resources is available with the educational content of the same subject.

Following learning resources can be used by the undergraduates;

- Books
- Evidence based articles from journals
- Digital library to search the material for self-directed learning
- Video Tapes
- Displays
- Models
- Phantom Heads
- Printed Notes
- Case based scenarios'
- Community Visits

#### Recommended Books THIRD YEAR MBBS

General Pathology	Parasitology	Pharmacology	Microbiology
Robbins & Cotran Pathologic Basis Of Disease Vinay Kumar, Abul K. Abbas, Jon C. Aster 10 <sup>th</sup> Edition Brs Pathology (Board Review Series), Arthur S. Schneider, Philip A. Szanto, Schneider, Philip A. Szanto. 5 <sup>th</sup> Edition	<b>Parasitology P:rotozoology And Helminthology K.D. Chatterjee, 13<sup>th</sup> Edition</b>	1. Lippincott Illustrated Reviews: Pharmacology Karen Whalen, Carinda Feild, Rajan Radhakrishnan <b>Pharmacology: Examination &amp; Board Review, Anthony J. Trevor, Bertram G. Katzung, Marieke Knudering-Hall 12<sup>th</sup> Edition</b>	<b>Review Of Medical Microbiology &amp; Immunology Warren E. Levinson, 14<sup>th</sup> Edition</b>

<b>Community Medicine</b>	<b>Forensic Medicine And Toxicology</b>		
<b>Park's Textbook Of Preventive And Social Medicine</b> <b>K. Park 26<sup>th</sup> Edition</b>  <b>Text Book Of Community Medicine &amp; Public Health Ilyas Shah Ansari 8<sup>th</sup> Edition</b>	<b>1. Principles And Practice Of Forensic Medicine</b> <b>Naseeb Awan 2<sup>nd</sup> Edition</b> <b>17. Parikh's Textbook Of Medical Jurisprudence, Forensic Medicine And Toxicology Parikh, C.K 6<sup>th</sup> Edition</b> <b>18. Simpson's Forensic Medicine Knight B 11<sup>th</sup> Edition</b> <b>19. Taylor's Principles And Practice Of Medical Jurisprudence Taylor Volume 1</b>		



**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

THE DESIGN OF THE MODLUE

- A. Were objectives of the course clear to you? Y  N
- B. The course contents met with your expectations   
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned   
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with   
l. Too few examples 5. Adequate examples
- E. The level of the course was   
l. Too low 5. Too high
- F. The course contents compared with your expectations   
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices   
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?   
l. Not at all 5. Very strongly

THE CONDUCT OF THE MODLUE

- A. The lectures were clear and easy to understand   
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used   
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate   
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful   
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes  No

F. Please give overall rating of the course

90% - 100% (    )  
80% - 90%    (    )  
70% - 80%    (    )

60% - 70% (    )  
50% - 60% (    )  
below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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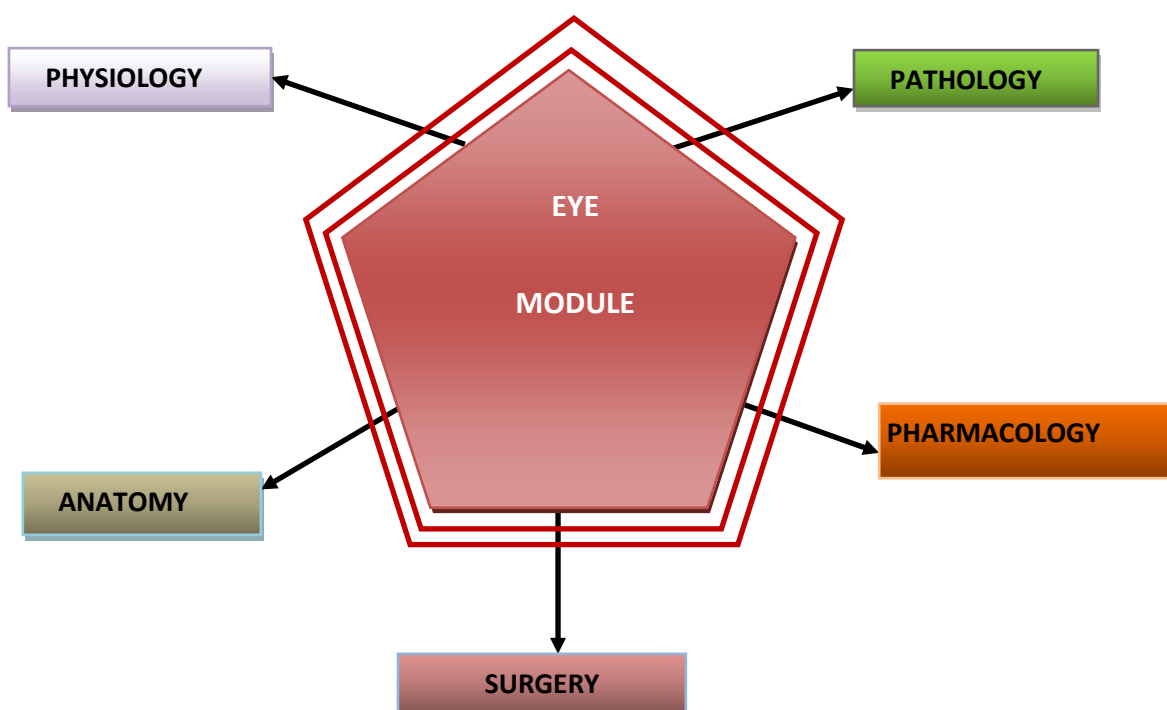
**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**OPHTHALMOLOGY MODULE**  
**FOURTH PROFESSIONAL MBBS**



## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Eye, ENT, Endocrine and Reproduction-III, Git and Hepatobilliary-III, Neuroscience-II and Renal-II modules which link basic science knowledge to clinical problems.



## MODULE OVERVIEW

### OPHTHALMOLOGY MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Fourth professional
<b>Duration</b>	5 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

## OPHTHALMOLOGY MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Prof: Dr. Allah Bachayo Rajar	Community Medicine	Professor
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

### Module objectives:

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

### Achievement of objectives:

- ✚ Focuses on information pertaining to examination policy, rules and regulations.

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
  - Small Group Discussion
  - Case- Based Learning (CBL)
  - Clinical Experiences
  - Clinical Rotations
  - Skills session
  - Practicals
  - Self-Directed Study
- **INTERACTIVE LECTURES:**  
Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.
  - **SMALL GROUP DISCUSSIONS (SGDS):**  
With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios.

Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to pharmacology, microbiology, forensic medicine, and community medicine have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

An essential component of a patient's general examination is the examination of the eyes and adnexa. Many different systemic disorders that are common in the community can be seen in the eye. For comprehensive patient care, it is essential to comprehend the consequences of eye disease.

Furthermore, blindness affects at least 2.5% of Pakistanis, of whom 80% can be cured with awareness-raising. Glaucoma, corneal disease, and cataracts are the three main causes of blindness.

In addition to a variety of ophthalmological disorders whose early diagnosis and treatment can avoid impairment and blindness, this session will cover frequent ophthalmological problems you may face in primary care settings.

## RATIONALE

Eye disorders are frequently seen in the practice of medicine. A medical graduate must possess a solid understanding of systemic disorders that impact the eye in addition to being able to comprehend common diseases affecting the eye and related structures, such as ocular trauma.

Infections including conjunctivitis, cataracts, glaucoma, retinal illnesses, refraction problems, and involvement of the eyes in systemic ailments are common diseases that impact the eyes. A physician also has to grasp the fundamentals of funduscopy. These illnesses are covered in this lesson, where students can review the fundamental information they learned in the Head & Neck module.



## LEARNING OBJECTIVES

### General learning Objectives:

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

1. Recognize eye conditions, including emergencies, offer basic eye care, direct patients to the proper facility, and follow up with them.
2. Carry out necessary minor surgical operations.
3. Effectively communicate any eye disorders and related difficulties to the patient, family, and community.
4. Recognize medical ethics, their relevance to ophthalmology, and how to protect patient confidentiality.
5. To comprehend the community's typical ophthalmology-related public health issues and how to prevent them.
6. Recognize medical research principles, including information technology essentials.

### Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

7. Explain the visual requirements.
8. Describe and categorize blindness.
9. Explain the various visual field defects and the anatomy and physiology of the visual pathway.
10. Explain the fundamentals and applications of visual fields, ultrasonography, and optical coherence tomography (OCT) in common eye problems.
11. Identify the various forms of lid bumps and suggest a treatment strategy.
12. Explain about ptosis, entropion, and ectropion, and outline the available treatments.
13. Examine swollen eyes and look into possible causes.
14. Explain the red eye differential diagnosis.
15. Describe the etiology and treatment of the various inflammations of the conjunctiva.
16. Describe the causes, symptoms, and treatment options for various corneal inflammations.
17. Explain about the etiology and treatment of ocular inflammations.
18. Explain the dynamics of aqueous fluid and how glaucoma is affected by it.
19. List the various reasons of progressive vision loss and suggest a course of action for each.
20. List the many (painful and painless) reasons of sudden visual loss and suggest a course of action for each.
21. Explain the presentation of squint and its guiding management concepts.
22. List the various reasons of double vision and suggest a course of action for each.
23. List the various causes of childhood blindness and suggest a course of action for each.
24. Talk about the significance of white pupils in children's clinical care.
25. Describe the symptoms, causes, and treatment of amblyopia.
26. Distinguish between terminology used in the field of ocular trauma.
27. Provide a plan for the treatment of eye injuries.

### Skills / Psychomotor Domain:

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

28. Observation and Assistance
29. Performing the skill under supervision
30. Performing the skill independently
31. Near and distant visual acuity

32. Examination of adnexa and anterior segment of the eye with a torch / slit lamp examination
33. Use of fluorescein and schirmer strip
34. Eversion of upper eyelid
35. Lacrimal regurgitation test
36. Extra ocular movements
37. Detection of the deviated eye (cover uncover test)
38. Test for pupillary reflexes
39. Measurement of intra ocular pressure Palpation assessment / digital tonometry Schiottz tonometer
40. Direct and indirect ophthalmoscopy
41. Retinoscopy with plane mirror

#### Attitude / Affective Domain:

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

42. Respect oneself and one's peers, both when providing and receiving comments.
43. To show patients compassion and understanding.
44. Develop your ability to communicate while keeping a sense of duty to your patients.
45. Showcase appropriate laboratory procedures.
46. Relate to patient and caregivers vulnerability
47. Demonstrate ethical self-management
48. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
49. Display compassion with patient and colleagues
50. Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease

#### Outcomes of Ophthalmology Module

- A. Knowledgeable
- B. Skillful
- C. Community Health Promoter
- D. Problem-solver
- E. Professional
- F. Researcher
- G. Leader and Role Model

### THEMES FOR OPHTHALMOLOGY MODULE

SNO	Themes	Duration
1	Foundation of Ophthalmology	1 week
2	Lid Abnormalities & Bulging Eyes	1 week
3	Red Eye	1 week
4	Visual Loss	1 week
5	Multiple Endocrine Neoplasia Syndromes	1 week

## SPECIFIC LEARNING OBJECTIVES THEME WISE

### Theme 1: Foundation of Ophthalmology

Theme 1: Foundation of Ophthalmology					
S. No.	Lecture Topic	Topic Objectives	Teaching Hours	Mode of Teaching	Assessment Tools
1.	Standards Of Vision and Blindness	Discuss visual standards and blindness according to WHO classification.	1 hr	Lecture SGD	MCQs OSCE SEQ
2.	Pupil Reflexes and Drugs Used In Common Eye Conditions	Describe the normal and abnormal pupil reflexes. Discuss drugs used in common eye diseases.	1 hr	Lecture SGD	MCQs OSCE SEQ
3.	Visual Pathway and Visual Field Defects	Describe the visual pathway. Describe the common visual field defects.	1 hr	Lecture SGD	MCQs OSCE SEQ
4.	Optical Coherence Tomography (OCT) and Visual fields (VF)	Discuss the uses of OCT and VF in ophthalmology.	1 hr	Lecture SGD	MCQs OSCE SEQ
5.	Fundus Fluorescein Angiography (FFA) and Ultrasonography	Discuss the uses of FFA and Ultrasonography in ophthalmology.	1 hr	Lecture SGD	MCQs OSCE SEQ
6.	Optics & Eye	Discuss visual functions (visual acuity, color vision, contrast sensitivity, light brightness), Refraction, Pseudophakia, Aphakia, and Anisometropia	1 hr	Lecture SGD	MCQs OSCE SEQ
7.	Refractive Errors	Discuss pathophysiology and clinical presentation of myopia, hypermetropia, astigmatism and presbyopia	1 hr	Lecture SGD	MCQs OSCE SEQ
8.	Correction of Refractive Errors	Describe management of myopia, hypermetropia, astigmatism and presbyopia.	1 hr	Lecture SGD	MCQs OSCE SEQ

### Theme 2: Lid Abnormalities & Bulging Eyes

9.	Differential Diagnosis Of Lid Bumps	Discuss overview of different causes of lid bumps.	1 hr	Lecture SGD	MCQs OSCE SEQ
10	Chalazion, Stye	Describe pathophysiology and management of chalazion and stye.	1 hr	Lecture SGD	MCQs OSCE SEQ
11	Tumors of Eyelids	Discuss different eyelid tumors and its pathogenesis.	1 hr	Lecture SGD	MCQs, OSCE SEQ

12	Management of Lid Bumps	Describe management plan of lid bumps.	2 hr	Lecture SGD	MCQs OSCE SEQ
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13	Ptosis	Discuss causes of ptosis, assessment and their management.	1 hr	Lecture SGD	MCQs OSCE SEQ
14	Trichiasis, Entropion and Ectropion	Discuss Trichiasis, Entropion and Ectropion, assessment and their management.	1 hr	Lecture SGD	MCQs OSCE SEQ
15	Proptosis – Basics	Discuss the etiology, clinical features, investigation and management of proptosis in children and adults	1 hr	Lecture SGD	MCQs OSCE SEQ
16	Preseptal and Orbital Cellulitis	Enumerate Differential diagnosis / causes of proptosis in children and adults.	1 hr	Lecture SGD	MCQs OSCE SEQ
17	Thyroid Eye disease (TED)	Discuss the etiology, clinical features, investigation and management of TED.	1 hr	Lecture SGD	MCQs OSCE SEQ
18	Myasthenia Gravis & Migraine	Discuss the etiology, clinical features, investigation, and management of Myasthenia Gravis. Discuss the etiology, clinical features, investigation, and management of Migraine.	1 hr	Lecture SGD	MCQs OSCE SEQ
<b>Theme 3: Red Eye</b>					
19	Red eye	Enumerate causes of red eye. Describe pathophysiology and management of different conjunctival (Bacterial/Viral/Fungal/Allergic) inflammations.	2 hr	Lecture SGD	MCQs OSCE SEQ
20	Corneal Inflammations/Infections	Discuss the etiology, clinical features, investigation, and management of non- infectious corneal inflammations. Discuss investigations for corneal ulcers.	1 hr	Lecture SGD	MCQs OSCE SEQ
21	Bacterial Keratitis	Discuss the etiology, clinical features, investigation, and management of different bacterial corneal ulcers.	1 hr	Lecture SGD	MCQs OSCE SEQ
22	Fungal, Viral & Acanthamoeba Keratitis	Discuss the etiology, clinical features, investigation, and management of different fungal, viral & acanthamoeba corneal ulcers.	2 hr	Lecture SGD	MCQs OSCE SEQ
23	Dacryocystitis	Discuss the etiology, clinical features, investigation, and management of congenital nasolacrimal duct obstruction. Assess the time of probing in children. Differentiate between acute, acute on chronic and chronic Dacryocystitis. Discuss the etiology, clinical features, investigation, and management of Dacryocystitis.	1 hr	Lecture SGD	MCQs OSCE SEQ
24	Dry Eyes	Discuss the etiology, clinical features, investigation, and management of Dry Eyes with special emphasis on Vit. A deficiency and Sjogren's syndrome.	1 hr	Lecture SGD	MCQs OSCE SEQ
25	Blepharitis	Discuss the etiology, clinical features, investigation, and management of blepharitis.	1 hr	Lecture SGD	MCQs OSCE SEQ
26	Pterygium, Pseudo-Pterygium, Episcleritis & Scleritis	Describe differences between Pterygium, Pseudo- pterygium, Episcleritis & Scleritis and their management.	1 hr	Lecture SGD	MCQs OSCE SEQ

27	Basic Concepts In Ocular Trauma	Discuss definitions, classification & clinical evaluation of ocular injuries and principles of management. Discuss corneal and conjunctival foreign bodies and their treatment.	1 hr	Lecture SGD	MCQs OSCE SEQ
28	Open Globe Injury (OGI) / IOFB / Sympathetic Ophthalmia (SO)	Classify OGI. Discuss the etiology, clinical features, investigation, and management of OGI and IOFB. Discuss the etiology, clinical features, investigation, and management of SO.	1 hr	Lecture SGD	MCQs OSCE SEQ
29	Closed Globe Injury (CGI) Orbital Floor Injury	Discuss the etiology, clinical features, investigation, and management of CGI. Classify CGI.	1 hr	Lecture SGD	MCQs OSCE SEQ
30	Radiation, Thermal, Chemical Injuries	Discuss the etiology, clinical features, investigation, and management of radiation injury. Discuss the etiology, clinical features, investigation, and management of thermal injury Discuss etiology, clinical features, investigation, & management of chemical injury	1 hr	Lecture SGD	MCQs OSCE SEQ
31	Visual Rehabilitation	Discuss various options of visual rehabilitation after ocular trauma. Discuss rehabilitation services for blind people in our setup.	1 hr	Lecture SGD	MCQs OSCE SEQ
32	Uveitis – Basics	Discuss Definitions, classifications, history & workup of uveitis.	1 hr	Lecture SGD	MCQs OSCE SEQ
33	Anterior & Posterior Uveitis	Discuss the etiology, clinical features, investigation, and management of Anterior uveitis. Discuss the etiology, clinical features, investigation, and management of Posterior Uveitis.	1 hr	Lecture SGD	MCQs OSCE SEQ
<b>Theme 4: Visual loss</b>					
34	Visual Loss & Intraocular Pressure (IOP)	Classify causes of visual loss in following order: Visual Loss associated with Anterior segment. Visual Loss associated with Posterior segment. Discuss Aqueous humor dynamics and its role in IOP. Enumerate causes of gradual & sudden visual loss. Define and Classify Glaucoma.	1 hr	Lecture SGD	MCQs OSCE SEQ
35	Open angle glaucoma	Discuss the differences between POAG, NTG and OHT. Discuss the etiology, clinical features, investigation, and management of POAG. Discuss the etiology, clinical features, investigation, and management of NTG. Discuss the etiology, clinical features, investigation, and management of OHT.	1 hr	Lecture SGD	MCQs OSCE SEQ
36	Primary Angle Closure Glaucoma (PACG)	Discuss the stages of PACG. Discuss the etiology, clinical features, investigation, and management of Acute angle closure.	1 hr	Lecture SGD	MCQs OSCE SEQ

37	Neovascular Glaucoma & Lens Induced Glaucoma	Discuss the etiology, clinical features, investigation, and management of Neovascular glaucoma. Discuss the etiology, clinical features, investigation, and management of lens induced glaucoma.	1 hr	Lecture SGD	MCQs OSCE SEQ
38	Treatment Options In Glaucoma	Enumerate different treatment options in glaucoma. Discuss the indications of each treatment option.	1 hr	Lecture SGD	MCQs OSCE SEQ
39	Cataract	Define cataract. Describe the types of Age-related cataract. Describe the pathogenesis and complications of cataract. Describe the management of cataract.	1 hr	Lecture SGD	MCQs OSCE SEQ
40	Cataract Surgery Complications	Discuss the etiology, clinical features, investigation, and management of Endophthalmitis. Discuss the etiology, clinical features, investigation, and management of Panophthalmitis.	1 hr	Lecture SGD	MCQs OSCE SEQ
41	Corneal Ectasia, Dystrophy & Degeneration	Discuss the etiology, clinical features, investigation, and management of keratoconus. Give overview of corneal dystrophies and degenerations.	1 hr	Lecture SGD	MCQs OSCE SEQ
42	Diabetic Eye Disease	Discuss the effects of diabetes on eye. Discuss the etiology, clinical features, investigation, and management of Diabetic Eye Disease (Diabetic Retinopathy and maculopathy).	1 hr	Lecture SGD	MCQs OSCE SEQ
43	Hypertensive Retinopathy	Discuss the effects of hypertension on eye. Discuss the etiology, clinical features, investigation, and management of Hypertensive Retinopathy.	1 hr	Lecture SGD	MCQs OSCE SEQ
44	Central Retinal Vein Occlusion (CRVO)	Discuss the etiology, clinical features, investigation, and management of CRVO.	1 hr	Lecture SGD	MCQs OSCE SEQ
45	Central Retinal Artery Occlusion (CRAO)	Discuss the etiology, clinical features, investigation, and management of CRAO.	1 hr	Lecture SGD	MCQs OSCE SEQ
46	Retinal Detachment (RD)	Discuss the etiology, clinical features, investigation, and management of RD.	1 hr	Lecture SGD	MCQs OSCE SEQ
47	Choroidal Melanoma	Discuss the etiology, clinical features, investigation, and management of choroidal melanoma. Describe the importance of this condition on mortality.	1 hr	Lecture SGD	MCQs OSCE SEQ
48	Night Blindness – Retinitis Pigmentosa, Vit. A Deficiency	Discuss the etiology, clinical features, investigation, and management of Retinitis pigmentosa. Discuss the etiology, clinical features, investigation, and management of Vit. A deficiency.	1 hr	Lecture SGD	MCQs OSCE SEQ
49	Optic neuritis	Classify optic neuritis. Discuss the etiology, clinical features, investigation, and management of optic neuritis.	1 hr	Lecture SGD	MCQs OSCE SEQ
50	Hereditary, Nutritional & Toxic Optic Neuropathies	Discuss the etiology, clinical features, investigation, and management of these optic neuropathies.	1 hr	Lecture SGD	MCQs OSCE SEQ

51	Papilledema	Describe the difference between papilledema and disc swelling. Discuss the etiology, clinical features, investigation, and management of papilledema.	1 hr	Lecture SGD	MCQs OSCE SEQ
<b>Theme 5: Childhood Blindness &amp; Crossed Eyes</b>					
52	White pupil (leukocoria) and Retinoblastoma (RB)	Describe the importance of white pupil in children. Differentiate different causes of white pupil in children. Discuss investigations in white pupil. Discuss the etiology, clinical features, investigation and management of RB.	1 hr	Lecture SGD Lecture SGD	MCQs OSCE SEQ
53	Congenital Cataract	Define congenital cataract. Describe the types of congenital cataracts. Describe the pathogenesis and complications of congenital cataracts. Describe the management of congenital cataracts.	1 hr	Lecture SGD	MCQs OSCE SEQ
54	Congenital Glaucoma	Discuss the etiology, clinical features, investigation and management of Congenital Glaucoma.	1 hr	Lecture SGD	MCQs OSCE SEQ
55	Amblyopia	Define Amblyopia. Discuss the etiology, clinical features, investigation, and management of amblyopia.	1 hr	Lecture SGD	MCQs OSCE SEQ
56	Squint – Basics	Discuss definitions, clinical evaluation of squint and principles of management	1 hr	Lecture SGD	MCQs OSCE SEQ
57	Concomitant Squint Esotropia	Define concomitant squint. Discuss the etiology, clinical features, investigation, and management of esotropia.	1 hr	Lecture SGD	MCQs OSCE SEQ
58	Exotropia	Discuss the etiology, clinical features, investigation, and management of exotropia.	1 hr	Lecture SGD	MCQs OSCE SEQ
59	Diplopia & Incomitant Squint	Discuss differential diagnosis/causes of diplopia. Define incomitant squint. Discuss the etiology, clinical features, investigation, and management of 3rd nerve palsy. Discuss the etiology, clinical features, investigation, and management of 4th nerve palsy. Discuss the etiology, clinical features, investigation, and management of 6th nerve palsy.	1 hr	Lecture SGD	MCQs OSCE SEQ

## CLINICAL ROTATION 4<sup>TH</sup> YEAR MBBS

### Theme 1: Foundation of Ophthalmology

Topic	Learning objectives	Assessment method	Hours
1. History Taking 2. Visual Acuity	<ul style="list-style-type: none"> <li>Take detailed history in ocular conditions</li> <li>Check visual acuity.</li> </ul>	OSCE	03 + 02

3. Pupil Examination	• Perform pupillary examination.	OSCE	03
4. Visual Fields (Confrontation)	• Perform visual fields examination by confrontation methods.	OSCE	03
5. Slit-Lamp Examination	• Identify parts of slit-lamp	OSCE	01
6. Anterior Segment Examination	• Examine anterior segment on slit lamp	OSCE	01
7. Direct Ophthalmoscopy	• Perform direct ophthalmoscopy	OSCE	02
8. Retinoscopy	• Identify trial lenses used in refraction.	OSCE	03
9. Indirect Ophthalmoscopy	• Perform indirect ophthalmoscopy	OSCE	02
<b>Investigations</b> 10. OCT 11. Visual Fields 12. Biometry 13. B-Scan 14. FFA 15. Corneal Topography	Describe/interpret the results of: <ul style="list-style-type: none"><li>• OCT</li><li>• Visual fields</li><li>• Biometry</li><li>• B-scan</li><li>• FFA &amp; Corneal topography</li></ul>	OSCE	03 + 02

### Theme 2: Lid Abnormalities & Bulging Eyes

Topic	Learning objectives	Assessment method	Hours
16. Eversion Of Upper Lids	• Observe Eversion of upper lids	OSCE	01
17. Ptosis Examination	• Perform ptosis examination.	OSCE	03
18. Ptosis And Its Surgeries	• Observe ptosis surgery	OSCE	03
19. Lids Abnormalities	• Examine common lid abnormalities (Ectropion, Entropion, Chalazion, Sty) )	OSCE	03
20. Lids Surgery Related Instruments	• Identify instruments used in lids surgery	OSCE	03
21. Lid Reconstruction Procedures	• Observe lid reconstruction procedures	OSCE	05
22. Proptosis	• Observe proptosis	OSCE	03

### Theme 3: Red Eye

Topic	Learning objectives	Assessment method	Hours
23. Use Of Topical Anesthesia and Staining	• Perform topical anesthesia and staining.	OSCE	01
24. Removal Of Superficial Foreign Bodies	• Observe corneal foreign body removal.	OSCE	01
25. Corneal Scrapping	• Observe corneal scrapping.	OSCE	02
26. Keratoplasty Surgery	• Observe keratoplasty.	OSCE	03
27. Lacrimal Regurgitation Test	• Perform lacrimal regurgitation test.	OSCE	01
28. Dacryocystorhinostomy (DCR) Surgery & Its Instruments	• Observe DCR surgery and identify instruments used	OSCE	03



29. Ocular Trauma	<ul style="list-style-type: none"> <li>Observe first aid to Ocular trauma</li> <li>Perform eye wash in chemical injury.</li> </ul>	OSCE	03
30. Globe Repair Surgery	<ul style="list-style-type: none"> <li>Observe OGI surgery.</li> </ul>	OSCE	03
<b>Theme 4: Visual Loss</b>			
Topic	Learning objectives	Assessment method	Hours
31. Normal Disc 32. Disc Abnormalities 33. Swollen Disc(S)	<ul style="list-style-type: none"> <li>Examine normal disc</li> <li>Examine glaucomatous disc.</li> <li>Examine swollen disc</li> </ul>	OSCE	03
34. Detection Of Retinal Lesions 35. Retinal Vascular Diseases	<ul style="list-style-type: none"> <li>Detect common retinal conditions</li> <li>Differentiate different retinal vascular conditions.</li> </ul>	OSCE	03
36. Retinal Detachment	<ul style="list-style-type: none"> <li>Identify RD in pictures</li> <li>Observe Retinal detachment surgery</li> </ul>	OSCE	03
37. Use Of Lasers In Eye 38. Intravitreal Injections	<p>Discuss</p> <ul style="list-style-type: none"> <li>Use of lasers in eye</li> <li>Intravitreal injections</li> </ul>	OSCE	02
39. Tonometry	Observe goldman tonometry	OSCE	01
40. Glaucoma Filtration Surgery	Observe Glaucoma filtration surgery	OSCE	03

#### **Theme 5: Childhood Blindness & Crossed Eyes**

Topic	Learning objectives	Assessment method	Hours
41. Congenital Glaucoma	<ul style="list-style-type: none"> <li>Observe congenital glaucoma examination (EUA) and surgery</li> </ul>	OSCE	03
42. Cataract (Adult and Ccongenital)	<ul style="list-style-type: none"> <li>Detect cataract on ocular examination</li> </ul>	OSCE	03
43. Cataract surgery	<ul style="list-style-type: none"> <li>Observe types of Adult and Congenital cataract surgery</li> </ul>	OSCE	03 + 03
44. Extraocular Mmovements	<ul style="list-style-type: none"> <li>Perform extraocular movements and squint examination</li> </ul>	OSCE	03
45. Squint Eexamination	<ul style="list-style-type: none"> <li>Perform cover / uncover / alternate cover tests</li> <li>Identify the pattern of squint (Esotropia vs. Exotropia)</li> </ul>	OSCE	03
46. Squint Surgery	<ul style="list-style-type: none"> <li>Observe squint surgery</li> </ul>	OSCE	03

### **CLINICAL SCIENCES SUBJECTS**

EYE				
S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>FAMILY MEDICINE</b>	Red Eye	1	Lecture
		Eye lid Problems	1	Lecture
	Common complaints of EYE	Cataract	1	Lecture
		Gloucoma	1	Lecture
		Headaches and Dizziness	1	Lecture

### TEACHING HOURS ALLOCATION

Theme	In class teaching (Hours)	Clinical (Hours)	Total (Hours)
<b>Theme 1:</b> Foundation of Ophthalmology	08	25	33
<b>Theme 2:</b> Lid Abnormalities & Bulging Eyes	11	21	32
<b>Theme 3:</b> Red Eye	17	17	34
<b>Theme 4:</b> Visual loss	18	15	33
<b>Theme 5:</b> Childhood Blindness & Crossed Eyes	08	21	29
Family Medicine	5	-	5
<b>Total</b>	67	99	166

### EXAMINATION AND METHODS OF ASSESSMENT

#### EXAMINATION RULES AND REGULATIONS

1. Student must report to examination hall/venue, in time for smooth conduction of the exams.
2. No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
3. No students will be allowed to sit in exam without College ID Card, and Lab Coat

4. Students must sit according to their roll numbers mentioned on the seats.
5. Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
6. Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
7. Students must not possess any written material or communicate with their fellowstudents
8. Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
9. **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### ASSESSMENT

#### **Internal: Total 10% (20 marks)**

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

#### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

### METHODS OF ASSESSMENT

#### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

### Short Essay Questions (SEQs):

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

### OSPE / OSCE

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

### ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### WEEKLY TESTS

The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.

It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of

these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.

Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

### POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD  
Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class  
PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable

### ASSESSMENT BLUEPRINT

#### OPHTHALMOLOGY MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

## LEARNING RESOURCES

The learning resources for the educational contents of MBBS program are available for the students which assist learners to achieve the outcomes and by focusing on educational content. In addition; the names of the books for each subject as a learning resources is available with the educational content of the same subject.

Following learning resources can be used by the undergraduates;

- Books
- Evidence based articles from journals
- Digital library to search the material for self-directed learning
- Video Tapes
- Displays
- Models
- Phantom Heads
- Printed Notes
- Case based scenarios'
- Community Visits

<b>Recommended Books FOURTH YEAR MBBS</b>			
<b>General Pathology</b>	<b>Physiology</b>	<b>Pharmacology</b>	<b>Anatomy</b>
<b>Robbins &amp; Cotran Pathologic Basis Of Disease</b> <b>Vinay Kumar, Abul K. Abbas, Jon C. Aster</b> 10 <sup>th</sup> Edition	<b>Guyton And Hall Textbook Of Medical Physiology</b> <b>Guyton And Hall</b> 13 <sup>th</sup> Edition	1. Lippincott Illustrated Reviews: Pharmacology <b>Karen Whalen, Carinda Feild, Rajan Radhakrishnan</b> <b>Pharmacology: Examination &amp; Board Review,</b> <b>Anthony J. Trevor, Bertram G. Katzung, Marieke Knudering-Hall</b> 12 <sup>th</sup> Edition	<b>Clinically Oriented Anatomy</b> <b>Keith.L. Moore, Arthur F. Dalley, Anne M.R. Arthur</b> (7 <sup>th</sup> or Latest Edition) <b>Gray's Anatomy For Students</b> <b>Drake &amp; Vogl &amp; Mitchell</b> 3 <sup>rd</sup> Or Latest Edition
<b>Community Medicine</b>	<b>Ophthalmology</b>		

<p>Park's Textbook Of Preventive And Social Medicine  <b>K. Park</b> 26<sup>th</sup> Edition</p> <p>Text Book Of Community Medicine &amp; Public Health  <b>Ilyas Shah Ansari</b> 8<sup>th</sup> Edition</p>	<ol style="list-style-type: none"> <li>1. <b>Clinical Ophthalmology Text And Atlas</b>  <b>Shafi Jatoi</b>  6<sup>th</sup> Edition</li> <li>2. <b>Parsons' Diseases Of The Eye</b>  <b>Ramanjit Sihota, Radhika Tandon</b>  23<sup>rd</sup> Edition</li> <li>3. <b>Vaughan &amp; Asbury's General Ophthalmology</b>  <b>Paul Riordan-Eva, James J. Augsburger</b>  19<sup>th</sup> Edition</li> <li>4. <b>Comprehensive Ophthalmology</b>  <b>A K Khurana</b> 6<sup>th</sup> Edition</li> </ol>
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**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you? Y  N
- B. The course contents met with your expectations  
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned  
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with  
l. Too few examples 5. Adequate examples
- E. The level of the course was  
l. Too low 5. Too high
- F. The course contents compared with your expectations  
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices  
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?  
l. Not at all 5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand  
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used  
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate  
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful  
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes  No



F. Please give overall rating of the course

90% - 100% (    )

80% - 90% (    )

70% - 80% (    )

60% - 70% (    )

50% - 60% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

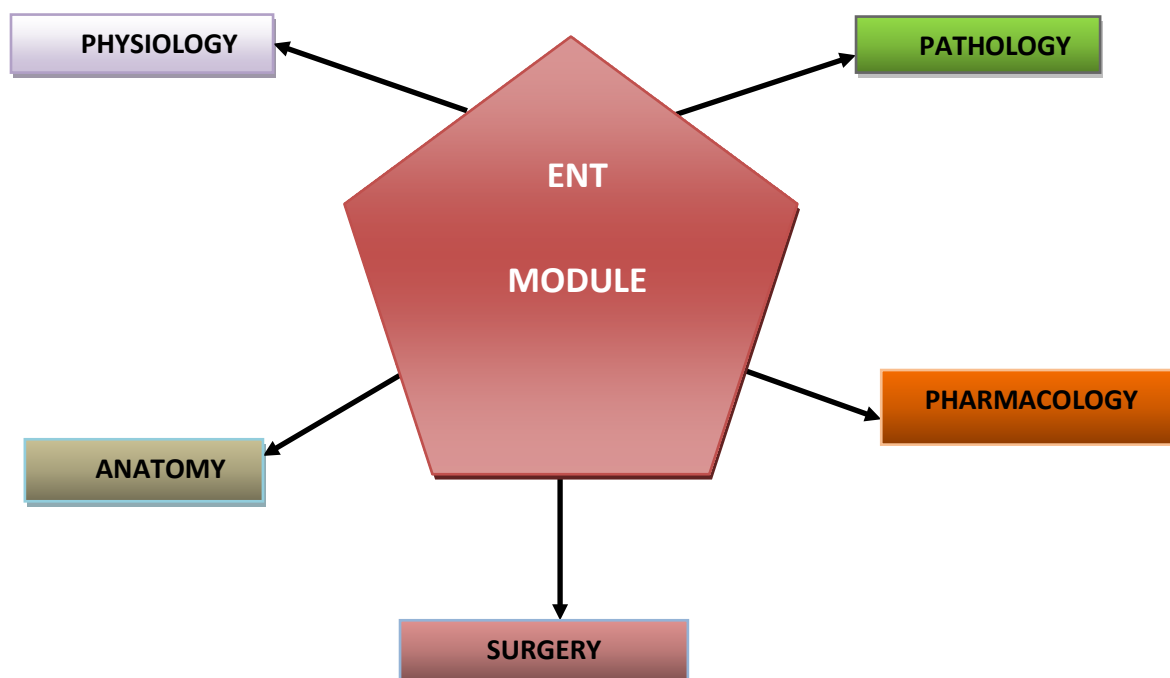
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## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Eye, ENT, Endocrine and Reproduction-III, Git and Hepatobiliary-III, Neuroscience-II and Renal-II modules which link basic science knowledge to clinical problems.



### MODULE OVERVIEW

#### ENT MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Fourth professional
<b>Duration</b>	6 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

## ENT MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Prof: Dr. Allah Bachayo Rajar	Community Medicine	Professor
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

### Module objectives:

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

### Achievement of objectives:

- ✚ Focuses on information pertaining to examination policy, rules and regulations.

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
  - Small Group Discussion
  - Case- Based Learning (CBL)
  - Clinical Experiences
  - Clinical Rotations
  - Skills session
  - Practicals
  - Self-Directed Study
- **INTERACTIVE LECTURES:**  
Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.
  - **SMALL GROUP DISCUSSIONS (SGDS):**  
With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their

notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to pharmacology, microbiology, forensic medicine, and community medicine have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

Welcome to the ENT module. This fascinating session will act as a foundation and is crucial to your future practice as physicians. This module includes a number of interactive tasks that are meant to make your learning engaging and fruitful. As a general trend, disease burden is increasing with passage of time and is also true for common ENT problems. According to a local study, the highest incidence is noted for ear diseases; especially discharging ear, followed by nose (rhinosinusitis) and throat (sore throat) respectively with a general increasing trend over the past decade (Z. Awan, 2009). So this module is designed to specifically address the basic needs of medical students as graduating doctors, enabling them to diagnose and treat common everyday diseases of ear, nose and throat and contribute to better overall health care.

## RATIONALE

The head, neck, and ear regions are home to some of the most prevalent disorders that general practitioners treat. A medical graduate ought to be well-versed in the diagnosis, treatment, and symptomatology of ENT disorders. They should be able to address some common issues, order and interpret relevant investigations, and, where necessary, make appropriate referrals.

The fundamental sciences spiral's Head and Neck module has given students background information on the anatomy, physiology, and basic pathology of this area. The student will get the clinical knowledge necessary for the diagnosis and treatment of disorders pertaining to the ear, nose, and throat based on this foundation.

## LEARNING OBJECTIVES

### General learning Objectives:

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

1. Knowledge and understanding of the structures and functions of the ear, nose and throat with application to clinical practice, integrating basic science knowledge to solve and manage common related diseases in community
2. Knowledge and understanding of the origin and associated risk factors of common diseases of ear, nose and throat and application in real context
3. Application of knowledge in management and prevention of common pathologies of ear, nose and throat
4. Practice of basic skills used to diagnose and treat diseases in a simulated clinical setting.
5. Knowledge of drugs used to treat ear, nose and throat diseases and their application

### Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Describe the anatomy of the throat, nose, and ears.
2. Remember the physiology of smell and hearing.
3. Talk about the etiology, diagnosis, clinical manifestations, and treatment of disorders affecting the middle, outer, and inner ears.
4. Examine the pathophysiology of the salivary, oropharyngeal, and hypopharyngeal regions.
5. Describe benign and malignant tumors involving the ENT and Head & Neck.
6. Assist in diagnostic procedures and take swab for culture and sensitivity from ear, Nose & throat under supervision.
7. Prescribe hematological investigations, x-ray paranasal sinuses, CT/MRI scan of paranasal sinuses, temporal bone and Head & Neck & interpret it.
8. Perform clinical tests of hearing, tuning fork tests and balance independently
9. Interpret pure tone audiogram & tympanogram.
10. Describe the ABC protocol for resuscitation of traumatic patients.
11. Discuss differential diagnosis of membrane on the tonsils and describe diphtheria.
12. Describe sialadenitis, sialolithiasis and enumerate the benign and malignant salivary tumors.
13. Discuss a treatment plan for the patients with various common diseases of the ENT and Head and Neck region.
14. Describe dysphagia and its causes, Plummer-Vinson Syndrome and malignant tumors of hypopharynx that could lead to dysphagia and hoarseness along with their management.
15. Describe the management of corrosive ingestion and foreign body in the esophagus.
16. Describe various congenital and acquired disorders of the ENT and Head & Neck region.
17. Describe the significance of hoarseness and stridor & enumerate their causes and clinical features of respiratory obstruction.
18. Differentiate clinically between various types of stridor and possible site of obstruction.
19. Describe tracheostomy and indications for this procedure.

20. Describe squamous cell carcinoma of the larynx and the impact of stage of disease on management and survival of patient.
- 21.
22. Explain the mutual association of hearing and balance disorders & the various conditions that give rise to these disorders.
23. Describe the clinical features and course of otosclerosis, Meniere's disease, vestibular neuronitis & BPPV.
24. Diagnose suppurative otitis media & describe its intracranial and extra cranial complications.
25. Describe the 'rehabilitation of deaf and mute child' and the impact of hearing impairment in children.
26. Describe rhinosinusitis, its various types of rhino-sinusitis and its complications.
27. Describe the diseases of the nasal septum & define DNS and enumerate its various types.
28. Describe the pathophysiology, types, and management of Sino nasal polyposis.
29. Enumerate various conditions resulting in nasal obstruction & discharge.
30. Describe various types of allergic & non-allergic rhino-sinusitis.
31. Enumerate fungal and other granulomatous diseases of the nose & paranasal sinuses and describe their management.
32. Categorize various conditions benign & malignant neoplasms of the nose & paranasal sinuses.
33. Classify various types of neck swellings and describe clinical differentiating features of benign & malignant neck masses.
34. Describe a classification of various lymph nodes levels in the neck and describe the lymphatic drainage of the head and neck.
35. Obtain informed consent from patient and communicate with the patients, their families and community regarding diseases & its relevant issues.
36. Describe the anatomy and physiology of salivary glands
37. Describe benign & malignant diseases of the salivary glands

#### **Skills / Psychomotor Domain:**

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

38. Observation and Assistance
39. Performing the skill under supervision
40. Performing the skill independently
41. Analyze the consequences of the nose trauma.
42. Identify and talk about the management of neoplastic disorders affecting the larynx, esophagus, and mouth cavity.
43. Examine the issues brought on by foreign objects in the nose and inner ear, and talk about how to treat them.
44. Give an example of when a tracheostomy is necessary and describe the process.
45. Obtain appropriate history, examine Ear, Nose, oral cavity, pharynx, larynx and Neck including mirror examinations and functional examinations of these areas.

#### **Attitude / Affective Domain:**

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

46. Respect oneself and one's peers, both when providing and receiving comments.
47. To show patients compassion and understanding.
48. Develop your ability to communicate while keeping a sense of duty to your patients.
49. Showcase appropriate laboratory procedures.

50. Relate to patient and caregivers vulnerability
51. Demonstrate ethical self-management
52. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
53. Display compassion with patient and colleagues
54. Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease

**Outcomes of ENT Module**

- A. Knowledgeable
- B. Skillful
- C. Community Health Promoter
- D. Problem-solver
- E. Professional
- H. Researcher
- I. Leader and Role Model

**THEMES FOR ENT MODULE**

SNO	Themes	Duration
1	Sore Throat	1 week
2	Difficulty in Swallowing	1 week
3	Hoarseness & Stridor	1 week
4	Deafness, Ear Discharge & Dizziness	1 week
5	Nasal Obstruction	1 week
6	Swelling Neck	1 week

**SPECIFIC LEARNING OBJECTIVES THEME WISE**

Theme 1 – Sore Throat					
Sr. No	Lecture Topic	Topic Objectives	Teaching Hours	Teaching Method	Assessment Tool
1.	Anatomy & physiology of oral cavity,	<ul style="list-style-type: none"> <li>• Discuss the anatomy of oral cavity and siteclassification of oral cavity.</li> </ul>	2 hours		



	<b>Pharynx &amp; salivary glands</b>	<ul style="list-style-type: none"> <li>• Discuss applied anatomy of pharynx &amp; mechanism of deglutition</li> <li>• Discuss applied anatomy of nasopharynx and anatomy and physiology of adenoids</li> <li>• Discuss applied anatomy of oropharynx and anatomy and physiology of pharyngeal tonsils</li> <li>• Discuss the anatomy of minor and major salivary glands</li> </ul>		Interactive Lecture SGD	MCQs, SEQs, OSCE
2.	<b>Acute Pharyngitis</b>	Discuss classification, types, aetiology, clinical features, diagnosis and treatment of acute pharyngitis	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
3.	<b>Chronic Pharyngitis</b>	Discuss classification, types, aetiology, clinical features, diagnosis and treatment of chronic pharyngitis	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
4.	<b>Acute Tonsillitis/ Peritonsillar abscess (Quinsy)</b>	<ul style="list-style-type: none"> <li>• Discuss classification, types, aetiology, clinical features, diagnosis and treatment of acute tonsillitis</li> <li>• Discuss the aetiology, clinical features and treatment of quinsy</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
5.	<b>Chronic Tonsillitis</b>	Discuss classification, types, aetiology, clinical features, diagnosis and treatment of chronic tonsillitis	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
6.	<b>Oral ulceration</b>	Enumerate differential diagnosis of oral ulcers and discuss management of Aphthous ulcers	1 hours	Interactive Lecture SGD	MCQs, SEQs, OSCE
7.	<b>Trauma to the palate and Oropharynx</b>	Discuss the principles of soft tissue & bone repair in palatal and pharyngeal trauma.	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
8.	<b>Carcinoma of oral cavity</b>	Discuss the aetiology, clinical features and treatment of oral carcinoma	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
9.	<b>Approach to a patient with sore throat</b>	Enumerate differentials of sore throat and discuss important differentiating points	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
10.	<b>Anatomy &amp; physiology of salivary glands</b>	Describe the anatomy & physiology of parotid, submandibular, sublingual & minor salivary glands	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
11.	<b>Non neoplastic disorders of the salivary glands</b>	Describe non neoplastic disorders of salivary glands, its management and treatment	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

12.	<b>Sialolithiasis and sialectasis</b>	Describe stone formation and stasis of secretions in the salivary glands and its management	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
13.	<b>Neoplasm of salivary glands</b>	Describe the features, course and management of benign and malignant, submandibular, sublingual and minor salivary glands	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
14.	<b>Complications of salivary gland surgeries</b>	Describe in detail different surgical procedures of salivary glands and its complications	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

### Theme 2 - Difficulty in Swallowing

Sr. No.	Lecture Topic	Topic Objectives	Teaching Hours	Teaching Method	Assessment Tool
1.	<b>Dysphagia &amp; Plummer Vinson Syndrome</b>	<ul style="list-style-type: none"> <li>Discuss Dysphagia &amp; the anatomy and physiology of Esophagus and the appropriate medical and surgical treatment of dysphagia.</li> <li>Discuss PVS &amp; the predisposing factors for causation &amp; management</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
2.	<b>Pharyngeal and esophageal Pouches</b>	Discuss Pharyngeal pouch & the predisposing factors, clinical features, and treatment.	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
3.	<b>Oropharyngeal Tumors</b>	<ul style="list-style-type: none"> <li>Enumerate oropharyngeal tumors.</li> <li>Discuss the types, aetiology and treatment of oropharyngeal carcinoma.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
4.	<b>Hypopharyngeal Tumors</b>	<ul style="list-style-type: none"> <li>Enumerate hypopharyngeal tumors.</li> <li>Discuss the aetiology and treatment of hypopharyngeal carcinoma.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
5.	<b>Tumors of Esophagus.</b>	Classify esophageal tumors & describe the etiology, clinical features, and treatment options.	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

### Theme 3 - Hoarseness & Stridor

Sr. No.	Lecture Topic	Topic Objectives	Teaching Hours	Teaching Method	Assessment Tool
1.	<b>Applied anatomy of potential spaces in &amp; around the larynx and neck</b>	<ul style="list-style-type: none"> <li>Discuss applied anatomy of larynx.</li> <li>Discuss the pre-piglottic, paraglottic &amp; Rinke's space.</li> </ul>	2 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

2.	<b>Anatomy of Potential neck spaces</b>	<ul style="list-style-type: none"> <li>Discuss anatomy of deep fascia of neck &amp; anatomy of potential pharyngeal and neck spaces.</li> <li>Discuss surgical anatomy of peritonsillar, parapharyngeal &amp; submandibular spaces.</li> <li>Discuss anatomy of retro pharyngeal space</li> </ul>	3 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
3.	<b>Applied anatomy &amp; physiology of Larynx/neck, Voice physiology</b>	<ul style="list-style-type: none"> <li>Discuss applied anatomy of Larynx.</li> <li>Discuss the physiology of larynx.</li> <li>Discuss the physiology of voice, speech production &amp; its regulation</li> </ul>	2 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
4.	<b>Acute Laryngitis</b>	Discuss aetiology, clinical features, diagnosis, and treatment of acute simple laryngitis	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
5.	<b>Chronic Laryngitis</b>	Discuss chronic laryngitis including chronic granulomatous conditions of the larynx, its clinical features, diagnosis, and treatment.	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
6.	<b>Vocal nodules &amp; vocal polyps</b>	Discuss differentiating points between vocal nodules & polyps, its aetiology, clinical features, diagnosis, and treatment.	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
7.	<b>Vocal cord paralysis</b>	Discuss paralytic causes of hoarseness, its types, clinical features, diagnosis, and treatment.	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
8.	<b>Stridor</b>	Enumerate causes of stridor. Explain types of stridor. Discuss management of congenital stridor	1 hours	Interactive Lecture SGD	MCQs, SEQs, OSCE
9.	<b>Apyrexial causes of stridor</b>	Discuss the aetiology and management of acquired apyrexial causes of stridor	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
10.	<b>Pyrexial causes</b>	Discuss the aetiology and management of pyrexial causes of stridor	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
11.	<b>Laryngeal trauma</b>	Discuss the management of laryngeal trauma	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
12.	<b>Acute Respiratory obstruction</b>	Discuss signs of respiratory obstruction. Enumerate alternate airways & discuss tracheostomy.	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
13.	<b>Laryngotracheal Foreign body</b>	Discuss the aetiology, types & treatment of Laryngotracheal Foreign bodies.	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

14.	<b>Malignant Tumours of the Larynx / Carcinoma of Larynx</b>	<ul style="list-style-type: none"> <li>Discuss incidence, epidemiology, risk factors, Pathology &amp; classification of carcinoma of larynx.</li> <li>Discuss UICC classification of laryngeal sites &amp; subsites. Discuss management of carcinoma of all the subsites</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
15.	<b>Approach to a patient with hoarseness</b>	Discuss the differential diagnosis of hoarseness and explain management approach to a patient presenting with hoarseness	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

#### Theme 4 - Deafness, Ear Discharge & Dizziness

Sr. no.	Lecture Topic	Topic Objectives	Teaching Hours	Teaching Method	Assessment Tool
1.	<b>Applied Anatomy and Physiology of Ear</b>	<ul style="list-style-type: none"> <li>Describe the applied anatomy of the external, middle &amp; internal ear.</li> <li>Discuss the functions of the ear.</li> <li>Discuss basic principles &amp; interpretation of various tuning fork tests.</li> <li>Discuss the interpretation of PTA &amp; impedance audiometry</li> </ul>	2 hours	Interactive Lecture SGD	MCQs, SEQs, OSCE
2.	<b>Trauma to External Ear and the Temporal Bone</b>	<ul style="list-style-type: none"> <li>Classify the trauma to external ear and the temporal bone.</li> <li>Describe the appropriate imaging investigations &amp; treatments.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
3.	<b>Otitis Externa</b>	<ul style="list-style-type: none"> <li>Discuss Otitis Externa, its clinical features, differential diagnosis and relevant clinical &amp; radiological investigations and treatment.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
4.	<b>Acute Suppurative otitis media</b>	<ul style="list-style-type: none"> <li>Discuss acute suppurative otitis media.</li> <li>Describe its clinical features, differential diagnosis and relevant clinical &amp; radiological investigations and treatment</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
5.	<b>Chronic Suppurative Otitis Media without cholesteatoma</b>	Discuss Chronic Suppurative Otitis Media and its clinical features, differential diagnosis and relevant clinical & radiological investigations and treatment.	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

6.	<b>Chronic Suppurative Otitis Media with Cholesteatoma</b>	<ul style="list-style-type: none"> <li>Discuss cholesteatoma and its clinical features, differential diagnosis and relevant clinical &amp; radiological investigations and treatment.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
7.	<b>Complications of Suppurative Otitis Media.</b>	<ul style="list-style-type: none"> <li>Discuss intracranial &amp; extracranial otogenic complications and enumerate the appropriate clinical &amp; radiological investigations and treatment.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
8.	<b>Mastoiditis: Acute and Chronic</b>	<ul style="list-style-type: none"> <li>Discuss mastoiditis, its clinical features, differential diagnosis and relevant clinical &amp; radiological investigations and treatment.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
9.	<b>Acoustic Neuroma</b>	<ul style="list-style-type: none"> <li>Discuss acoustic neuroma &amp; the appropriate clinical, audiological, and imaging studies used in diagnosis and treatment of acoustic neuroma.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
10.	<b>Approach to patient with a Conductive hearing loss</b>	<ul style="list-style-type: none"> <li>Discuss the differential diagnosis of hearing loss &amp; the medical and surgical management of CHL.</li> <li>Discuss otosclerosis &amp; its medical &amp; surgical treatment of otosclerosis.</li> <li>Discuss OME &amp; its medical and surgical treatment</li> </ul>	2 hours	Interactive Lecture SGD	MCQs, SEQs, OSCE
11.	<b>Approach to patient with a Sensorineural Hearing Loss (SNHL)</b>	<ul style="list-style-type: none"> <li>Discuss SNHL &amp; its differential diagnosis.</li> <li>Discuss tinnitus &amp; its management.</li> <li>Discuss Ototoxicity &amp; its management.</li> </ul>	2 hours	Interactive Lecture SGD	MCQs, SEQs, OSCE
12.	<b>Vertigo Vestibular Neuronitis Meniere's Diseases BPPV</b>	<ul style="list-style-type: none"> <li>Discuss true vertigo &amp; its types, pathophysiology, investigations &amp; management.</li> <li>Discuss Meniere's disease &amp; its treatment.</li> <li>Discuss BPPV &amp; its clinical features, diagnoses &amp; treatment.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
13.	<b>Approach to a deaf patient</b>	<ul style="list-style-type: none"> <li>Discuss the approach to a deaf patient.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

14.	<b>Approach to Management of Deaf Child</b>	<ul style="list-style-type: none"> <li>Differentiate congenital, developmental, and acquired hearing loss &amp; describe the impact of hearing impairment at various ages and their management.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
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### Theme 5 - Nasal Obstruction

Sr. No.	Lecture Topic	Topic Objectives	Teaching Hours	Mode of Teaching	Assessment Tool
1.	<b>Applied Anatomy, Physiology of Nose &amp; Paranasal Sinuses</b>	<ul style="list-style-type: none"> <li>Discuss the surgical anatomy, physiology &amp; congenital disorders of the nose &amp; PNS.</li> <li>Discuss the congenital disorders of the nose, palate &amp; choanal atresia</li> </ul>	2 hours	Interactive Lecture SGD	MCQs, SEQs, OSCE
2.	<b>Diseases of the Nasal Septum</b>	<ul style="list-style-type: none"> <li>Discuss DNS, its types, the clinical features, medical &amp; surgical treatment of nasal obstruction.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
3.	<b>Sino-Nasal Polyposis</b>	<ul style="list-style-type: none"> <li>Discuss sino-nasal polyposis, its types and describe the clinical features, medical &amp; surgical treatment of nasal polyps.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
4.	<b>Fungal Rhinosinusitis</b>	<ul style="list-style-type: none"> <li>Discuss various fungi implicated in fungal rhinosinusitis and the appropriate clinical, radiological investigations and treatment of fungal rhinosinusitis.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
5.	<b>Sino-Nasal Tumors</b>	<ul style="list-style-type: none"> <li>Discuss various benign and malignant tumors affecting the nose and paranasal sinuses and their clinical features, step involved in diagnosis and treatment options</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
6.	<b>Trauma to Nose and Face and CSF rhinorrhea</b>	<ul style="list-style-type: none"> <li>Discuss the Le Forte classification of mid face fractures &amp; the appropriate clinical and radiological investigations &amp; management of these fractures.</li> <li>Discuss CSF rhinorrhea and the predisposing factors, types, clinical features, investigations and treatment.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
7.	<b>Headaches and Facial Pain</b>	<ul style="list-style-type: none"> <li>Discuss rhinogenic headaches and the appropriate clinical, radiological investigations and treatment.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

8.	<b>Granulomatous Diseases of the Nose</b>	<ul style="list-style-type: none"> <li>Discuss various granulomatous disorders affecting the nose &amp; the clinical features, investigations &amp; treatments.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
9.	<b>Adenoids</b>	<ul style="list-style-type: none"> <li>Discuss anatomy diseases of adenoids and treatment</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
10.	<b>Juvenile Nasopharyngeal Angiofibroma</b>	<ul style="list-style-type: none"> <li>Enumerate diseases of the nasopharynx.</li> <li>Discuss Juvenile nasopharyngeal angiofibroma, clinical features, investigations and treatment.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
11.	<b>Nasopharyngeal Carcinoma</b>	<ul style="list-style-type: none"> <li>Discuss the risk factor, clinical features, investigation, treatment and follow up nasopharyngeal carcinoma</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
12.	<b>Acute Sinusitis</b>	<ul style="list-style-type: none"> <li>Discuss acute sinusitis &amp; the appropriate clinical, radiological investigations and steps involved in treatment of patients.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
13.	<b>Chronic Sinusitis</b>	<ul style="list-style-type: none"> <li>Discuss chronic sinusitis &amp; the appropriate clinical, radiological investigations and steps involved in treatment of patients.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
14.	<b>Complications of Sinusitis</b>	<ul style="list-style-type: none"> <li>Enumerate the predisposing factors for development of complications due to sinusitis.</li> <li>Discuss treatment.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
15.	<b>Allergic Rhinitis (AR) and Non-allergic</b>	<ul style="list-style-type: none"> <li>Discuss allergic rhinitis and its types, pathophysiology, investigations &amp; the medical and surgical treatment.</li> <li>Discuss non –allergic rhinitis and the appropriate clinical and radiological investigations and its treatment.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
16.	<b>Infective Rhinitis: Acute. &amp; Chronic.</b>	<ul style="list-style-type: none"> <li>Discuss infective rhinitis and the medical and surgical treatment of various types of acute and chronic infective rhinitis.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
17.	<b>Foreign Body, Rhinolith, Maggots Nose</b>	<ul style="list-style-type: none"> <li>Discuss Rhinolith and maggots in the nose and the appropriate medical and surgical treatment of patients with these conditions.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
18.	<b>Approach to a patient with Epistaxis</b>	<ul style="list-style-type: none"> <li>Approach to a patient with epistaxis</li> <li>Discuss epistaxis &amp; the appropriate clinical, radiological &amp; hematological investigations &amp;</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

		treatment of the condition.			
<b>RADIOLOGY</b>					
1.	<b>Head X-ray</b>	<ul style="list-style-type: none"> <li>Identify radiological findings of nasal disorders</li> </ul>	2 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

### Theme 6 - Neck Swelling

Sr. No.	Lecture Topic	Topic Objectives	Teaching Hours	Mode of Teaching	Assessment Tool
1.	<b>Para pharyngeal Abscess</b>	<ul style="list-style-type: none"> <li>Discuss the aetiology and management of each Para pharyngeal abscess.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
2.	<b>Retropharyngeal Abscess</b>	<ul style="list-style-type: none"> <li>Discuss the types, aetiology, treatment and complications of each retropharyngeal abscess.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
3.	<b>Submandibular Abscess</b>	<ul style="list-style-type: none"> <li>Discuss the causes and treatment of submandibular abscess.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
4.	<b>Trauma of the Larynx and Neck</b>	<ul style="list-style-type: none"> <li>Classify the nature of trauma to the neck &amp; larynx.</li> <li>Discuss clinical features, investigations and treatment.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
5.	<b>Approach to a neck swelling</b>	<ul style="list-style-type: none"> <li>Discuss the approach to a neck swelling.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
6.	<b>Evaluation of metastatic lymph nodes and occult primary in Neck (Occult Primary).</b>	<ul style="list-style-type: none"> <li>Discuss Occult primary &amp; the predictable nodal drainage in head and Neck region.</li> <li>Discuss the signs and symptoms of occult primary &amp; the appropriate clinical and radiological investigations &amp; different treatment options.</li> </ul>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

## CLINICAL ROTATION ENT 4<sup>TH</sup> YEAR MBBS

### Theme 1 - Foundation of Otorhinolaryngology & Head and Neck



S.No	Topic	Learning Objectives	Assessment Method	Clinical Hours
1.	History taking	Obtain detailed history of sore throat	OSCE	01
2.	Examination	Perform Examination in a sore throat patient including general physical, local and systemic examination	OSCE	02
3.	Nasopharyngeal examination	Perform mirror examination of nasopharynx	OSCE	02
4.	Examination of oral cavity and oropharynx	Examine oral cavity and oropharynx in a systematic way	OSCE	02
5.	Hypopharyngeal Examination	Perform Indirect hypopharyngoscopy with mirror	OSCE	01
6.	Mouth gauge and other instruments	Assemble mouth gauge and name the instrument used in tonsillectomy with utility of each instrument.	OSCE	01
7.	Examination of Neck	Perform systematic examination of Neck	OSCE	02

### Theme 2 - Sore Throat

Sr. No.	Topic	Learning Objectives	Assessment Method	Clinical Hours
1.	Communicate with patient of tonsillectomy	Obtain a pre-operative informed consent from a patient of tonsillectomy	OSCE	01
2.	Tonsillar surgery & its instruments	Observe tonsillectomy surgery and identify instruments used	OSCE	02
3.	Conservative management of sore throat	Discuss a conservative management plan for inpatient acute follicular tonsillitis	OSCE	01
4.	Scrubbing technique	Demonstrate scrubbing hands using proper solution & take proper time by proper method	OSCE	01
5.	Biopsy from oral ulcer	Assist to take a biopsy from tongue ulcer	OSCE	01

### Theme 3 - Difficulty in Swallowing

Sr. No.	Topic	Learning Objectives	Assessment Method	Clinical Hours
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1.	Rigid Endoscopy system	Identify instruments & equipment used in rigid endoscopy system, describerigid endoscopies.	OSCE	01
2.	Oral & oropharyngeal mass palpation	How to palpate a mass in the oral cavityand oropharynx	OSCE	01
3.	Oesophagoscopy	Observe rigid oesophagoscopy done for pharyngeal growth or dysphagia	OSCE	02

<b>Theme 4 - Hoarseness and Stridor</b>				
<b>Sr. No.</b>	<b>Topic</b>	<b>Learning Objectives</b>	<b>Assessment Method</b>	<b>Clinical Hours</b>
1.	History taking	Obtain detailed history of hoarseness & stridor	OSCE	02
2.	Examination	Perform Examination in a patient with hoarseness & stridor, including general physical, local and systemic examination	OSCE	02
3.	Indirect laryngoscopy examination	Perform mirror examination of Laryngopharynx	OSCE	01
4.	Examination of Neck	Perform systematic examination of Neck	OSCE	01
5.	Investigations of Laryngeal diseases	Fill requisition form for different types of investigations for Laryngeal diseases.	OSCE	01
6.	Video laryngoscopy	Observe a video of laryngoscopy for the diagnosis of hoarseness in clinical setting	OSCE	01
7.	Conservative management of Hoarseness	Discuss a conservative management plan for a patient of hoarseness due to voice abuse.	OSCE	01
8.	Laryngoscopy	Observe rigid system laryngoscopy under general anesthesia and identify instruments used in the procedure	OSCE	02
9.	Communicate with a patient for voice rest	Counsel a patient on voice rest	OSCE	01

10.	Stridor in bilateral abductor vocal paralysis	Council bilateral abductor paralysis patient & its management in a post thyroidectomy patient	OSCE	02
11.	Biopsy from laryngeal growth.	Observe the procedure for taking biopsy from laryngeal growth.	Formative	01
12.	Tracheostomy	Demonstrate the procedure of tracheostomy	Formative	01
13.	Communicate with patient on laryngectomy	Demonstrate the procedure how to Obtain informed consent from a patient for total laryngectomy	OSCE	01

### Theme 5 - Deafness, Ear Discharge & Dizziness

Sr. No.	Topic	Learning Objectives	Assessment Method	Clinical Hours
1.	History taking	Obtain detailed history from a patient with ear discharge/deafness/dizziness	OSCE	02
2	Local Examination	Perform clinical examination of the hearing & balance system.	OSCE	01
3.	Otoscopy Tuning fork test Balance testing Examination under microscope	<ul style="list-style-type: none"> <li>• Perform otoscopic examination of the ear</li> <li>• Perform tuning fork tests</li> <li>• Perform test of balance, peripheral &amp; central</li> <li>• Assist in performing EUM</li> </ul>	OSCE	03
4	Investigations of ear diseases	Discuss & fill requisition form for different types of investigations for ear diseases.	OSCE	01
5.	Interpretation of Impedance	Discuss the interpretation of audiogram and impedance.	OSCE	01

### Theme VI - Nasal Obstruction

Sr. No.	Topic	Learning Objectives	Assessment Method	Clinical Hours
1.	History taking	Obtain detailed history from a patient with nasal obstruction	OSCE	02

2	Local Examination	Perform clinical examination of the nose & paranasal sinuses.	OSCE	01
3.	Anterior and posterior Rhinoscopy	Perform anterior & posterior Rhinoscopies with mirror	OSCE	01
4	Probe test	Perform probe test		
5.	Nasendoscopy	Assist in performing nasendoscopy.	OSCE	01
6	Pus culture / sensitivity	Perform Take swab from nose for different purpose	OSCE	01
7.	X – Rays nasopharynx /PNS	interpret X – Rays nasopharynx/PNS for enlarged soft tissues shadow		
8	Nasal patency & adenoid facies in enlarged adenoids	Perform examination for nasal patency in enlarged adenoids.	OSCE	01
9.	Adenoid surgery	Observe adenoid surgery being done in operating room	Formative	01
10.	CT scan nose & nasopharynx	Interpret CT scan in nasopharyngeal angiofibroma, describe bowing sign.	Formative	01
11.	Nasopharyngeal Biopsy	Observe surgery for nasopharyngeal biopsy	Formative	01
12.	Investigations of nose & paranasal sinuses diseases	Document Fill requisition form for different types of investigations for nose & paranasal sinuses diseases.	Formative	01

<b>Theme VII - Swelling Neck</b>				
<b>Sr. No.</b>	<b>Topic</b>	<b>Learning Objectives</b>	<b>Assessment Method</b>	<b>Clinical Hours</b>
1.	Examination of Neck Nodes	Perform systematic examination of all groups of neck nodes	OSCE	02
2.	Examination of lump in the neck	Perform examination of lump in the neck in a systematic way.	OSCE	01
3.	Surgery on a pharyngeal abscess	Observe surgery on a pharyngeal abscess & describe drainage of peritonsillar abscess	OSCE	01
4.	Thyroid examination	Perform Thyroid Examination both anatomically & functionally	OSCE	01

5.	Pharyngeal abscess surgery related instruments	Identify instruments used in drainage of pharyngeal abscess surgery	OSCE	01
6.	Examination of parotid	Perform examination of parotid swelling	OSCE	01
7.	Examination of thyroid	Perform examination of thyroid gland	OSCE	01

### CLINICAL SCIENCES SUBJECT

ENT				
S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>FAMILY MEDICINE</b>	Sleep Problems (snoring, OSA)	1	Lecture
		Rhinitis	1	Lecture
	Common ENT Complains	Sinusitis	1	Lecture
		Age related deafness	1	Lecture
		Hoarseness of voice	1	Lecture

### TEACHING HOURS ALLOCATION

Themes	Total Hours	In class teaching (Hours)	Clinical (Hours)
<b>Theme 01:</b> Foundation of Otorhinolaryngology & Head and Neck	11	---	11
<b>Theme 02:</b> Sore Throat	21	15	06
<b>Theme 03:</b> Difficulty in Swallowing	09	05	04
<b>Theme 04:</b> Hoarseness & Stridor	36	19	17
<b>Theme 05:</b> Deafness, Ear Discharge & Dizziness	27	20	08
<b>Theme 06:</b> Nasal Obstruction	29	19	10
<b>Theme 07:</b> Swelling Neck	14	06	08
<b>Family Medicine</b>	5	5	-
<b>Total</b>	<b>152</b>	<b>89</b>	<b>64</b>

### EXAMINATION RULES AND REGULATIONS

1. Student must report to examination hall/venue, in time for smooth conduction of the exams.
2. No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
3. No students will be allowed to sit in exam without College ID Card, and Lab Coat
4. Students must sit according to their roll numbers mentioned on the seats.
5. Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
6. Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
7. Students must not possess any written material or communicate with their fellow students
8. Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
9. **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### ASSESSMENT

#### **Internal: Total 10% (20 marks)**

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

#### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

## METHODS OF ASSESSMENT

### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

### **Short Essay Questions (SEQs):**

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

### **ASSIGNMENTS**

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.

- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### WEEKLY TESTS

The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

- The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.
- It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.
- Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

### POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD

Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class



PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-



67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable

### ASSEMENT BLUEPRINT

#### ENT MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

### LEARNING RESOURCES

The learning resources for the educational contents of MBBS program are available for the students which assist learners to achieve the outcomes and by focusing on educational content. In addition; the names of the books for each subject as a learning resources is available with the educational content of the same subject.

Following learning resources can be used by the undergraduates;

- Books
- Evidence based articles from journals
- Digital library to search the material for self-directed learning
- Video Tapes
- Displays
- Models
- Phantom Heads
- Printed Notes
- Case based scenarios'
- Community Visits

Recommended Books FOURTH YEAR MBBS			
General Pathology	Physiology	Pharmacology	Anatomy

<p><b>Robbins &amp; Cotran Pathologic Basis Of Disease</b> <b>Vinay Kumar, Abul K. Abbas, Jon C. Aster</b> <b>10<sup>th</sup> Edition</b></p>	<p><b>Guyton And Hall Textbook Of Medical Physiology</b> <b>Guyton And Hall</b> <b>13<sup>th</sup> Edition</b></p>	<p>1. Lippincott Illustrated Reviews: Pharmacology Karen Whalen, Carinda Feild, Rajan Radhakrishnan</p> <p><b>Pharmacology: Examination &amp; Board Review,</b> <b>Anthony J. Trevor, Bertram G. Katzung, Marieke Knudering-Hall</b> <b>12<sup>th</sup> Edition</b></p>	<p><b>Clinically Oriented Anatomy</b> <b>Keith.L. Moore, Arthur F. Dalley, Anne M.R. Arthur</b> <b>(7<sup>th</sup> or Latest Edition)</b> <b>Gray's Anatomy For Students</b> <b>Drake &amp; Vogl &amp; Mitchell</b> <b>3<sup>rd</sup> Or Latest Edition</b></p>
<p><b>Community Medicine</b></p>	<p style="text-align: center;"><b>ENT</b></p>		
<p><b>Park's Textbook Of Preventive And Social Medicine</b> <b>K. Park</b> <b>26<sup>th</sup> Edition</b></p> <p><b>Text Book Of Community Medicine &amp; Public Health</b> <b>Ilyas Shah Ansari</b> <b>8<sup>th</sup> Edition</b></p>	<ol style="list-style-type: none"> <li>1. <b>Diseases Of Ear, Nose And Throat</b> <b>Logan Turner</b> <b>11<sup>th</sup> Edition</b></li> <li>2. <b>Lecture Notes Ear, Nose And Throat Notes</b> <b>P.D Bull</b> <b>10<sup>th</sup> Edition</b></li> <li>3. <b>Diseases Of Ear, Nose And Throat</b> <b>P.L. Dhingra</b> <b>6<sup>th</sup> Edition</b></li> <li>4. <b>Comprehensive Ophthalmology</b> <b>A K Khurana</b> <b>6<sup>th</sup> Edition</b></li> </ol>		



**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you? Y  N
- B. The course contents met with your expectations  
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned  
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with  
l. Too few examples 5. Adequate examples
- E. The level of the course was  
l. Too low 5. Too high
- F. The course contents compared with your expectations  
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices  
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?  
l. Not at all 5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand  
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used  
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate  
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful  
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes  No

F. Please give overall rating of the course

90% - 100% (    )

80% - 90% (    )

70% - 80% (    )

60% - 70% (    )

50% - 60% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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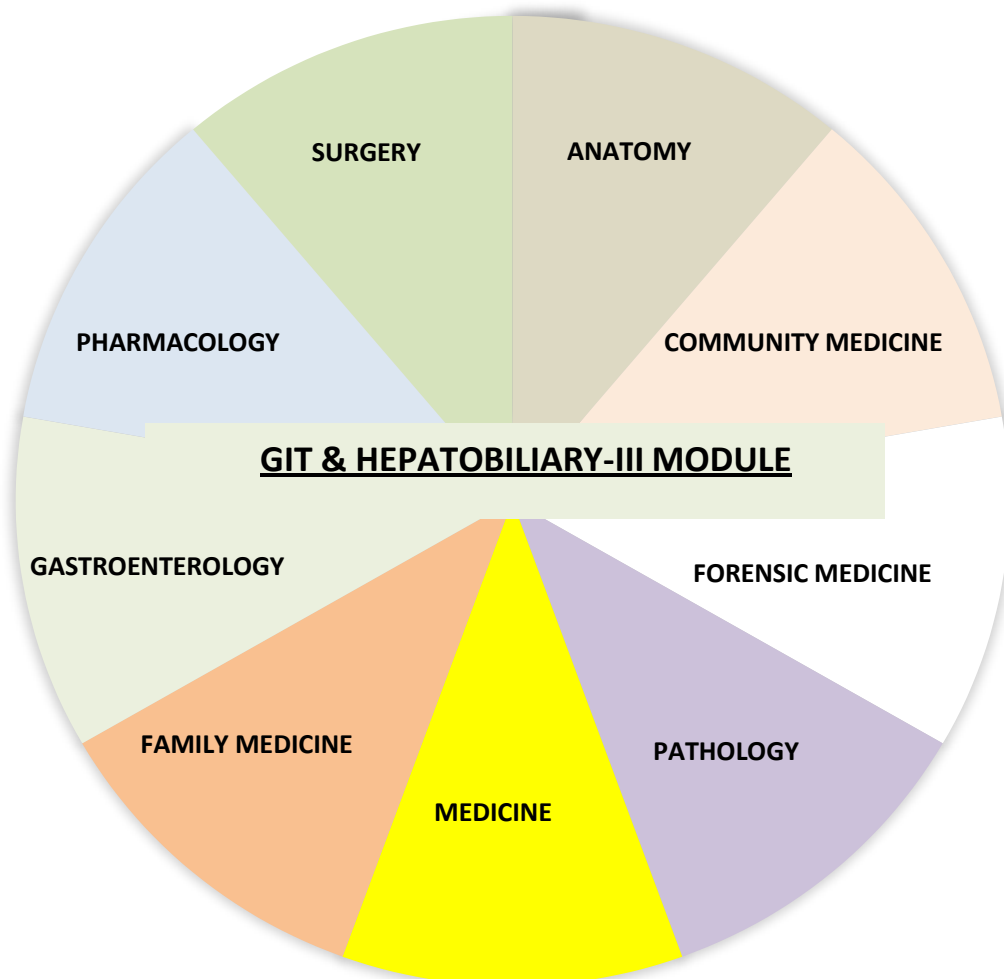
## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Eye, ENT, Endocrine and Reproduction-III, Git and Hepatobilliary-III, Neuroscience-II and Renal-II modules which link basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF GIT & HEPATOBILIARY-III MODULE

#### MODULE OVERVIEW



## GIT AND HEPATOBILIARY-III MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Fourth professional
<b>Duration</b>	8 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

## GIT AND HEPATOBILIARY -III MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Prof: Dr. Allah Bachayo Rajar	Community Medicine	Professor
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

### Module objectives:

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

### Achievement of objectives:

Focuses on information pertaining to examination policy, rules and regulations.

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations
- Skills session
- Practicals

- Self-Directed Study

- **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to pharmacology, microbiology, forensic medicine, and community medicine have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.



## INTRODUCTION

Greetings from the Liver and GIT module. This fascinating session will act as a foundation and is crucial to your future practice as physicians. This module includes a number of interactive tasks that are meant to make your learning engaging and fruitful.

The topics covered in this module include malignancies of the stomach, diarrheal disorders, malabsorption syndromes, inflammatory bowel diseases, benign and malignant lesions of the small and large intestine, non-neoplastic and tumors of the esophagus, inflammation and peptic ulcer, and diseases of the salivary gland.

Liver pathologies include jaundice and cholestasis, cholangiopathies and autoimmune liver diseases, metabolic liver diseases-1, drug and toxin-induced liver injury and fatty liver disease, liver cirrhosis, liver tumors, inflammatory illnesses, and gallbladder tumors. Understanding the pathology of the GIT and liver will be made easier by the fact that all of these illnesses are highly prevalent in clinical settings.

In order to assist students in developing their clinical approach to comprehend and solve the clinical problem by connecting their foundational knowledge of anatomy, physiology, biochemistry, and pathology with findings of a clinical case, real-life scenarios have been added to the module and will be discussed in small groups

## RATIONALE

Diseases of the GIT are common all over our country. It is essential to make early diagnosis and treat the disease in order to reduce morbidity and mortality. This module provides an integrative understanding and detailed and clinically relevant information of pathology related to the digestive and biliary system.

## LEARNING OBJECTIVES

### General learning Objectives:

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

1. Describe the etiology, pathogenesis, morphology, clinical features, laboratory diagnosis, medical and surgical management of diseases of GIT & hepatobiliary system.
2. Interpret the liver function tests in different hepatic diseases.
3. Describe the basic and clinical pharmacology of drugs used in GIT & hepatobiliary diseases.
4. Write prescriptions for common GIT & hepatobiliary disorders.
5. Describe medico legal aspects of abdominal trauma.
6. Describe medico legal aspects of vegetable acid, corrosive and irritants poisoning.
10. Describe the epidemiology and prevention of malnutrition and viral hepatitis.
11. Analyze demographic processes in context of public health care.

### Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

12. Explain the etiology and clinical manifestations of common gastrointestinal diseases.
13. Assess patients with children and adult nutritional problems.
14. Examine the gastrointestinal system physically.
15. Take a history and create a suitable investigative strategy to arrive at a differential diagnosis.
16. For a diagnosis, evaluate the results of the investigations, exams, and history.
17. Apply the fundamentals of managing gastrointestinal and nutritional diseases.
18. Talk to the patients about prognosis and preventive measures.
19. Comprehend the public health importance of Nutrition.

20. Understand the nutritional requirement for different ages and gender.
21. Identify the factors for micro and macronutrient deficiencies in Pakistan.
22. Identify the risk factors of Malnutrition in children < 5 and over 5 years of age
23. Classify the types of malnutrition among children under and over 5 years

**Skills / Psychomotor Domain:**

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

24. Observation and Assistance
25. Performing the skill under supervision
26. Performing the skill independently
27. Link the structure and functional abnormalities of the gastrointestinal tract based on the clinical history and signs and symptoms)
28. Obtain a comprehensive history of patient with gastrointestinal and hepatobiliary disorders.

**Attitude / Affective Domain:**

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

29. Respect oneself and one's peers, both when providing and receiving comments.
30. To show patients compassion and understanding.
31. Develop your ability to communicate while keeping a sense of duty to your patients.
32. Showcase appropriate laboratory procedures.
33. Relate to patient and careers vulnerability
34. Demonstrate ethical self-management
35. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
36. Display compassion with patient and colleagues
37. Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease

**Outcomes of Git and Hepatobiliary-III Module**

- A. Knowledgeable
- B. Skillful
- C. Community Health Promoter
- D. Problem-solver
- E. Professional
- F. Researcher
- G. Leader and Role Model

**THEMES FOR ENDOCRINE AND REPRODUCTION-II MODULE**

S.NO	Themes	Duration
1	Difficulty in swallowing	1 week
2	Epigastric pain	1 week
3	Pain right upper abdomen	2 week
4	Diarrhea and Constipation	3 week
5	Bleeding per Rectum	1 weeks

**SPECIFIC LEARNING OBJECTIVES THEME WISE**

Sr. No.	Lecture Topic	Topic Objectives	Teaching Hours	Mode of Teaching	Assessment Tools
<b>Theme 1: Difficulty in swallowing (Pathology)</b>					
1	Salivary Gland (Inflammation and tumors)	Classify the inflammatory and neoplastic diseases of salivary gland.	1	LGD	MCQs SAQ
2	Esophagus	Describe the etiology, morphology and clinical presentation of inflammatory and neoplastic diseases of salivary gland.	1	LGD	MCQs SAQ
<b>Theme 1: Difficulty in swallowing (Medicine)</b>					
3	Oral Cavity Diseases	Discuss the etiology of stomatitis and Aphthous ulcers Discuss the clinical features of stomatitis and Aphthous ulcers Discuss the investigations of stomatitis and Aphthous ulcers Devise a management plan for stomatitis and Aphthous ulcers	1	LGD	MCQs SAQ
4	Esophagus: 1) Esophageal motility disorder	Discuss the causes of esophageal motility disorders Discuss the clinical features of esophageal motility disorders Discuss the relevant investigations of esophageal motility disorders Devise a management plan of esophageal motility disorders	1	LGD	MCQs SAQ
5	2) Esophagitis	Discuss the etiology of esophagitis Discuss the clinical features of esophagitis Discuss the appropriate diagnostic testing for Esophagitis Devise a management plan for esophagitis	1	LGD	MCQs SAQ
6	Cardia achalasia	Discuss the etiology, clinical features, investigations and management of Cardia achalasia	1	LGD	MCQs SAQ
7	Gastro Esophageal reflux disease (GERD)	Discuss the risk factors, etiology, clinical features, investigations, complications and management of GERD	1	LGD	MCQs SAQ
<b>Theme 1: Difficulty in swallowing (ENT)</b>					
8	Cleft lip and palate	Discuss the etiology, clinical features, investigations, complications and management of cleft lip and palate	1	LGD	MCQs SAQ
9	Pharyngitis and Tonsillitis	Discuss the etiology, clinical features, investigations, complications and management of Pharyngitis and acute Tonsillitis	1	LGD	MCQs SAQ
		Explain the clinical features, and management of peritonsillar abscess	1	LGD	MCQs SAQ

		Discuss the classification, etiology, clinical features, investigations, and management of Chronic Tonsillitis	1	LGD	MCQs SAQ
10	Oropharyngeal cancer	Discuss the classification, etiology, clinical features, investigations, and management of oropharyngeal cancers	1	LGD	MCQs SAQ
11	Salivary glands	Classify diseases of the salivary glands	1	LGD	MCQs SAQ
		Explain the etiology, clinical features, investigations and management of Mumps, and Sialadenitis	1	LGD	MCQs SAQ
		Explain the etiology, clinical features, investigations and management of salivary ducts stones	1	LGD	MCQs SAQ
12	Dysphagia	Explain the types, etiology, clinical features, investigations and management of a patient with dysphagia	1	LGD	MCQs SAQ
<b>Theme 1: Difficulty in swallowing (Surgery)</b>					
13	Tumors of the esophagus	Discuss the classification, etiology, clinical features, investigations, staging and management of Esophageal cancers	1	LGD	MCQs SAQ
14	Para-esophageal hiatus hernia	Explain the etiology, clinical features, investigations and management of Para- esophageal hiatus hernia	1	LGD	MCQs SAQ
<b>Theme 1: Difficulty in swallowing (Medical Education)</b>					
15	Social accountability	Explain the concept of social accountability	1	LGD	MCQs SAQ
16		Differentiate between different social accountability issues	1	LGD	MCQs SAQ
<b>Theme 2: Epigastric pain (Pathology)</b>					
17	Gastritis	Explain the types, etiology, microscopic morphology and clinical features of Gastritis	1	LGD	MCQs SAQ
18	Peptic ulcers	Discuss the etiology, pathophysiology, morphology, complications and lab. diagnosis of peptic ulcer disease	1	LGD	MCQs SAQ
		Discuss the role of H.Pylori & campylobacter in the causation of Peptic ulcer disease			
		Discuss the morphology, virulence factors and lab diagnosis of H. Pylori & campylobacter			
19	Gastric polyps and tumors	Classify gastric polyps and tumors	1	LGD	MCQs SAQ
		Describe the pathogenesis, morphology, lab diagnosis and complications of gastric polyps and tumors.	1	LGD	MCQs SAQ
<b>Theme 2: Epigastric pain (Medicine)</b>					

20	Gastritis	Explain the types, etiology, clinical features, investigations, management and complications of Gastritis	1	LGD	MCQs SAQ
21	Peptic ulcer disease	Explain the types, etiology, clinical features, investigations, management and complications of Gastritis	1	LGD	MCQs SAQ
		Describe H.pylori eradication therapy protocols in the treatment of peptic ulcer disease			
22	Upper GI Bleeding	Explain the etiology, clinical features, investigations and management of a patient with upper GI bleeding	1	LGD	MCQs SAQ
		Describe the indications and procedures of pharmacological and endoscopic treatment of variceal bleeding			

### Theme 2: Epigastric pain (Pharmacology)

23	Anti-emetics	Classify anti-emetic drugs	4	LGD	MCQs SAQ
		Describe the mechanism of serotonin antagonists as anti-emetic agents.			
		Enlist the clinical uses (anti-emetic) and adverse effects of serotonin antagonists.			
		Describe the pharmacological basis of serotonin antagonists in chemotherapy induced vomiting			
		Describe the mechanism of H1-antagonists as anti-emetic agents.			
		Enlist the clinical uses (anti-emetic) of H1-antagonists.			
		Describe the mechanism of anticholinergic drugs as anti-emetic agents.			
		Enlist the clinical uses (anti-emetic) of anticholinergic drugs.			

		Describe the pharmacological basis of scopolamine in motion sickness			
		Describe the anti-emetic mechanism of D2- receptor blockers (Metoclopramide & Domperidone).			
		Enlist the clinical uses (anti-emetic) and adverse effects of D2-receptor blockers.			

		<p>Compare the pharmacological features of metoclopramide &amp; Domperidone.</p> <p>Describe the drug interaction of metoclopramide with levodopa.</p> <p>Describe the mechanism of neuroleptics as anti-emetic agent.</p> <p>Enumerate the clinical uses (anti-emetic) of neuroleptic drugs.</p> <p>Enumerate the indications (anti-emetic) of glucocorticoids.</p> <p>List anti-emetic drugs used in morning sickness.</p> <p>List anti-emetic drugs used in chemotherapy induced vomiting.</p>			
<b>24</b>	Drugs used in the treatment of variceal bleeding	<p>Enlist the drugs used in variceal hemorrhage</p> <p>Describe the mechanism of somatostatin and octreotide in variceal hemorrhage</p> <p>Describe the mechanism of Vasopressin &amp; Terlipressin in variceal hemorrhage</p> <p>Describe the mechanism of beta-blockers in variceal hemorrhage</p>	1	LGD	MCQs SAQ
<b>25</b>	Drugs used in the treatment of Peptic ulcer disease and Gastritis	<p>Classify the drugs used in Peptic ulcer disease</p> <p>Describe the mechanism of action, indications and adverse effects of proton pump inhibitors (PPIs).</p> <p>Describe the pharmacokinetics of PPIs with special emphasis on time of administration</p> <p>Describe the drug interaction of Omeprazole &amp; H2 blockers with Sucralfate</p> <p>Describe the drug interaction of Omeprazole with Clopidogrel</p> <p>Enumerate the indications (anti-emetic) of glucocorticoids.</p>	1	LGD	MCQs SAQ
		<p>Describe the mechanism of action, indications and adverse effects of H-2 blockers.</p> <p>Compare/differentiate H2-blockers in terms of bioavailability and involvement in drug interactions</p>	4	LGD	MCQ, SEQ

		Describe the mechanism of action, indications and adverse effects of Antacids.			
		Enumerate the properties of an ideal antacid.			
		Describe the pharmacokinetics of antacids with special emphasis on time of administration			
		Describe the drug interactions of antacids with tetracyclines, iron and fluroquinolones.			
		Describe the mechanism of sucralfate in the treatment of peptic ulcer			
		List the indications of sucralfate.			
		Discuss the drug interaction of sucralfate with digoxin, ketoconazole and tetracyclines.			
		Describe the pharmacokinetics of sucralfate with special emphasis on time of administration.			
		Describe the mechanism, indications and adverse effects of bismuth compounds.			
		Describe the mechanism of action, indications and adverse effects of H-2 blockers.			
		Describe the role of anticholinergic drugs in peptic ulcer.			
		List the indications (anti-pepticulcer) of anticholinergic drugs.			
		Discuss the pharmacological basis for the use of prostaglandin analogues (Misoprostol) in the treatment of peptic ulcer.			
		List the contraindications of misoprostol.			
		Describe triple therapy for the eradication of H.pylori infection.			
		Describe quadruple therapy for the eradication of H.pylori infection			

**Theme 2: (Epigastric pain)Surgery**

30	Gastric cancer	Describe the types, etiology, risk factors, lab diagnosis and management of a patient with gastric cancer	1	LGD	MCQs SAQ
31	Gastric outlet obstruction	Describe the etiology, diagnosis and management of a patient with gastric outlet obstruction	1	LGD	MCQs SAQ

**Theme 2: Epigastric pain (Community medicine)**

32	Health system of Pakistan: Introduction	Describe health care system of Pakistan using WHO Health system frame work	1	LGD	MCQs SAQ
33	Primary health care (PHC)	Define PHC	2	LGD	MCQs SAQ
		Describe the history of development of PHC			
		Describe the concepts and components of PHC			
		Describe comprehensive & selective PHC			
		Describe reasons for failure of PHC			
		Describe Health Systems before & after PHC			
		Describe district health care system			
		Enumerate indicators for assessing PHC			
34	Health education	Define health education	4	LGD	MCQs SAQ
		Describe objectives and functions of health education			
		Describe the components of health education			
		Describe the methods of health education			
		Describe the communication channel in health education			
		Describe the constraints in health education			
		Describe classification of theories of health education			
		Describe the stages in health education			
		Describe the principles of health education			
		Describe the strategies for an effective health education program			
		Explain the methods of evaluation and effectiveness of a health education project			



<b>35</b>	Health	Define concept of HMIS	1	LGD	MCQs SAQ
		Enumerate the components of HMIS			
		Describe its importance in health care delivery system			
		Enumerate the principles of HMIS			
		Give the causes of failure of HMIS			
<b>36</b>	Hospital administration	Define health care delivery system	1	LGD	MCQs
		Describe the need of a specialized hospital administration			SAQ
		Describe the attributes of a good administrator			
		Describe functions involved in administration			
		Describe the levels of hospitals and management levels in a hospital			
<b>37</b>	Health plans - Longitudinal, horizontal, integrated, 5 year, ADP, SAP, Short term, long term	Describe different health plans	1	LGD	MCQs SAQ
		Describe characteristics of health plans			
<b>38</b>	Health plans – MDGs	Enumerate MDGS	1	LGD	MCQs SAQ
		Describe targets & indicators of various health related MDGs			
		Describe reasons for failure to achieve MDGS			
<b>39</b>	Health plans – SDGs	Enumerate SDGs related to health	1	LGD	MCQs SAQ
		Describe targets & indicators of various health related SDGs			
		Describe Pakistan progress on set targets			

40	Health planning	Define health planning	1	LGD	MCQs SAQ
		Describe importance & use of planning in health			
		Explain the reasons for ineffective planning in Pakistan			
		Describe health planning cycle			
		Describe the types of health planning			
		Describe functions involved in administration			
41	Health economics	Define Health economics	1	LGD	MCQs SAQ
		Explain the importance of economic studies in health			
		Describe different tools used in evaluations			
42	Health policy	Define health policy	1	LGD	MCQs SAQ
		Describe its role in health system			
		Describe different stages in policy making			
		Describe the different types of policies			
		Describe the constraints in policy making			
		Describe health policy of Pakistan.			
43	Role of international health agencies in public health	Enumerate international health agencies working in health sector.	1	LGD	MCQs SAQ
		Discuss structure and function of WHO & UNICEF			
		Explain the roles of WHO & UNICEF in Pakistan.			
<b><u>Theme 3: Pain right upper abdomen (Anatomy)</u></b>					
44	Gross anatomy	Explain the lobes and segments of the liver	1	LGD	MCQs SAQ
		Discuss the gross structure of gall bladder and biliary channels			
		Explain the gross and microscopic structure of the pancreas			

45	Liver histology	Explain the microscopic structure of the liver and gall bladder	1	LGD	MCQs SAQ
<b>Theme 3: Pain right upper abdomen (Pathology)</b>					
46	Liver Function Tests	Enumerate the functions of the liver. Explain the significance of different liver function tests.	1	LGD	MCQs SAQ
		Interpret the Liver function tests in different diseases.			
47	Mechanisms of liver injury and repair	Describe the etiology and morphology of liver injury and repair	1	LGD	MCQs SAQ
48	Acute Liver failure	Describe the etiology, pathogenesis, clinical and biochemical and other features of acute liver failure	1	LGD	MCQs SAQ
49	Chronic	Describe the etiology, pathogenesis, clinical and biochemical and other features of chronic liver disease	1	LGD	MCQs SAQ
		Explain the complications of liver cirrhosis			
50	Portal hypertension	Describe the etiology, pathogenesis, clinical features and complication of portal hypertension	1	LGD	MCQs SAQ
51	Viral hepatitis A and E	Explain the Etiology, pathogenesis, morphology and clinical features of Acute viral hepatitis A and E infection	1	LGD	MCQs SAQ
52	Viral hepatitis B	Explain the Etiology, risk factors, pathogenesis, morphology and clinical features of Acute viral hepatitis B infection	2	LGD	MCQs SAQ
		Explain the pathogenesis, morphology and clinical features of Chronic viral hepatitis B infection			
		Discuss the stages of viral hepatitis B infections			
		Discuss the complications of chronic Hepatitis B virus infection			
		Discuss the serological markers of hepatitis B Virus infection			
		Explain the preventive strategies of Hepatitis B virus infection			

53	Viral Hepatitis C	Explain the Etiology, risk factors, pathogenesis, morphology and clinical features of viral hepatitis  C infection	1	LGD	MCQs SAQ
		Discuss the complications of chronic Hepatitis C virus infection			
54	Autoimmune hepatitis	Define autoimmune hepatitis	1	LGD	MCQs SAQ
		Explain the serological and morphological features of autoimmune hepatitis			
55	Toxin and hepatitis	Explain the etiology and morphological features of toxins and drug induced hepatitis	1	LGD	MCQs SAQ
56	Alcoholic liver disease	Discuss the morphology, pathogenesis and complications of Alcoholic liver disease	1	LGD	MCQs SAQ
57	Metabolic liver diseases  • Non-Alcoholic liver disease (NAFLD) • Hemochromatosis • Wilson's disease • Alpha-1	Describe the morphology, clinical features and complications of NAFLD, Hemochromatosis, Wilson's disease and Alpha-1 Anti-Trypsin deficiency  Describe the etiology, morphology, features and complications of Hemochromatosis  Describe the etiology, morphology, features and complications of Wilson's disease  Describe the etiology, morphology, deficiency	1	LGD	MCQs SAQ
58	Liver abscess	Describe the etiology, pathogenesis, morphology, clinical presentation, complications	1	LGD	MCQs SAQ
59	Tumors of the liver	Classify liver tumors  Explain the benign tumors of the liver  Discuss the risk factors, etiology, morphology, clinical features, staging and complications of hepatocellular carcinoma	1	LGD	MCQs SAQ
60	Gall bladder  Gall stone	Discuss the types, risk factors, morphology, clinical features and complications of gall stones	1	LGD	MCQs SAQ

61	Chole cystitis	Discuss the risk factors, etiology, morphology, clinical features and complications of acute cholecystitis	1	LGD	MCQs SAQ
		Discuss the risk factors, etiology, morphology, clinical features and complications of Chronic cholecystitis			
62	Gall bladder cancer	Discuss the risk factors, etiology, morphology, clinical features, staging and complications of carcinoma gall bladder			
63	Pancreas	Enlist and define the congenital anomalies of pancreas	1	LGD	MCQs SAQ
		Discuss the risk factors, etiology, morphology, clinical features and complications of acute pancreatitis			
		Discuss the risk factors, etiology, morphology, clinical features and complications of chronic pancreatitis			
		Describe the pathogenesis and complications of pancreatic pseudocyst			
64	Gall bladder Gall stone s	Discuss the types, risk factors, morphology, clinical features and complications of gall stones	1	LGD	MCQs SAQ
65	Chole cystiti s	Discuss the risk factors, etiology, morphology, clinical features and complications of acute cholecystitis			
<b>Theme 3: Pain right upper abdomen (Pediatrics)</b>					
66	Hereditary hyperbilirubine mias	Classify hereditary hyperbilirubinemias	1	LGD	MCQs SAQ
		Explain the types, clinical features, investigations and management of different hereditary hyperbilirubinemias			
67	Acute hepatitis A	Explain the Etiology, pathogenesis, features, investigations and treatment of Acute viral hepatitis A infection	1	LGD	MCQs SAQ
<b>Theme 3: Pain right upper abdomen (Medicine)</b>					
68	Hepatitis B virus infection	Explain the Etiology, pathogenesis, viral hepatitis B infection	1	LGD	MCQs SAQ
		Explain the Etiology, pathogenesis, features, investigations and treatment of chronic viral hepatitis B infection			

69	Hepatitis C virus infection	Explain the Etiology, pathogenesis, viral hepatitis C infection	1	LGD	MCQs SAQ
		Explain the clinical features, investigations, management and complications of liver cirrhosis			
		Explain the treatment of a patient with hepatic encephalopathy			
70	Metabolic liver diseases	Discuss the management of a patient with Wilson's disease	1	LGD	MCQs SAQ
		Discuss the management of a patient with Hemochromatosis			
		Discuss the management of a patient with primary biliary cirrhosis			
		Discuss the management of a patient with autoimmune hepatitis			
71	Hepatic vein obstruction	Discuss the etiology, clinical features of hepatic vein obstruction	1	LGD	MCQs SAQ
72	Hepatocellular carcinoma	Explain the etiology, clinical features of hepatocellular carcinoma	1	LGD	MCQs SAQ
73	Carcinoma of the pancreas	Discuss the risk factors, etiology, clinical features of pancreas	1	LGD	MCQs SAQ
<b>Theme 3: Pain right upper abdomen (Surgery)</b>					
74	Gall bladder and pancreas	Explain the etiology, clinical features of gall stones	1	LGD	MCQs SAQ
		Explain the etiology, clinical investigations, treatment and complications of acute and chronic cholecystitis			
		Explain the etiology, clinical investigations, treatment and complications of acute and chronic pancreatitis			
75	Carcinoma of the gall bladder	Discuss the risk factors, etiology, clinical features of gall bladder	1	LGD	MCQs SAQ
76	Liver abscess	Explain the etiology, clinical features of liver abscesses	1	LGD	MCQs SAQ

77	Hydatid liver cysts	Explain the etiology, clinical features of Hydatid liver cysts.	1	LGD	MCQs SAQ
<b>Theme 3: Pain right upper abdomen (Pharmacology)</b>					
78	Hepatotoxic drugs	Describe first pass hepatic metabolism	1	LGD	MCQs SAQ
		Enlist common hepatotoxic drugs			
		Explain the drug treatment of paracetamol poisoning.			
79	Drugs used in the treatment of hepatitis B	Classify the drugs for hepatitis B virus infection.	2	LGD	MCQs SAQ
		Describe the duration and adverse effects of drugs used in the treatment of chronic hepatitis B.			
		Classify the drugs for hepatitis C virus infection.			
80	Drugs used in the treatment of hepatitis C	Describe the duration and adverse effects of drugs used in the treatment of chronic hepatitis C.	1	LGD	MCQs SAQ
<b>Theme 3: Pain right upper abdomen (Community medicine)</b>					
81	Viral Hepatitis	Describe the epidemiological determinants of Hepatitis B & C.	1	LGD	MCQs SAQ
		Describe the prevalence and incidence with reference to local context.			
		Describe the preventive & control measures for Hepatitis B & C.			
<b>Theme 3: Pain right upper abdomen (Family Medicine)</b>					
82	Acute and chronic hepatitis	Explain the etiology and clinical features of acute hepatitis.	2	LGD	MCQs SAQ
		Explain the management strategies of acute hepatitis in family practice.			
		Explain the etiology, clinical features and complications of Chronic hepatitis.			
		Explain the management strategies of chronic hepatitis in family practice.			

		Describe the red flags in a patient with acute and chronic hepatitis for referral to specialty care.			
<b>Theme 4: Diarrhea and Constipation (Pathology)</b>					
<b>83</b>	Intestinal obstruction	Define hernia, adhesions, volvulus, and intussusception	1	LGD	MCQs SAQ
<b>84</b>	Ischemic bowel disease	Describe the etiology, pathogenesis, morphology, and complications of small bowel ischemia	1	LGD	MCQs SAQ
<b>85</b>	Diarrheas	Define malabsorption syndrome	1	LGD	MCQs SAQ
		Classify diarrheas			
		Explain the etiology, morphology, features and complications of Celiac disease			
<b>86</b>	Bacterial enterocolitis	Explain the etiology, pathogenesis, and clinical features of bacterial enterocolitis	1	LGD	MCQs SAQ
		Explain the etiology, pathogenesis, morphology and clinical features of Salmonellosis			
<b>87</b>	Parasitic enterocolitis	Classify the parasites invading the small gut	1	LGD	MCQs SAQ
<b>88</b>	Entamoeba histolytica	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Amebiasis	1	LGD	MCQs SAQ
<b>89</b>	Giardia lamblia	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Giardiasis	1	LGD	MCQs SAQ
<b>90</b>	Hymenolepis nana	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of H. nana infestation	1	LGD	MCQs SAQ
<b>91</b>	Intestinal obstruction	Define hernia, adhesions, volvulus, and intussusception	1	LGD	MCQs SAQ
<b>92</b>	Diphyllobothrium latum	Discuss the life cycle, morphology, pathogenesis, Clinical features and complications of Diphyllobothrium latum	1	LGD	MCQs SAQ
<b>93</b>	Schistosoma	Enlist physical characteristics of Trematodes	1	LGD	MCQs SAQ
		Classify Schistosoma on the basis of organ systems affected	1	LGD	MCQs SAQ



		Describe the routes of infection, pathophysiology life cycle, clinical features and lab diagnosis of Schistosoma hematobium, mansoni and japonicum			
		Compare the morphological characteristics of eggs of different species of Schistosoma.			
94	Ascaris lumbricoides	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Ascaris lumbricoides	1	LGD	MCQs SAQ
95	Strongyloides	Discuss the life cycle, morphology, pathogenesis, clinical features and Strongyloides	1	LGD	MCQs SAQ
96	Ankylostoma duodenale	Discuss the life cycle, morphology, pathogenesis, clinical features and Ankylostoma duodenale	1	LGD	MCQs SAQ
97	Diphyllobothrium latum	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Diphyllobothrium latum	1	LGD	MCQs SAQ
98	Enterobius vermicularis	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Enterobius vermicularis	1	LGD	MCQs SAQ
<b>Theme 4: Diarrhea and Constipation (Medicine)</b>					
99	Intestinal tuberculosis	Discuss the etiology, pathogenesis, features, investigations, treatment and complications of intestinal tuberculosis	1	LGD	MCQs SAQ
<b>Theme 4: Diarrhea and Constipation (Surgery)</b>					
100	Acute appendicitis	Discuss the etiology, risk factors, pathogenesis, clinical features, differential diagnosis, investigations, treatment and complications of acute appendicitis	1	LGD	MCQs SAQ
101	Intestinal obstruction	Discuss the etiology, clinical features and complications of intestinal obstruction	1	LGD	MCQs SAQ
<b>Theme 4: Diarrhea and Constipation (Pharmacology)</b>					
102	Antidiarrheal etc	Define and classify antidiarrheal agents	1	LGD	MCQs SAQ

		Describe the mechanism of action of different antidiarrheal agents			
<b>103</b>	Laxatives (Bulk-forming, stool softeners, osmotic laxatives, laxatives, etc.	Define and classify laxative drugs	1	LGD	MCQs SAQ
		Describe the mechanism of action of different laxatives			
<b>104</b>	Lactulose	Describe the pharmacological basis of Lactulose in the treatment of hepatic encephalopathy	1	LGD	MCQ, SAQ
<b>105</b>	Anti-amoebic drugs	Classify anti-amoebic drugs	1	LGD	MCQs SAQ
		Describe mechanism of actions of Metronidazole & Dialoxanide Furoate			
		Enlist indications and adverse effect of Metronidazole & Dialoxanide Furoate.			
		Describe the drug interaction of Metronidazole with Alcohol.			
<b>106</b>	Anthelmintics	Classify Anti-Helminthic drugs	1	LGD	MCQs SAQ
		Enumerate clinical use(s), adverse effects and contraindications of Albendazole, Mebendazole, Pyrantal Pamoate, Ivermectin, Praziquantel & Niclosamide			
		Describe mechanism of action of Albendazole, Mebendazole, Pyrantal Pamoate, Ivermectin, Praziquantel & Niclosamide			
<b>107</b>	Anti-Salmonellosis drugs	List the drugs used in enteric fever	1	LGD	MCQs SAQ
		Describe the basis for selection of antibiotics in enteric fever based on age, pregnancy and resistance			
		Describe the clinical applications of Fluroquinolones in the treatment of gastrointestinal disorders			

<b>Theme 4: Diarrhea and Constipation (Community medicine)</b>					
<b>113</b>	Overview of common intestinal worms' infestation and their control	Describe the common intestinal worm infestation in our local context	1	LGD	MCQs SAQ
		Describe the epidemiological determinants of common worm infestation with reference to local context			
		Describe the preventive & control measures for common worm infestation			
<b>114</b>	Control of dysentery	Describe the epidemiology of Dysentery.	1	LGD	MCQs SAQ
		Describe the prevention & control measures of Dysentery.			
<b>115</b>	Food hygiene	Describe the term food Hygiene	1	LGD	MCQs SAQ
		Describe the importance of food hygiene			
		Describe the process of Food hygiene			
<b>Theme 4: Diarrhea and Constipation (Family medicine)</b>					
<b>116</b>	Enteric infections	Classify enteric infections	2	LGD	MCQs SAQ
		Describe the etiology, clinical investigations and management of Salmonellosis			
		Describe the red flags in a patient with Salmonella infections for referral to specialty care.			
		Explain the etiology, and management of acute gastroenteritis.			
		Discuss the primary and secondary prevention of acute gastroenteritis in a primary healthcare setting.			
		Describe the red-flags in a patient with acute gastroenteritis for referral to specialty care.			
<b>Theme 4: Diarrhea and Constipation (Pediatrics)</b>					
<b>117</b>	Lactase deficiency	Describe the clinical features, investigations, complications, and management of Lactase deficiency.	1	LGD	MCQs SAQ

118	Infectious diarrhea	Describe the etiology, clinical investigations, complications, and management of infectious diarrheas in children.	1	LGD	MCQs SAQ
119	Celiac disease	Describe the etiology, clinical of Celiac disease.	1	LGD	MCQs SAQ
<b><u>Theme 5: Bleeding per Rectum (Pathology)</u></b>					
120	Inflammatory bowel disease (IBD)	Classify IBD	1	LGD	MCQs SAQ
		Discuss the risk factors and etiology of IBDs			
		Explain the pathogenesis clinical presentation of IBD			
		Differentiate between Ulcerative colitis and Crohn's disease			
		Discuss the investigations and management of IBDs			
		Explain the intestinal and extra-intestinal manifestations/complications of IBDs			
		Explain the role of surveillance colonoscopy in patients with Ulcerative colitis			
121	Diverticular disease	Explain the etiology, pathogenesis, morphology and clinical features of Colonic diverticulosis	1	LGD	MCQs SAQ
122	Colonic polyps	Classify colonic polyps.	1	LGD	MCQs SAQ
		Describe the pathogenesis, morphology, clinical presentation, complications and Diagnosis of different types of colonic polyps			
123	Hemorrhoids	Define hemorrhoids	1	LGD	MCQs SAQ
		Explain the morphology, pathogenesis and clinical features of Hemorrhoids			
124	Colorectal carcinoma	Describe the adenoma carcinoma sequence	1	LGD	MCQs SAQ
		Describe the pathogenesis, morphology, clinical presentation, complications and staging of colorectal Carcinoma			

<b>Theme 5: Bleeding per Rectum ( Surgery)</b>					
<b>125</b>	Diverticular disease	Explain the etiology, pathogenesis, features, complications and management of  Diverticulosis and Diverticulitis	1	LGD	MCQs SAQ
<b>126</b>	Anal diseases:  • fistula  • fissures  • hemorrhoids	Define perianal fistula and anal fissure	1	LGD	MCQs SAQ
		Explain the risk factors and management of anal fistula and anal fissures			
		Explain the risk factors and management of hemorrhoids			
<b>127</b>	Colorectal cancers	Classify colorectal cancers	1	LGD	MCQs SAQ
		Describe the staging of colorectal cancers			
		Explain the pathogenesis, risk factors and clinical features of colorectal cancers			
		Explain the complications, management and prognosis of colorectal cancers			
<b>128</b>	Ischemic Colitis	Explain the etiology, pathogenesis, Ischemic colitis	1	LGD	MCQs SAQ
<b>Theme- 5: Bleeding per Rectum ( Medicine)</b>					
<b>129</b>	Irritable bowel syndrome	Explain the risk factors, clinical features, and management of Irritable bowel syndrome	1	LGD	MCQs SAQ
<b>130</b>	Ulcerative colitis	Explain the etiology, pathogenesis, of Crohn`s disease	1	LGD	MCQs SAQ
<b>131</b>	Crohn`s disease	Explain the etiology, pathogenesis, features, complications and management of Crohn`s disease	1	LGD	MCQs SAQ
<b>132</b>	Ano-rectal infections	Classify anorectal infections	1	LGD	MCQs SAQ

		Explain the risk factors, clinical features and management of anorectal infections including sexually transmitted infections			
<b>Theme 5: Bleeding per Rectum ( Pharmacology)</b>					
<b>133</b>	Drugs used in the treatment of Irritable Bowel Syndrome (IBS)	Enlist the drugs used in IBS	1	LGD	MCQs SAQ
		Describe the mechanism of action of antispasmodics (anticholinergics), 5-HT receptor antagonists (Alosetron) in IBS			
<b>134</b>	Drugs used in the treatment of IBD	Classify the drugs used in IBD	1	LGD	MCQs SAQ
		Describe the mechanism of actions of amino salicylates, glucocorticoids, purine analogues, methotrexate, monoclonal antibodies and anti-integrin in IBDs			
		Explain the adverse effects of drugs used in the treatment of IBD			

### PRACTICAL WORK

Subject	Topic	Learning Objectives	Learning Modalities	Practical Hours
<b>Week 1 Practical's</b>				
<b>Pathology</b>	Ascaris Lumbricoides	Identify the important morphological and staining characteristics of the ova	<b>Practical</b>	2 hour
	Enterobius vermicularis	Identify the important morphological and staining characteristics of the ova	<b>Practical</b>	2 hour
	Ankylostoma duodenale	Identify the important morphological and staining characteristics of the ova	<b>Practical</b>	2 hour
	Liver Function Tests	To interpret normal and abnormal liver function tests in different clinical scenarios	<b>Practical</b>	2 hour
<b>Pharmacology</b>	Peptic ulcer disease	Construct prescription (Quadruple therapy)	<b>Practical</b>	2 hour

	Anti-emetics	construct prescriptions morning sickness, post- operative patient	<b>Practical</b>	2 hour
		construct prescriptions for cancer chemotherapy- induced vomiting	<b>Practical</b>	2 hour
		construct a prescription for a patient suffering from amoebic dysentery	<b>Practical</b>	2 hour
	Enteric fever	construct a prescription for a patient suffering from Enteric fever	<b>Practical</b>	2 hour
		Write a prescription for a patient suffering from Ascariasis	<b>Practical</b>	2 hour
<b>Community medicine</b>	Protein calorie malnutrition	Identify the model	<b>Practical</b>	2 hour
		Differentiate between the clinical features of 2 models	<b>Practical</b>	2 hour
		Justify its public health importance	<b>Practical</b>	2 hour
		Signify the concept of food fortification and food adulteration	<b>Practical</b>	2 hour
	My food plate/ The pyramid	Identify the model	<b>Practical</b>	2 hour
		Describe different components of the model	<b>Practical</b>	2 hour
	Health education	identify a health education message on the problem/scenario provided	<b>Practical</b>	2 hour
		Formulate a health education message on the problem/scenario provided	<b>Practical</b>	2 hour
	House fly /arthropods	Identify the model	<b>Practical</b>	2 hour
		Explain the disease caused by this vector and its control	<b>Practical</b>	2 hour
	Aedes Egypti	Identify the model	<b>Practical</b>	2 hour

		Explain the disease caused by this vector and its control	<b>Practical</b>	2 hour
	Autoclave	Identify the model	<b>Practical</b>	2 hour

### TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>RESEARCH AND BIOSTATICS</b>						
Biostatistics	Intro to biostats	Describe the significance of biostat in health and epidemiology	Small group Discussion		2Hrs	MCQ
	Data and variable types	Define and classify variables				
Sampling	Sampling	Define sampling	Lecture		2 hr	MCQ
		Discuss types of sampling				
Bias	Biases in epidemiological studies	Define Bias Discuss different types of bias Discuss ,how bias can be prevented	Lecture		2 hrs	MCQ
Measures of central tendency	Measures of central tendency	Classify measures of central tendency	Small Group Discussions		2 hr	MCQ
		Calculate measures of central tendency				
		Interpret and signify the results				
		Describe the advantages and disadvantages of different measures				
Measures of dispersion	Measures of dispersion	Classify measures of dispersion	Lecture		1 hr	MCQ
		Calculate measures of dispersion				
		Interpret the results of measures of dispersion				



		Explain the advantages and disadvantages of measures of dispersion				
		Explain the use of different measures in specific circumstances				

### CLINICAL ROTATION SCHEDULE

Duration	11 weeks			11 weeks			9 weeks	5 weeks
	5wks	3wks	3wks	5wks	3wks	3wks		
Disciplines	Medicine	Medicine & Allied	Paeds	Surgery	Surgery & Allied	Gynae Obs	EYE	ENT
Total hours*	65	39	39	65	39	39	100	64

\* 2.6 Clinical rotation hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

### TEACHING HOURS ALLOCATION

S. No	Subject	Hours	Practical Hours
1	Pathology	49	8
2	Pharmacology	25	12
3	Community medicine	23	26
4	Medicine	13	-
5	Surgery	14	-
6	Pediatrics	4	-
7	Family medicine	3	-
8	Medical Education	1	-

19	Research and Biostatistics	9	-
	<b>Total hours</b>	<b>151</b>	<b>54</b>

## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

1. Student must report to examination hall/venue, in time for smooth conduction of the exams.
2. No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
3. No students will be allowed to sit in exam without College ID Card, and Lab Coat
4. Students must sit according to their roll numbers mentioned on the seats.
5. Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
6. Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
7. Students must not possess any written material or communicate with their fellow students
8. Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
9. **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### ASSESSMENT

#### **Internal: Total 10% (20 marks)**

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

#### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

### **METHODS OF ASSESSMENT**

#### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

#### **Short Essay Questions (SEQs):**

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

#### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

## ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## WEEKLY TESTS

- The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.
- The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.
- It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.
- Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

## POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD
- Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class
- PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable

## ASSESSMENT BLUEPRINT

### GIT AND HEPATOBILLIARY MODULE-III MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

## RECOMMENDED BOOKS

SUBJECT	RESOURCE S
ANATOMY	<b>TEXT BOOKS</b> 1. K.L. Moore, Clinically Oriented Anatomy

<b>COMMUNITY MEDICINE</b>	<p><b>TEXTBOOKS</b></p> <ol style="list-style-type: none"> <li>1. Community Medicine by Parikh</li> <li>2. Community Medicine by M Illyas</li> <li>3. Basic Statistics for the Health Sciences by Jan W Kuzma</li> </ol>
<b>FORENSIC MEDICINE</b>	<p><b>TEXT BOOKS</b></p> <ol style="list-style-type: none"> <li>1. Nasib R. Awan. Principles and practice of Forensic Medicine 1sted. 2002.</li> <li>2. Parikh, C.K. Parikh's Textbook of Medical Jurisprudence, Forensic Medicine and Toxicology. 7th ed.2005.</li> </ol> <p><b>REFERENCE BOOKS</b></p> <ol style="list-style-type: none"> <li>3. Knight B. Simpson's Forensic Medicine. 11th ed.1993.</li> <li>4. Knight and Pekka. Principles of forensic medicine. 3rd ed. 2004</li> <li>5. Krishan VIJ. Text book of forensic medicine and toxicology(principles and practice). 4th ed. 2007</li> <li>6. Dikshit P.C. Text book of forensic medicine and toxicology. 1sted. 2010</li> <li>7. Polson. Polson's Essential of Forensic Medicine. 4th edition.2010.</li> <li>8. Rao. Atlas of Forensic Medicine (latest edition).</li> <li>9. Rao. Practical Forensic Medicine 3rd ed ,2007.</li> <li>10. Knight: Jimpson's Forensic Medicine 10th 1991,11th ed.1993</li> <li>11. Taylor's Principles and Practice of Medical Jurisprudence. 15th ed.1999</li> </ol> <p><b>WEBSITES:</b></p> <p><a href="http://www.forensicmedicine.co.uk">www.forensicmedicine.co.uk</a></p>
<b>GENERAL MEDICINE</b>	<p><b>REFERENCE BOOKS:</b></p> <ol style="list-style-type: none"> <li>1. Hutchison's Clinical Methods, 23<sup>rd</sup> Edition</li> <li>2. MacLeod's clinical examination 13th edition</li> <li>3. Davidson's Principles and Practice of Medicine</li> <li>4. Kumar and Clark's Clinical Medicine</li> <li>5. HCAI guidelines CDC</li> </ol>
<b>PATHOLOGY/ MICROBIOLOGY</b>	<p><b>TEXTBOOKS</b></p> <ol style="list-style-type: none"> <li>1. Robbins &amp; Cotran, Pathologic Basis of Disease, 9th edition.</li> <li>2. Rapid Review Pathology, 4th edition by Edward F. Goljan MD</li> </ol>
	<p><b>WEBSITES:</b></p> <ol style="list-style-type: none"> <li>1. <a href="http://library.med.utah.edu/WebPath/webpath.html">http://library.med.utah.edu/WebPath/webpath.html</a></li> <li>2. <a href="http://www.pathologyatlas.ro/">http://www.pathologyatlas.ro/</a></li> </ol>
<b>PHARMACOLOGY</b>	<p><b>A. TEXTBOOKS</b></p> <ol style="list-style-type: none"> <li>1. Lippincott Illustrated Pharmacology</li> <li>2. Basic and Clinical Pharmacology by Katzung</li> </ol>



**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you? Y  N
- B. The course contents met with your expectations  
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned  
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with  
l. Too few examples 5. Adequate examples
- E. The level of the course was  
l. Too low 5. Too high
- F. The course contents compared with your expectations  
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices  
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?  
l. Not at all 5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand  
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used  
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate  
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful  
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes  No

F. Please give overall rating of the course

90% - 100% (    )

60% - 70% (    )

80% - 90% (    )

50% - 60% (    )

70% - 80% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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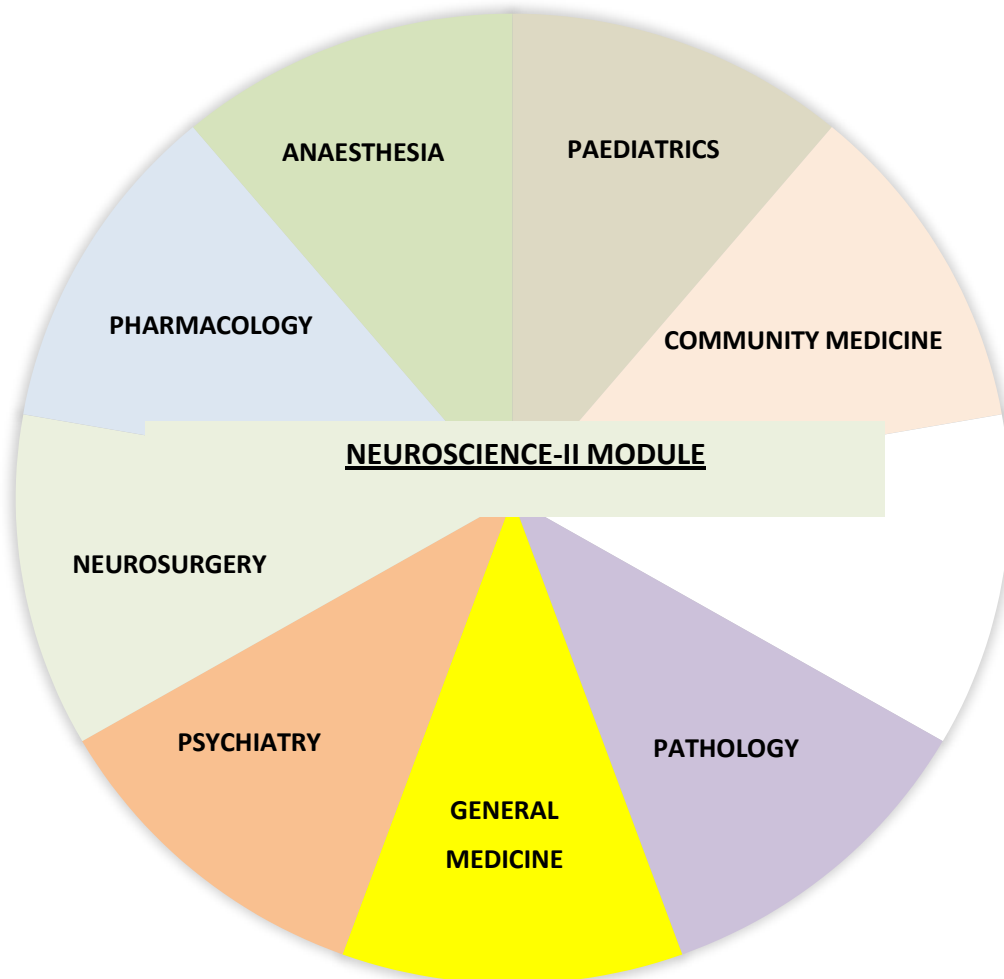
## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Eye, ENT, Endocrine and Reproduction-III, Git and Hepatobilliary-III, Neuroscience-II and Renal-II modules which link basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF NEUROSCIENCE-II MODULE

#### MODULE OVERVIEW



## NEUROSCIENCE-II MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Fourth professional
<b>Duration</b>	8 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

## NEUROSCIENCE-II MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Prof: Dr. Allah Bachayo Rajar	Community Medicine	Professor
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

### Module objectives:

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

### Achievement of objectives:

- ✚ Focuses on information pertaining to examination policy, rules and regulations.

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations
- Skills session
- Practicals
- Self-Directed Study

- **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to pathology, pharmacology and community medicine have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

Diseases of the central and peripheral nervous systems are referred to as neurological disorders. Brain stem, spinal cord, cranial nerves, peripheral nerves, nerve roots, autonomic nervous system, neuromuscular junction, and muscles are the last areas covered by the jurisdiction. The jurisdiction begins in the cerebral cortex.

Students will gain a broad grasp of the etiology of neurological and mental illnesses from this subject. Worldwide, neurological disorders are the primary cause of disability.

Approximately 15% of the world's population, or one billion individuals, are thought to suffer from a neurological illness or condition.

The WHO estimates that over 6 million individuals have strokes annually, with low- and middle-income nations accounting for more than 80% of these deaths.

Psychiatric diseases represent a significant human health burden. In Pakistan, neuropsychiatric illnesses rank among the top 12 causes of mortality and disability, according to 2012 WHO data.

Students will get a thorough grasp of the biological, pathological, psychological, and social elements underlying common diseases seen by neurologists and psychiatrists in this module. They will also learn about the etiology of these disorders.

### **RATIONALE**

The nervous system is the body's most intricate mechanism. The nervous system is either directly or indirectly engaged in the pathophysiology of a great deal of disorders, or it may be implicated in systemic illnesses. Common diseases of the nervous system include infections such as meningitis and encephalitis, congenital and traumatic disorders, movement disorders, demyelinating diseases, epilepsy, and cerebrovascular accidents. High morbidity and death are avoided by prompt diagnosis and treatment. The fundamental cycle's Neurosciences 1 module has already given students a solid foundation in the pathophysiology, neuropharmacology, anatomy, and physiology of CNS disorders. The student will study the clinical presentation, diagnosis, and treatment of various illnesses in this second clinical spiral.

## **LEARNING OBJECTIVES**

### **General learning Objectives:**

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

2. Recall functional neuro anatomy of brain and spinal cord
3. Revise embryology and histology of neuron, nerve and neuroglia
4. Enlist the investigation for diagnosing neurological disorders
5. Discuss the assessment and management of raised ICP, cerebral edema and brain herniation
6. Differentiate between anxiety and depression, manic disorders and discuss their management
7. Compare primary and secondary headache
8. Formulate a table to identify /classify drugs used for general, regional and local anesthesia
9. Describe pathophysiology, clinical classification and management of seizure disorders
10. Know the approach for assessment and management of adult as well as paed  
stroke, dementia and Parkinson disease  
Classify CNS infection and discuss the management  
Explain pathology of degenerative disorders of brain  
Recognize CP child and evaluation of mental retardation  
Classify brain tumors and evaluate management plan for it

### **Knowledge / Cognitive Domain**

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

11. Describe anxiety disorders and their management.
12. Explain the concepts of Mood disorders and their management.
13. Explain psychotic disorders and their pharmacological management.
14. Describe the pathophysiology and management of Dementias.

15. Elaborate the pathophysiology, clinical features, management, and prevention of cerebrovascular diseases.
16. Describe the types and protocols of anesthesia and explain the drugs used as anesthetics.
17. Explain the pathology and clinical features of cerebellar diseases.
18. Elaborate the clinical features and management of Parkinson`s disease.
19. Explain the clinical features and management of Motor neuron disease and Friedrich`s ataxia.
20. Describe the pathology and management of head injury.
21. Describe the pathogenesis, clinical features, and management of common CNS infections.
22. Classify brain, spinal cord, and peripheral nerves tumors, and describe their clinical features and management.
23. Explain the pathophysiology, clinical features, investigations and management of Multiple sclerosis, transverse myelitis, and Gullain Barre Syndrome.
24. Classify peripheral neuropathies and elaborate their etiologies and clinical presentations.

### **Skills / Psychomotor Domain:**

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

25. Observation and Assistance
26. Performing the skill under supervision
27. Performing the skill independently
28. Link the structure and functional abnormalities of the nervous system based on the clinical history and signs and symptoms
29. Acquire clinical skills to perform neurological examination of patient using the correct technique. (motor system, sensory system, cranial nerves, higher brain function, hearing, balance and vision)
30. Obtain a comprehensive history of patient with neurological disorders.
31. Demonstrate appropriate technique for performing nervous system and cranial nerves examination.

### **Attitude / Affective Domain:**

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

32. Respect oneself and one's peers, both when providing and receiving comments.
33. To show patients compassion and understanding.
34. Develop your ability to communicate while keeping a sense of duty to your patients.
35. Showcase appropriate laboratory procedures.
36. Relate to patient and careers vulnerability
37. Demonstrate ethical self-management
38. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
39. Display compassion with patient and colleagues
40. Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease

### **Outcomes of Neuroscience-II Module**

- A. Knowledgeable
- B. Skillful
- C. Community Health Promoter
- D. Problem-solver

- E. Professional
- F. Researcher
- G. Leader and Role Model

### THEMES FOR NEUROSCIENCE-II MODULE

SNO	Themes	Duration
1	<b>Disturbed sleep</b>	1 week
2	<b>Disturbed mood &amp; behavior</b>	1 week
3	<b>Right-sided weakness and inability to speak</b>	1 week
4	<b>Loss of consciousness and Fits</b>	1 week
5	<b>Tremors</b>	1 week
6	<b>Headache</b>	1 week
7	<b>Paraplegia</b>	1 week
8	<b>Numbness and tingling</b>	1 week

### SPECIFIC LEARNING OBJECTIVES THEME WISE

#### THEME I: DISTURBED SLEEP

S#	Subjects	Topics	Learning objectives	Contents	Hours
1.	Psychiatry	Sleep disorders	Describe the types of sleep disorders	Sleep disorders and its management	1 Hour
Explain the pharmacological and non-pharmacological management of sleep disorders					
		Describe the ways of improving healthy sleep			
		Non-organic insomnia	Define non-organic insomnia	Non-organic insomnia and its treatment	
	Explain the management of non-organic insomnia				

		Sleep wake cycle disorders	Describe the concept of sleep-wake cycle disorder	Sleep Walk and its treatment	
			Describe the pharmacological and non-pharmacological management of sleep-wake wake cycle disorder		
2.	Pharmacology	Introduction to the Pharmacology of CNS	Describe basic terms like neurotransmitters, neuromodulator/neurotropic factors, withdrawal symptoms (abstinence syndrome), cross-tolerance, reverse tolerance (sensitization) and cross-dependence	Common terminologies BBB  Neurotransmitters  Ion channels and its receptors	2 Hour
			Describe the blood-brain barrier and its clinical significance		
			Enlist the principal neurotransmitters and their receptors in the CNS		
			Describe voltage-gated, ligand-gated (ionotropic), ion channels and metabotropic receptors on the neuronal membrane		

			Classify the drugs acting on the CNS		2 Hour
		Sedative-hypnotics (Minor tranquilizers)	Classify broadly the Sedative-Hypnotics	Minor tranquilizers	
		Benzodiazepines	Classify Benzodiazepines	Benzodiazepines and its pharmacological characteristics	
			Describe the pharmacokinetics of Benzodiazepines		
			Describe the mechanism of action of Benzodiazepines		



			Describe the pharmacological effects of Benzodiazepines		
			Describe the clinical uses of Benzodiazepines		
			Describe the adverse effects of Benzodiazepines		
			Describe the tolerance and dependence on Benzodiazepines		

			Describe the drug interactions of Benzodiazepines		
			Name the antidote (competitive antagonist) to Benzodiazepines		
		Barbiturates	Classify barbiturates		
			Describe the mechanism of action and clinical uses of barbiturates		
			Describe the difference regarding the mechanism of action of Barbiturates in comparison to Benzodiazepines		
		Buspirone	Describe the mechanism of action and clinical use of Buspirone		
			Describe the merits and demerits of Buspirone in comparison to Benzodiazepines		

		Ramelteon	Describe the mechanism of action and clinical use of Ramelteon		
		CNS stimulants	Classify CNS stimulants		
		Respiratory analeptics (Doxapram, Nikethamide)	Describe the mechanism of action, clinical uses and adverse effects of Respiratory analeptics	Respiratory Aneleptics	2 Hour

		Methyl xanthine/Theophylline, Caffeine, Theobromine)	Describe the mechanism of action, clinical uses and adverse effects of Methyl xanthine	Methylxanthine	
		Sibutramine	Describe the mechanism of action and clinical use of Sibutramine	Sibutramine	
3.	Community medicine/epidemiology	Epidemiology	Define epidemiology	Definition	1 Hour
			Explain the basic concepts of epidemiology	Concept	
		Study design	Classify and elaborate study designs	Study Design	
		Screening	Explain the screening in epidemiology	Screening	
		Measures of mortality and morbidity	Explain the measures of morbidity and mortality	Measurement of mortality and morbidity	

### THEME 2: DISTURBED MOOD & BEHAVIOUR

S#	Subjects	Topics	Learning objectives	Contents	Hours
1.	Psychiatry (mood and anxiety disorders)	Depressive disorders	Classify depressive disorders	Classification	2 Hours
			Describe the aetiology, clinical features and management protocols of different depressive disorders	Aetiology C/F Management	
		Bipolar Affective Disorder	Describe the clinical features and management protocols of Bipolar affective disorders	Clinical presentation Management	
		Suicide	Describe the preventive measures of suicide	Preventive measures	
		Anxiety Disorders	Classify anxiety disorders	Classification	
			Differentiate between medical and psychiatric causes of anxiety	Differences	
			Differentiate between anxiety and phobia	Management	

			Describe the pharmacological and non-pharmacological management of different anxiety disorders including relaxation techniques and breathing exercises		
		Dissociative disorders	Explain the different behavioral and neurological presentations of dissociative disorders	Types Management	
			Describe the pharmacological and non-pharmacological management of dissociative disorders		
		Stress related disorders	Classify stress related disorders	Classification and management	
			Explain the concept of stress in stress related disorders		
			Explain the pharmacological and non-pharmacological management of stress related disorders		
		Somatoform disorders	Classify somatoform disorders	Classification Counselling of patient	
			Describe the concept of medically unexplained symptoms		
			Counsel a patient with medically unexplained symptoms		
		Atypical depression and seasonal affective disorder	Describe the clinical presentation of atypical depression	C/F Management	
			Recognize the symptoms of atypical depression		

			Describe the management of atypical depression and seasonal affective disorders		
2.	Psychiatry (Psychotic illnesses)	Personality disorders	Classify personality disorders	Classification C/F	1 Hour
			Describe the clinical features, diagnostic criteria and management of personality disorder	Diagnosis Management	
		Psychotic disorders	Differentiate between organic and non-organic psychosis	Types concept Classification s	
			Explain the concept of psychosis		
			Classify psychotic disorders		
		Schizophrenias	Describe the clinical features, diagnostic criteria and management of Schizophrenias	C/F Diagnosis Management Psychotherapy Electroconvulsive Rehabilitations strategies	
			Explain the role of psychotherapy and Electroconvulsive therapy in Schizophrenias		
			Describe the rehabilitations strategies with patients of Schizophrenias		
		Delusional disorders	Describe the types and management of delusional disorders	Management and Types	
			Describe the ways of differentiating delusional disorders from Schizophrenias		
		Substance abuse disorder	Describe the concept of drug dependence	General concept Classification Management	
			Classify of drug abuse		

			Describe the principles of management of substance abuse	Harm reduction	
			Explain the concept of harm reduction		
3.	General Medicine	Alzheimer`s disease and Dementias	Explain the pathophysiology, clinical features and management of Alzheimer`s disease	Pathophysiology C/F Management Dementia and its types	1 Hour
			Describe the reversible and irreversible causes of Dementia		
4.	Pharmacology	Depression	Describe the Monoamine hypothesis of depression	Monoamine hypothesis	2 Hours
		Antidepressants	Classify antidepressants	Classification	
		SSRIs (Selective Serotonin Reuptake Inhibitors)	Enlist SSRIs	Types	
			Enlist the most selective SSRIs	MOA Clinical uses	
			Describe the pharmacokinetics, mechanism of action, clinical uses, adverse effects and drug interactions of SSRIs	Adverse Effects	
			Classify antidepressants		
		TCAs (Tricyclic Antidepressants)	Enlist TCAs	Types MOA Clinical uses Adverse Effects	
			Describe the mechanism of action, clinical uses, adverse effects and drug interactions of TCAs		
			Enlist TCAs		
		MAOIs (Monoamine Oxidase Inhibitors)	Enlist MAOIs	Monoamine Oxidase Inhibitors	
			Describe the pharmacokinetics,		

					1 hour
			mechanism of action, clinical use, adverse effects and drug interactions of MAOIs Describe Serotonin syndrome		
			Describe Hypertensive Cheese reaction		
			Describe St John's Wort		
			Describe the procedure of switching-over from one category of antidepressant to another one		
			Describe "Augmentation" of antidepressant therapy		
			Describe Electroconvulsive Therapy (ECT) for depression		
		Psychoses (Schizophrenia and others)	Describe the Dopamine hypothesis of Schizophrenia	Dopamine hypothesis	
			Classify Antipsychotics		
		Antipsychotics (Anti-schizophrenic drugs)	Describe the advantages of Atypical antipsychotics over the Typical (Classical/Traditional/Old) agents	Antipsychotic drugs	1 Hour
			Describe the mechanism of action of Antipsychotics		
			Describe the pharmacological effects of Antipsychotics		
			Describe the clinical uses of Antipsychotics		

			Describe the drug Interactions of Antipsychotics		
			Describe the adverse effects of Antipsychotics		
			Explain the drug treatment of extrapyramidal syndrome		
		Bipolar affective disorder (Manic Depressive illness)	Describe the concept of "mood-stabilization" in Bipolar affective disorder (Manic Depressive illness)	Mood stabilization	2 Hours
		Mood-stabilizing drugs	Enlist Mood-stabilizing drugs	Types	
		Lithium carbonate	Describe the pharmacokinetics, mechanism of action, clinical uses, adverse effects and drug interactions of Lithium carbonate	Pharmacokinetics MOA Clinical uses Averse Effects	
		Alcohols	Describe alcoholism	Alcoholism and pharmacological characteristics	
			Describe the pharmacokinetics of Ethanol		
			Describe the mechanism of action of Ethanol		
			Describe the pharmacological effects of Ethanol		
			Describe the clinical uses of Ethanol		
			Describe the adverse effects of Ethanol		
			Describe Disulfiram-like reaction with example of drugs causing it		

			Describe the management of Ethanol intoxication		
			Describe the management of Ethanol withdrawal symptoms		
			Describe the treatment of alcoholism		
			Describe briefly Methanol poisoning		
		Opioids (Morphine, Diamorphine, Codeine, Pethidine, Methadone,	Differentiate between Opioids and Opiates	Types MOA Adverse Effects Pharmacological features	2 Hour
			Describe the term "narcotic"		
		Pentazocine,	Describe the source of Opium		
		Buprenorphine, Dextromethorphan)	Enlist the "brain's own Morphine" (endogenous Opioids)		
			Classify Opioids		
			Enlist Opioids with mixed agonist-antagonist properties		
			Enlist Opioids with partial agonist activity		
			Describe the pharmacokinetics, mechanism of action, pharmacological effects, clinical uses, adverse effects and drug interactions of Opioids		



			Describe the use of opioids as palliative care in terminal illness		
			Describe opioid rotation		
			Describe the treatment of Opioid over dosage		
			Describe the Opioid antagonists (antidotes)		
			Describe Opioid dependence		
			Describe the management of Opioid dependence		
			Describe the contraindications of Opioids		
			Enlist the drugs used for pain in opioid addicts		
		Tramadol	Describe the mechanism of action and clinical use of Tramadol	MOA	
		Drugs of abuse	Describe substance abuse, drug dependence, addiction and habituation	Substance abuse Drug dependence Addiction Habituation Dopamine hypothesis Types of drugsthat causes addiction	2 Hour
			Describe the Dopamine hypothesis of addiction		
			Enlist the drugs causing addiction		
			Enlist the non-addictive drugs of abuse		
			Describe "Club drugs"		
			Enlist the drugs having high-risk of addiction (scored 5 on the list of relative-risk of addiction)	Non-addictive drugs "Club drugs"	

			Enlist the drugs having moderate-risk of addiction (scored 4 on the list of relative-risk of addiction)	Nicotine, Alcohol, Cannabis Opioids Drugs used in sports.	
			Describe the drug treatment of Nicotine, Alcohol, Cannabis and Opioid abuse		
			Describe the drug abuse in sports with examples		
5.	Community medicine	Mental health	Describe classification of mental health illnesses	classification Definition Global	1 Hour
			Define mental health		
			Discuss global perspectives and epidemiology of mental health disorders	perspectives Epidemiology Risk Factors Prevention and Control	
			Discuss risk factors leading to mental health problems		
			Discuss prevention and control of mental health disorders		
6.	MEDICAL EDUCATION	Conflict resolution	Explain the prerequisites for conflict resolution as a leader	Prerequisites Skills demonstration	1 Hour
			Show the ability to solve problems regarding difficult patients/attendant.		
7.	Community medicine/biostatistics	Biostatistics: Introduction	Describe the significance of biostatistics in health and epidemiology	Significance	1 Hour
		Data and variable types	Define and classify variables	Definition and Types	
		Sampling	Define sampling Discuss types of sampling	Definition Types	
		Biases in epidemiological	Define Bias Discuss different types of biases	Definition Types	

	studies	Discuss how bias can be prevented	Prevention	
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### THEME 3: RIGHT-SIDED WEAKNESS AND INABILITY TO SPEAK

S#	Subjects	Topics	Learning objectives	Contents	Hours
1.	Pathology	Hypoxia, ischemia, and infarction	Define hypoxia, ischemia, and infarction, and describes morphology and consequences in the context of CNS involvement	Common terminologies	1 Hour
		Intracranial haemorrhage	Describe the aetiology, risk factors and morphology of intracranial haemorrhage	C/F Aetiology Risk Factors	
		Strokes syndromes	Describe the aetiology, risk factors, morphology, and clinical and radiological features of stroke		
		Subarachnoid haemorrhage (SAH)	Explain the aetiology, risk factors and clinical features of SAH		
2.	General Medicine	Stroke	Describe the risk factors of stroke	Risk Factors Types C/F, radiological findings	1 Hour
			Explain the types of strokes		
			Describe the clinical features, radiological features, and management of a patient with intracerebral bleed	Management of intracerebral bleed and infarction	
			Describe the clinical features, radiological features, and management of a patient with stroke due to an infarction		
3.	Community medicine	Non-communicable diseases: Strokes	Discuss the epidemiological determinants of stroke in community	Epidemiology	1 Hour

			Discuss the prevention and rehabilitation of strokes	Prevention Rehabilitation	
4.	Neurosurgery		Describe the neurosurgical management of stroke and Subarachnoid hemorrhage	Management	1 Hour
5.	Community medicine/biostatistics	Measures of central tendency	Classify measures of central tendency	Central tendency	1 Hour
			Calculate measures of central tendency		
			Interpret and signify the results		
			Describe the advantages and disadvantages of different measures		
		Measures of dispersion	Classify measures of dispersion	Dispersion	
			Calculate measures of dispersion		
			Interpret the results of measures of dispersion		
			Explain the advantages and disadvantages of measures of dispersion		
			Explain the use of different measures in specific circumstances		
		Normal distribution	Define normal distribution	Normal distribution curve and its significance	
			Describe normal distribution		
			Calculate and graphically represent normal distribution		
					Explain its use & significance in relation to data
Describe percentile and interquartile range					

			Calculate and depict percentile and interquartile range		
			Explain use and significance of these in different situations		
		Confidence Interval, Confidence level, Standard error	Define confidence level and interval	Confidence interval, confidence level Standard errors	1 Hour
			Describe confidence level and interval		
			Calculate confidence level and interval		
			Explain their use and significance in different situations		
		P value, critical region, rejection	Define P value, critical region, rejection region, $\alpha$ $\beta$ errors	P Value and its significance	1 Hour
		region, alpha beta errors	Describe P value, critical region, rejection region, $\alpha$ $\beta$ errors		
			Calculate P value, critical region, rejection region, $\alpha$ $\beta$ errors		
			Describe their use and significance in different situations		

#### THEME 4: LOSS OF CONSCIOUSNESS AND FITS

S#	Subjects	Topics	Learning Objectives	Contents	Hours
1.	General Medicine	Seizures	Define seizures	Definition Classification Pathophysiology C/F	1 Hour
			Differentiate between a seizure and syncope		
			Classify epilepsy		

			Explain the pathophysiology, clinical features, risk factors, investigations and treatment of Tonic-Clonic epilepsy	Investigations Risk Factors Management	
			Explain the pathophysiology, clinical features, investigations and treatment of absence seizures		
			Explain the pathophysiology, clinical features, investigations and treatment of psychomotor epilepsy		
			Explain the management of a patient with status epilepticus		
<b>2.</b>	<b>Anaesthesia</b>		Define anaesthesia	Definition	1 Hour
		Introduction to the subject	Describe different types of anaesthesia	Types	
		General anaesthesia	Describe the methods of induction of anaesthesia	Methods of induction	
		Neuroaxis block	Describe the following terms: <ul style="list-style-type: none"> <li>• Spinal block</li> <li>• Epidural block</li> <li>• Caudal block</li> </ul> Combined spinal /Epidural	Common terminologies	
		Regional anaesthesia	Describe the following terms: <ul style="list-style-type: none"> <li>• Nerve block</li> <li>• Single shot</li> <li>• Continuous infusion</li> </ul> Local infiltration		
		Preoperative evaluation and risk assessment	Explain the purpose of preoperative evaluation	Preoperative evaluation and risk assessment	
			Perform risk assessment of patient undergoing general anaesthesia		

			Describe the steps of history taking in preoperative evaluation for anaesthesia		
			Describe the plans of general and regional anaesthesia techniques		
			Describe the ASA classification for pre-operative riskassessment		
		Monitoring in anaesthesia	Describe the non-invasive and invasive techniques of patients` monitoring for the following parameters during general anaesthesia <u>Non-invasive:</u> a. Oxygenation b. Hemodynamic c. Temperature d. Electrical activity e. Neuromuscular activity f. Circulation <u>Invasive:</u>	Non-invasive and Invasive techniques	
			a. Oxygenation b. Hemodynamic c. Temperature d. Cardiac output e. Central venous pressure Circulation		
3.	Pharmacology	Anti-seizure drugs (Anti-epileptics)	Classify anti-seizure drugs Enlist the "Broad-spectrum" anti-epileptics (Valproate and Lamotrigine)	Classifications	2 Hours
		Carbamazepine	Describe the mechanism of action, clinical uses, adverse effects and drug interactions of Carbamazepine	Clinical uses MOA Adverse Effects Drugs	

		Phenytoin	Describe the pharmacokinetics of Phenytoin with reference to the phenomenon of zero-order kinetics	interactions	
			Describe the mechanism of action, clinical uses, adverse effects and drug interactions of Phenytoin		
		Valproate	Describe the mechanism of action, clinical uses, adverse effects and drug interactions of Valproate		1 hour
		Ethosuximide	Describe the mechanism of action, clinical uses and adverse effects of Ethosuximide		
		Phenobarbitone	Describe briefly the historic role of phenobarbitone in the management of epilepsy	Clinical uses	
		Benzodiazepines	Name the benzodiazepines used in the management of epilepsy		
		Lamotrigine, Topiramate and others	Name the new antiepileptic drugs	Anti-epileptic drugs and its features	
			Describe the mechanism of action, clinical uses and adverse effects of Lamotrigine and Topiramate		
			Describe the use of antiepileptics during pregnancy		
			Describe drug interaction of antiepileptics with oral contraceptive pills		
		Status epilepticus	Describe the management of status epilepticus	Management	



		General anaesthetics	Describe the stages of general anaesthesia	General anaesthetics	2 Hours
			Describe balanced anaesthesia		
		Inhaled anaesthetics (N <sub>2</sub> O, Halothane, Isoflurane, Sevoflurane, Desflurane)	Describe the pharmacokinetics of Inhaled anaesthetics	Inhaled anaesthetics	
			Discuss the clinical significance of Blood: Gas partition coefficient of Inhaled anaesthetics		
			Describe the mechanism of action of Inhaled anaesthetics		
			Define MAC <sub>50</sub> (minimum Alveolar Concentration- 50%)		
			Describe the significance of MAC <sub>50</sub>		
			Describe the pharmacological effects of Inhaled anaesthetics		
			Describe the adverse effects of Inhaled anaesthetics		2 Hours
			Describe second gas effect		
			Describe diffusion hypoxia		
			Describe Malignant hyperthermia and its management		
			Describe the properties of an ideal inhaled anaesthetics		
		IV anaesthetics (Thiopentone, Propofol, Etomidate, Ketamine, Midazolam, Fentanyl)	Describe the mechanism of action, clinical use and adverse effects of Intravenous anaesthetics	IV anaesthetics	
			Describe re-distribution of Thiopentone		
			Define neuroleptanalgesia and neuroleptanaesthesia		

			Describe dissociative anaesthesia		
			Name the anaesthetic agent that causes dissociative anaesthesia		
			Describe TIVA (Total Intravenous Anaesthesia) technique		
		Pre-anaesthetic medications	Describe Pre-anaesthetic medications	Pre-anaesthetic medications	1 hour
			Describe the drugs used as Pre-anaesthetic medications		
		Obstetric analgesia	Describe the drugs for obstetric analgesia	Obstetric analgesia	
4.	Community medicine/biostatistics	Z test & it's application, Types / shapes of frequency distribution	Define & Describe 'z' test	Z test & it's application, Types / shapes of frequency distribution	2 Hours
			Describe its use in different statistical settings		
			Calculate 'z' test		
			Explain its application in hypothesis testing		
			Interpret and apply to clinical settings		
			Discuss various shapes of frequency distribution		
			Describe the applications of parametric and non-parametric tests		

#### THEME 5: TREMORS

S#	Subjects	Topics	Los	Contents	Hours
1.	Pathology	Neurodegenerative disorders:	Describe the aetiology, risk factors, morphology and clinical features of Alzheimer's disease	Common Neurological disorders	1 Hour

		<ul style="list-style-type: none"> <li>• Alzheimer`s disease</li> <li>• Parkinson`s disease</li> <li>• Huntington`s Disease and Spinocerebellar ataxias</li> </ul> <p>Motor Neuron disease</p>	<p>Describe the ethology, risk factors, morphology and clinical features of Parkinson`s disease</p> <p>Describe the aetiology, risk factors, morphology and clinical features of Huntington`s disease</p> <p>Describe the clinical features of spinocerebellar ataxias</p>		
2.	General Medicine	Parkinson`s disease	Describe the aetiology, risk factors, morphology and clinical features of Motor Neuron Disease	Aetiology Risk factors	1 Hour
			Describe the types, clinical presentation and management of Motor neuron disease	Morphology Clinical features Types	
3.	Pharmacology	Drugs for Parkinsonism	Classify drugs for Parkinsonism	Classification	2 Hour
		Levodopa (Carbidopa)	Describe the pharmacokinetics, mechanism of action, adverse effects, contraindications and druginteractions of Levodopa	MOA Clinical uses Adverse Effects	
			Discuss the rationale of combining Carbidopa (or Benserazide) with Levodopa		
			Describe the on-off phenomenon		
			Describe the end-of-dose akinesia		

			Describe “drug holidays” for Levodopa		1 hour
		Bromocriptine	Describe the mechanism of action, clinical uses and adverse effects of Bromocriptine		
		Selegiline	Describe the mechanism of action and clinical uses of Selegiline		
			Describe the differentiating point regarding the use of Selegiline as anti parkinsonian drug and its use as antidepressant drug		
		Apomorphine	Describe the mechanism of action and clinical use of Apomorphine		
		Drug-induced Parkinsonism	Enlist the drugs causing Parkinsonism-like symptoms	Drug-induced Parkinsonism	1 hour
			Enlist the drugs used in the management of drug-induced Parkinsonism		
			Describe the rationale of avoiding Levodopa in drug-induced Parkinsonism		
4.	Paediatrics	Cerebellar ataxias	Describe the clinical features and management of Friedreich’s Ataxia	Friedreich’s Ataxia	1 Hour
5.	Community medicine/biostatistics	“t” test & its application	Define & Describe ‘t’ test	t” test & its application	1 Hour
			Explain its use in different statistical settings		
			Calculate ‘t’ test		
			Describe its application in hypothesis testing		

			Interpret and apply to clinical settings		
			Calculate degree of freedom		
		Chi square test & its application	Describe 'x <sup>2</sup> ' test	Chi square test & its application	1 Hour
			Describe its use in different statistical settings		
			Calculate 'x <sup>2</sup> ' test		
			Explain its application in hypothesis testing		
			Interpret and apply to clinical settings		
		Correlation, regression	Describe Correlation & Regression	Correlation, regression	1 Hour
			Interpret and apply to clinical settings		
		Practical Problems in biostatistics	Discuss practical problems encountered in the application of biostatistics and SPSS	Practical Problems in biostatistics	1 Hour

THEME 6: HEADACHE					
S#	Subjects	Topics	Los	Contents	Hours
1.	Pathology	Meningitis	Explain the aetiology, clinical features, investigations and complications of acute pyogenic meningitis	Aetiology C/F Investigations Managements	2 Hours
			Explain the aetiology, clinical features, investigations and complications of Tuberculous meningitis		

		Encephalitis	Explain the aetiology, clinical features, investigations and complications of viral encephalitis		
		Brain abscess	Explain the aetiology, clinical features, investigations and complications of brain abscess		
		Cerebral Toxoplasmosis	Explain the aetiology, clinical features, investigations and		
			complications of Cerebral Toxoplasmosis		
		Tumours of CNS	Describe the classification of brain tumours on the basis of primary and secondary origin and benign and malignant	Common CNS tumours	
		Gliomas	Describe the classification, gross and microscopic morphology and clinical features of Gliomas		
		Embryonalneoplasms	Describe the classification, gross and microscopic morphology and clinical features of embryonal neoplasms of brain		
		Meningioma	Describe the gross and microscopic morphology and clinical features of Meningioma		
		Other neoplasms	Enlist brain neoplasms other than gliomas, meningioma and embryonal cell neoplasms		
			Enlist the metastatic brain neoplasms		

2.	Pharmacology	Migraine and Cluster headaches	Classify drugs used for the treatment of Migraine and Cluster headaches	Classification	2 Hour
			Enlist the drugs used for the prophylaxis of Migraine and Cluster headaches		
		Triptans (Sumatriptan and others)	Describe the mechanism of action, clinical use and adverse effects of Sumatriptan	MOA, clinical uses and adverse effects	
		Ergot alkaloids	Enlist Ergot alkaloids		
			Describe the pharmacological effects of Ergot alkaloids		
Ergotamine	Describe the mechanism of action, clinical use and adverse effects of Ergotamine				
3.	General Medicine	Meningitis	Explain the aetiology, pathogenesis, clinical presentation, investigations and management of Acute pyogenic meningitis	Pyogenic Tuberculous Meningitis	1 Hour
			Explain the aetiology, pathogenesis, clinical presentation, investigations and management of Tuberculous meningitis		
4.	Community medicine	Rabies	Explain the aetiology, clinical presentation of a patient with Rabies	Aetiology C/F Prophylaxis	1 Hour
			Describe post-exposure prophylaxis of Rabies		
5.	Family medicine	Rabies prophylaxis	Describe the types of wounds inflicted by rabid dog bite	Wounds caused by rabid	1 Hour

			Explain the types of active and passive immunisation for Rabies post-exposure prophylaxis	dogs Types of immunizations	
			Describe the indications of Rabies vaccine and immunoglobulins		
6.	Paediatrics	Meningitis	Explain the aetiology, pathogenesis, clinical presentation, investigations and management of Acute pyogenic meningitis in children and neonates	Aetiology, pathogenesis, clinical presentation, investigations and management	1 Hour
		TBM	Explain the aetiology, pathogenesis, clinical presentation, investigations and management of Acute pyogenic meningitis in children		
7.	Psychiatry	Chronic daily headache	Differentiate between neurological and psychological headache (chronic tension headache)	Types C/F Management	1 Hour
			Identify the red signs in patients with headache		
			Describe the principles of management of acute and chronic headaches		
8.	RESEARCH	Data analysis	Use MS Excel for data analysis	Data analysis	1 Hour
			Use SPSS for data analysis		
			Use Endnote for reference management		
			Compile, analyze and write a dissertation		



### THEME 7: PARAPLEGIA

S#	Subjects	Topics	Learning Objectives	Contents	Hours
1.	Pathology	Multiple sclerosis and other demyelinating disorders of CNS	Explain the pathogenesis, morphology and clinical features of multiple sclerosis	Multiple Sclerosis Common pathological demyelinating disorders	1 Hour
			Describe the morphology of the following: Acute demyelinating encephalomyelitis Acute necrotizing haemorrhagic encephalitis		
2.	General Medicine	Multiple sclerosis	Explain the pathophysiology, clinical features and management of Multiple sclerosis	Pathophysiology, clinical features and management	1 Hour
		Transverse myelitis	Describe the aetiology, pathophysiology, clinical features and management of Transverse myelitis		
		Caries spine	Explain the pathophysiology, clinical features, investigations and management of Caries spine		
3.	Orthopaedics		Describe the general management of a patient with traumatic paraplegia	Management of traumatic paraplegia	1 Hour
4.	Neurosurgery		Describe the general management of a patient with traumatic paraplegia	Traumatic paraplegia Spinal Tumor	1 Hour
			Describe the types, clinical features and surgical management of spinal tumours		

### THEME 8: NUMBNESS AND TINGLING

S#	Subjects	Topics	LOS	Contents	Hours
1.	Pathology	Patterns and types of peripheral nerves injury	Describe the patterns and types of neuronal injury	Types	1 Hour
		Acute and chronic demyelinating neuropathies	Describe the pathophysiology and clinical features of Guillain Barre syndrome	Pathophysiology	

			Explain the pathophysiology of Chronic demyelinating polyneuropathies	y clinical features	
		Myasthenia Gravis	Describe the pathophysiology and clinical features of Myasthenia Gravis	Pathophysiology clinical features	
		Tumors of Peripheral nerve	Enlist the tumours of peripheral nerves	Types Neurofibromatosis	
			Describe the clinical features, of Neurofibromatosis		
2.	Pharmacology	Local anaesthetics (Lignocaine and others)	Classify Local anaesthetics	Local anaesthetics	2 Hour
			Enlist the Local anaesthetics used for surface anaesthesia		
			Enlist the Local anaesthetics used for infiltration anaesthesia, nerve block, spinal anaesthesia and epidural anaesthesia		
			Describe EMLA (Eutectic Mixture of Local Anaesthetics) and its clinical use		
			Describe the pharmacokinetics of Local anaesthetics		
			Describe the mechanism of action of Local anaesthetics		
			Describe the pharmacological effects of Local anaesthetics on nerves		
			Describe the differential blockade of peripheral nerves by Local anaesthetics		
			Describe the clinical uses of Local anaesthetics		

			Describe the major advantages of adding Adrenaline to Lignocaine for infiltration anaesthesia		
			Calculate the quantity of Adrenaline/ml in the traditionally used combinations of Adrenaline and Lignocaine (i.e. 1:200,000 & 1: 80,000)		
			Describe the adverse effects of Local anaesthetics		
			Classify Local anaesthetics		
3.	General Medicine	Guillain Barre syndrome	Explain the pathophysiology, clinical features and management of Guillain Barre syndrome	pathophysiology, clinical features and management	1 Hour
		Neuropathies	Describe the causes, types, distribution and clinical features of different neuropathies		
		Myasthenia Gravis	Explain the pathophysiology, clinical features and management of Myasthenia Gravis	Myasthenia Gravis Neurofibromatosis	
			Describe the clinical features, types and management of Neurofibromatosis		
4.	Paediatrics	Hereditary neuropathies	Describe the types, clinical features and management of hereditary neuropathies	types, clinical features and management	1 Hour
5.	Orthopaedics	Peripheral nerve injury	Describe the types and management of peripheral nerve injury	types, clinical features and management	1 Hour
			Explain entrapment neuropathies		
			Describe the risk factors, clinical features and management of Carpal tunnel syndrome		

**Practical Work**

S#	Subjects	Topics	Learning Objectives	Hours
1.	Pathology	CSF	Describe the chemical, cytological composition of CSF	2
			Estimate the following analysis of CSF: <ul style="list-style-type: none"> <li>• Chemistry</li> <li>• Cytology</li> <li>• Gram stain</li> <li>• Microbiology</li> </ul>	2
		Histopathological specimens of brain tumours	Identify the gross structure and microscopic features of: <ul style="list-style-type: none"> <li>• Meningioma</li> <li>• Glioma/Astrocytoma</li> </ul>	2
2.	Pharmacology	Depression	Formulate a prescription for a newly diagnosed case of depression	2
		Epilepsy	Formulate prescriptions for patients with Tonic-Clonic and Petit-mal epilepsy	2
		Migraine headache	Formulate prescription for a patient with migraine headache	2
3.	Community medicine	Data presentation <ul style="list-style-type: none"> <li>• pie chart</li> <li>• histogram</li> <li>• bar chart and its types</li> <li>• venn diagram</li> <li>• scatter plot</li> </ul>	Identify and interpret the charts	
		Application and Interpretation of statistical data	Apply a statistical test on a given scenario	
		Data interpretation	Interpret the normal distribution curve, skewed distribution, bi and poly-modal distribution & Standard Normal Curve	

## 9.1 CLINICAL ROTATION SCHEDULE

Duration	11 weeks			11 weeks			9 weeks	5 weeks
	5wks	3wks	3wks	5wks	3wks	3wks		
Disciplines	Medicine	Medicine & Allied	Paeds	Surgery	Surgery & Allied	Gynae Obs	EYE	ENT
Total hours*	65	39	39	65	39	39	100	64

\* 2.6 Clinical rotation hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

## TEACHING HOURS ALLOCATION

S. No	Subject	Hours (approximate)	Practical Hours
1	Pathology	24	6
2	Pharmacology	35	6
3	Community medicine	36	6
4	General medicine	12	-
5	Psychiatry	10	-
6	Paediatrics	5	-
7	Neurosurgery	2	-
8	Orthopaedics	1	-
9	Anaesthesia	4	-
10	MEDICAL EDUCATION	2	-
11	RESEARCH	16	-
12	Family medicine	1	-
<b>TOTAL</b>		<b>148</b>	<b>18</b>

## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

1. Student must report to examination hall/venue, in time for smooth conduction of the exams.
2. No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
3. No students will be allowed to sit in exam without College ID Card, and Lab Coat
4. Students must sit according to their roll numbers mentioned on the seats.
5. Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited

6. Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
7. Students must not possess any written material or communicate with their fellow students
8. Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
9. **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

## ASSESSMENT

### **Internal: Total 10% (20 marks)**

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- **NOTE: at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

## METHODS OF ASSESSMENT

### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

### 11.3.2 Short Essay Questions (SEQs):

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

### OSPE / OSCE

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

### ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### WEEKLY TESTS

- The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.
- The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.

- It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.
- Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

### POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD
- Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class
- PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable



## ASSESSMENT BLUEPRINT

### NEUROSCIENCE-II MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
			<b>Total</b>

## RECOMMENDED BOOKS

S#	Subjects	Resources
1.	<b>Community medicine</b>	<ol style="list-style-type: none"> <li>1. Preventive and Social Medicine by K Park</li> <li>2. Community Medicine by M. Ilyas</li> <li>3. Basic Statistics for the Health Sciences by Jan W Kuzma</li> <li>4. Textbook of Community Medicine and Public Health, 2018. Saira Afzal, Sabeena Jala</li> </ol>
2.	<b>Neurology</b>	<ol style="list-style-type: none"> <li>1. Davidson's Principles and Practice of Medicine</li> <li>2. Kumar and Clark's Clinical Medicine, Edited by Parveen Kumar, 9th Edition</li> </ol>
3.	<b>Neurosurgery</b>	<ol style="list-style-type: none"> <li>1. Bailey &amp; Love's Short Practice of Surgery , 26th Edition</li> </ol>
4.	<b>Pathology</b>	<ol style="list-style-type: none"> <li>1. Robbins &amp; Cotran, Pathologic Basis of Disease,9 th edition.</li> <li>2. Rapid Review Pathology,4 th edition by Edward F. Goljan MD</li> </ol>
5.	<b>Pediatrics</b>	<ol style="list-style-type: none"> <li>1. Nelson Textbook of Pediatrics, 19th Edition</li> <li>2. Textbook of Pediatrics by PPA, preface written by S. M. Haneef</li> <li>3. Clinical Pediatrics by Lakshmanaswamy Aruchamy, 3rd Edition</li> </ol>
6.	<b>Pharmacology</b>	<ol style="list-style-type: none"> <li>1. Lippincot Illustrated Pharmacology</li> <li>2. Basic and Clinical Pharmacology by Katzung</li> </ol>
7.	<b>Psychiatry</b>	<ol style="list-style-type: none"> <li>1. Oxford textbook of psychiatry by Michael G. Gelder, 2nd Edition</li> <li>2. Handbook of Behavioural Sciences, by Mowadat H. Rana</li> <li>3. Drugs used in Psychiatry, by Prof. Muhammad Iqbal Afridi</li> <li>4. Kaplan Series, Behavioural Sciences, Psychiatry</li> </ol>

F. Please give overall rating of the course

90% - 100% (    )

80% - 90% (    )

70% - 80% (    )

60% - 70% (    )

50% - 60% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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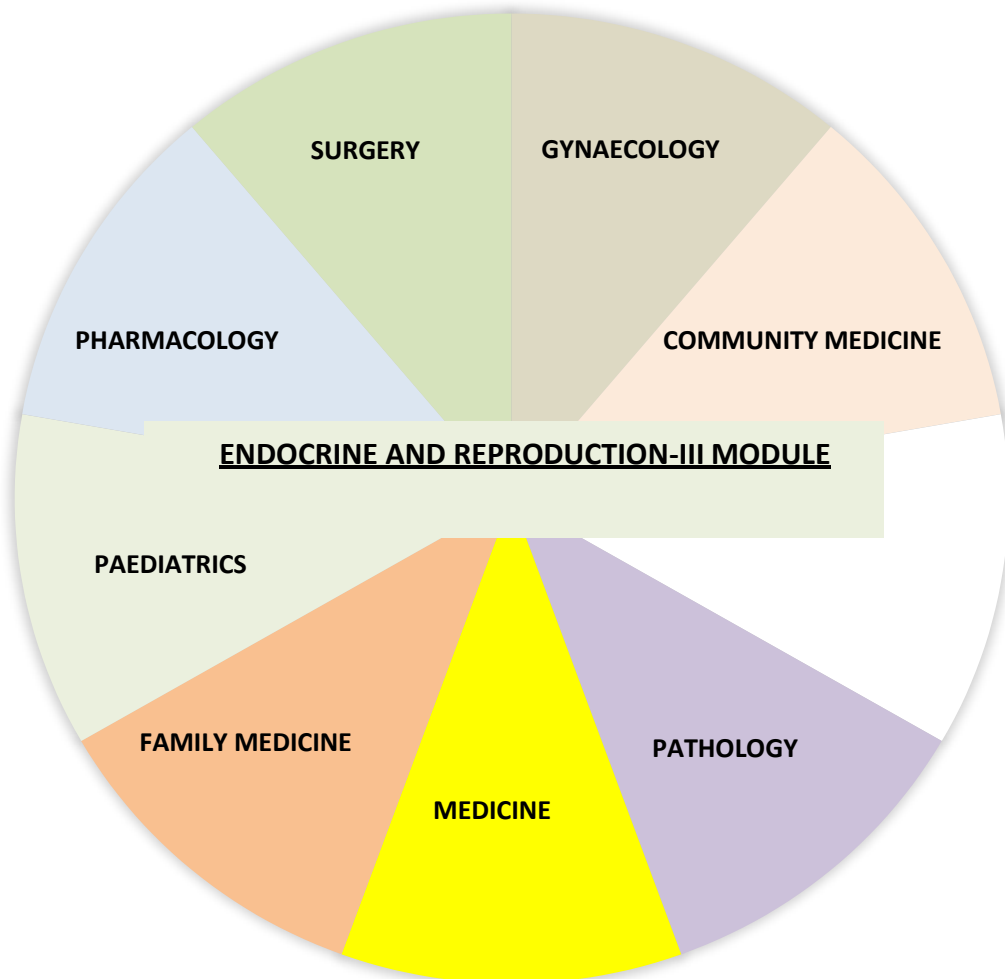
## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Eye, ENT, Endocrine and Reproduction-III, Git and Hepatobilliary-III, Neuroscience-II and Renal-II modules which link basic science knowledge to clinical problems.

### **INTEGRATING DISCIPLINES OF ENDOCRINE AND REPRODUCTION-III**

#### **MODULE**



## ENDOCRINE AND REPRODUCTION-III MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Fourth professional
<b>Duration</b>	6 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

## ENDOCRINE AND REPRODUCTION -III MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Prof: Dr. Allah Bachayo Rajar	Community Medicine	Professor
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

### Module objectives:

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

### Achievement of objectives:

Focuses on information pertaining to examination policy, rules and regulations

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations
- Skills session
- Practicals
- Self-Directed Study

- **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to pharmacology, microbiology, and community medicine have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

The body produces hormones, which are chemicals that control the function of cells or organs. The endocrine system is composed of glands that generate and secrete these chemicals. These hormones control sexual development and function, as well as the body's growth and metabolism—the body's physical and chemical

processes. Once in the bloodstream, the hormones can have an impact on one or more body organs. The hypothalamus, pituitary, thyroid, parathyroid, adrenal glands, pineal body, and reproductive organs (ovaries and testes) are the main glands that make up the endocrine system.

A state of total physical, mental, and social well-being in all aspects pertaining to the reproductive system is known as reproductive health (RH). For people to be healthy generally, reproductive health is crucial. Thus Globally, emphasis is placed mostly on women's reproductive health and overall reproductive health. Even though Pakistan's population's reproductive health status has improved, it still falls well short of the intended Sustainable Development Goal target level. Pakistan's maternal mortality ratio (MMR) stands at 178 per 100,000 live births, with the bulk of deaths coming from avoidable causes associated with pregnancy and delivery. Newborn and maternal health are intimately related. Pakistan's perinatal mortality rate is 64 per 1,000 live births, according to reports.

Common concerns pertaining to mother and child health, such as safe parenting, contraception, abortion, infant care, STDs and HIV/AIDS, and infertility, will be covered in this module. It will also cover men's RH-related problems.

### **RATIONALE**

Upon entering a medical school, a student must get orientation and an introduction to the medical sciences concerning health and illness. In order to fulfill their dreams of becoming a successful yet moral doctor in the future, students also require a set of guidelines. Pakistan's population is composed primarily of women. Diseases pertaining to the endocrine reproductive systems of men and women make up a sizable portion of medical practice worldwide. The main lessons in this module are around these illnesses as well as pregnancy and conditions connected to it. Given that obstetrics and gynecology will be covered again as a subject in the third spiral, the curriculum appropriately recognizes the importance of these topics. The first module on reproduction included the fundamentals of anatomy, physiology, biochemistry, pharmacology, and pathology. The student will get a deeper understanding of the pathology, clinical presentation, diagnosis, and treatment of reproductive and endocrine problems, as well as normal pregnancy and associated abnormalities, in this module.

### **LEARNING OBJECTIVES**

#### **General learning Objectives:**

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

1. Develop an overview of endocrine system and emphasize the close relationship with nervous and immune systems.
2. Discuss the structure, synthesis, metabolism and molecular mechanism of action of key hormones and explain mechanisms that control hormones secretion
3. Explain the structure, development and functions of the endocrine and reproductive systems.
4. Integrate the pathophysiology of endocrine and reproductive systems into their related disorders (including breast disorders related to reproductive system).
5. Identify the clinical manifestations of excess or deficiency of key hormones applying the basic knowledge in development of a plan of investigation and management.
6. Discuss the structural and functional basis of major reproductive processes and apply the knowledge gained to in the contraception counselling.
7. Explain the basis of infertility and related pathological disorders and develop an understanding of plan for investigations & management.
8. Describe epidemiology and public health importance of major health problems

related to endocrine and reproductive systems (including sexually transmitted diseases).

### **Knowledge / Cognitive Domain**

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

9. Describe the pathology, clinical features, investigations, and treatment of Hyper and hypopituitarism
10. Describe the pathology, clinical features, investigations, and treatment of Hyper and hypothyroidism, and hyper and hypoparathyroidism
11. Describe the classification, pathogenesis, clinical features, investigations, and treatment of Diabetes mellitus
12. Explain the pathology, clinical features, investigations, and treatment of Hyper and hypoadrenalism
13. Explain the causes of male and female infertility and its management
14. Explain the classification, pathology, and management of testicular tumors
15. Explain benign and malignant breast disease
16. Discuss the etiology, risk factors, clinical features, investigations, and treatment of carcinoma of breast
17. Describe the pharmacokinetics and pharmacodynamics of pituitary, gonadal, pancreatic, thyroid, and adrenocortical hormones, their synthetic analogues and antagonists, and their role in the management of relevant disease conditions
18. Formulate prescriptions for patients with Graves' disease and Diabetes mellitus
19. Discuss the laws related to sexual offenses, and management of a rape victim in forensic aspects
20. Explain the pathophysiology and surgical management of benign prostatic hyperplasia and carcinoma of the prostate

### **Skills / Psychomotor Domain:**

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

21. Observation and Assistance
22. Performing the skill under supervision
23. Performing the skill independently
24. Link the structure and functional abnormalities of the reproductive system based on the clinical history and signs and symptoms)
25. Obtain a comprehensive history of patient with endocrinological and reproductive disorders.
26. Demonstrate appropriate technique for performing thyroid gland examination.

### **Attitude / Affective Domain:**

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

27. Respect oneself and one's peers, both when providing and receiving comments.
28. To show patients compassion and understanding.
29. Develop your ability to communicate while keeping a sense of duty to your patients.
30. Showcase appropriate laboratory procedures.
31. Relate to patient and careers vulnerability
32. Demonstrate ethical self-management
38. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.



- Display compassion with patient and colleagues
  - Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease

#### Outcomes of Endocrine and Reproduction-III Module

- Knowledgeable
- Skillful
- Community Health Promoter
- Problem-solver
- Professional
- Researcher
- Leader and Role Model

#### . THEMES FOR ENDOCRINE AND REPRODUCTION-III MODULE

S.NO	Themes	Duration
1	Tall/short stature	1 week
2	Neck swelling and Muscle cramps	1 week
3	Excessive thirst and urination	1 week
4	Moon face	1 week
5	Infertility and pregnancy	1 weeks
6	Breast lump	1 week

#### SPECIFIC LEARNING OBJECTIVES THEME WISE

Theme 1: Tall / short stature			
Subject	Topic	Hours	Learning Objectives
Pathology	Pituitary gland- Physiological anatomy	1	Explain the gross and microscopic structure of pituitary gland
			Explain the functions of hormones of the anterior and posterior pituitary gland and their regulation by the Hypothalamus
	Hyperpituitarism/Pituitary adenomas: <ul style="list-style-type: none"> <li>• Prolactinomas</li> <li>• Somatotrophic tumors</li> </ul>	1	Explain the causes of hyperpituitarism
			Discuss the gross and microscopic structure of pituitary adenomas, and the hormones secreted from these

	<ul style="list-style-type: none"> <li>• Corticotrophic tumors</li> <li>• others</li> </ul>		Explain the clinical manifestations of different types of pituitary adenomas
	Hypopituitarism	1	Describe the etiology and clinical manifestations of hypopituitarism
Medicine	Acromegaly/Gigantism	2	Explain the etiology, clinical features, investigations, treatment, and complications of Acromegaly/gigantism
	Hyperprolactinemia		Discuss the etiology, clinical features, investigations, and treatment of Hyperprolactinemia
	Hypopituitarism/Sheehan's syndrome		Explain the etiology, clinical features, investigations and treatment of Hypopituitarism and Sheehan's syndrome
Pharmacology	Growth hormone	1	Describe the sources of Growth hormone (old and new sources)
			Describe the mechanism of action, clinical uses, and adverse effects of Growth hormone
	Growth hormone antagonists (Octreotide and others)		Enlist Growth hormone antagonists
	Describe the clinical role of Octreotide in acromegaly		
	Describe the route of administration, dosage, and adverse effects of octreotide in acromegaly and gigantism		
	Bromocriptine	1	Describe the mechanism of action, clinical uses, and adverse effects of Bromocriptine
Paediatrics	Short stature	1	Describe the method to measure and plot height; and calculate height velocity and midparental, target height to allow early diagnosis of growth disorders in paediatric Patients
			Explain the diagnostic criteria that allow to differentiate causes of growth deficiency
			Discuss the tools for better communication with patients and families and coordination of multidisciplinary care

			Discuss treatment of growth hormone deficiency or other diseases responsible for short stature and their appropriate management
Neurosurgery	Surgical management of pituitary adenoma	1	Explain the surgical treatment and complications of pituitary macro/microadenomas
Community medicine	Occupational Health: Introduction	1	Define occupational health
			Discuss importance of occupational health
			Describe ergonomics
			Describe principles and responsibilities of occupational health officer [OHO]
	Physical hazards	1	Enumerate physical hazards (heat, cold, noise, light, vibrations, pressure effect, Radiations)
			Discuss its ill effects on health
			Discuss its preventive measures
	Chemical hazards	1	Enumerate chemical hazards (inorganic dust diseases, organic dust diseases, metals & chemicals)
			Discuss its ill effects on health
			Discuss preventive measures
	Mechanical, Biological & Psychosomatic hazards	1	Describe mechanical hazards
			Discuss control measures of mechanical hazards
			Discuss control measures of mechanical hazards
			Discuss control measures of biological hazards
			Describe psychosomatic stressors
		Discuss control measures of psychosomatic Stressors	
Animal hazards	1	Describe types, prevalence, and statistics of snake bite	
		Discuss prevention and management of snake bite	
		Discuss causes of poor management with respect to awareness and vaccination	

	Preventive measures, health insurance, social security schemes	1	Describe various preventive measures of occupational hazards (Medical engineering and legal measure) Discuss role and benefits of health insurance Discuss social security and its benefits		
	Demography: Introduction	3	Define demography and various related terms Explain and interpret population pyramid Explain demographic transition Describe the causes of high and low fertility and mortality		
	Growth rate		Define population growth rate, CDR, CBR Describe growth rate Describe population explosion & its implications Explain advantages of population control		
	Demographic indicators		Describe the demographic indicators of Pakistan		
	MEDICAL EDUCATION		Dealing with patients	1	Serve the patient as an individual, considering lifestyle, beliefs, and support system
	Community Need analysis		Identify the health care needs of community.		

### Theme 2: Neck swelling and muscle cramps

Pathology	Hyperthyroidism including Grave`s disease	1	Discuss the etiology, pathogenesis
	Hypothyroidism	1	Discuss the etiology, pathogenesis, morphology, and clinical features of Hypothyroidism
	Thyroiditis	1	Discuss the classification, morphology, presentations of Thyroiditis
	Multinodular goitre		Explain the etiology, clinical features, and complications of multinodular goitre
	Thyroid malignancies	1	Classify thyroid malignant disorders
	Explain morphology, clinical features,		
Medicine	Hyperthyroidism including Grave`s disease	1	Discuss the etiology, clinical features, investigations and treatment and prognosis of Hyperthyroidism and Grave`s disease

			Explain the pathogenesis, clinical features, and management of Grave`s Ophthalmopathy
	Hypothyroidism	2	Discuss the types, etiology, clinical features, investigations, and treatment of Hypoparathyroidism
	Thyroiditis		Describe the classification, etiology, clinical features, investigations, and treatment of Thyroiditis
	Multinodular goitre	1	Discuss the etiology, clinical features, investigations, and management approach to a patient with multinodular goitre
	Thyroid malignancies		Classify thyroid malignant disorders
			Discuss the pathogenesis, clinical features, investigations, and management of Thyroid malignancies
	Hyperparathyroidism	1	Discuss the types, etiology, clinical features, investigations, and treatment of Hyperparathyroidism
	Hypoparathyroidism		Discuss the types, etiology, clinical features, investigations, and treatment of Hypoparathyroidism
Pharmacology	Thyroid hormones	1	Enlist thyroid preparations (used clinically as well as older-obsolete ones)
			Describe the mechanism of action, pharmacological effects, clinical use, and adverse effects of Thyroxine (T4) and Triiodothyronine (T3)
	Antithyroid drugs	2	Classify Antithyroid drugs
			Describe the mechanism of action, clinical use, and adverse effects of Thioamides
			Describe the mechanism of action, clinical use, and adverse effects of Potassium iodide
			Describe Lugol`s iodine solution
			Describe the mechanism of action, clinical use, and adverse effects of Radioactive iodine ( <sup>131</sup> I)
			Describe the use of β-blockers in hyperthyroid patients
Paediatrics	Congenital hypothyroidism	1	Discuss the types and clinical features of hypoparathyroidism
			Discuss investigations and treatment of Hypoparathyroidism

Community medicine	Iodine deficiency / Goitre	1	Discuss sources of iodine and goitrogens
			Discuss iodine deficiency disorders and daily requirement of Iodine
			Explain the epidemiological determinants and control strategies for iodine deficiency/goitre

### Theme 3: Excessive thirst and urination

Pathology	Diabetes Mellitus <ul style="list-style-type: none"> <li>• Classification</li> <li>• Diagnosis</li> <li>• Insulin resistance</li> <li>• Beta cell dysfunction</li> <li>• Complications <ul style="list-style-type: none"> <li>○ Acute</li> <li>○ Chronic</li> </ul> </li> </ul>	1	Classify Diabetes mellitus
			Explain the diagnostic criteria of DM
			Explain the mechanisms of insulin resistance
			Explain the mechanisms of beta cell dysfunction
			Explain the acute and chronic complications of DM
	Pancreatic neuroendocrinetumors	1	89 Describe the types and clinical presentations of pancreatic neuroendocrine tumors
Medicine	Diabetes mellitus <ul style="list-style-type: none"> <li>• Types</li> <li>• Insulin resistance syndromes</li> <li>• Clinical features investigations</li> <li>• Treatment</li> <li>• Complications</li> </ul>	2	Explain the different types of DM
			Discuss the mechanism presentation, and management of insulin resistance
			Discuss the clinical features of DM
			Explain the diagnostic workup of a patient with DM
			Classify the pharmacological treatment of DM
			Explain lifestyle modifications in the management of DM
		1	Discuss the acute and chronic complications of DM
	Hypoglycemic coma	1	Explain the etiology, clinical features and management of hypoglycemic coma

	Diabetic ketoacidosis	1	Explain the precipitating factors, diagnostic work up, and treatment of a patient with diabetic ketoacidosis
	Hyperosmolar non-ketotic diabetic coma		Explain the precipitating factors, diagnostic work up, and treatment of a patient with Hyperosmolar non-ketotic diabetic coma
	Lactic acidosis		Explain the precipitating factors, diagnostic work up, and treatment of a patient with Lactic acidosis
	Posterior pituitary gland	1	Discuss the functions of hormone Vasopressin secreted by the posterior pituitary gland
			Explain the etiology, clinical features, investigations, and treatment of Diabetes insipidus
	SIADH		Explain the etiology, and pathogenesis of SIADHsecretion
Pharmacology	Insulin	1	Classify Insulins
			Describe the sources of Insulin
			Describe the differences between the human, bovine and porcine Insulins
			Describe the mechanism of action and clinical uses of Insulin
			Describe the complications of Insulin therapy
			Describe the management of hypoglycemia caused by Insulin
			Describe the management of diabetic ketoacidosis
	Oral hypoglycemic drugs	2	Classify oral hypoglycemic drugs
			Enlist euglycaemic drugs
			Describe the mechanism of action and adverse effects of Sulphonylureas
			Describe the mechanism of action and clinical use of Meglitinides

			Describe the mechanism of action, clinical use, and adverse effects of Biguanides
			Describe the mechanism of action, clinical use, and adverse effects of Thiazolidinediones
			Describe the mechanism of action, clinical use, and adverse effects of $\alpha$ -glucosidase inhibitors
			Describe the mechanism of action and clinical use of Pramlintide, Exenatide and Sitagliptin
	Glucagon	1	Describe the mechanism of action and clinical use of Glucagon
	Vasopressin/Desmopressin		Describe the mechanism of action, clinical use, and adverse effects of Desmopressin
			Enlist the drugs used in nephrogenic diabetes insipidus
Paediatrics	Management of Type 1 Diabetes mellitus in children	1	Enumerate the blood glucose parameters and the clinical signs for an early diagnosis of diabetes in a child.
			Recognize how diabetes may present in young children or babies, to make the diagnosis and prevent coma or death
			Plan investigations and management plan for a newly diagnosed and a known diabetic child.
			Enumerate the different types of insulins.
Community medicine	Non-communicable diseases: Prevention of diabetes mellitus	2	Discuss Prevalence of diabetes mellitus globally and in Pakistan
			Discuss modifiable and non-modifiable risk factors for diabetes mellitus
			Describe epidemiological determinants of diabetes mellitus
			Discuss screening methods for diabetes mellitus
			Discuss the prevention (Primary, secondary, and tertiary) and care of diabetes mellitus

#### Theme 4: Moon face

Physiology	Physiology of the Adrenal cortical hormones	1	Explain the gross and microscopic structure of Adrenal gland
			Explain the synthesis and functions of hormones of the adrenal cortex and their regulation by the anterior pituitary



Pathology	Hypercortisolism and Cushing`s syndrome	1	Discuss the etiology of Hypercortisolism
			Explain the etiology and clinical features, of Cushing`s syndrome
	Hyperaldosteronism	1	Explain the etiology, and presentation of primary Hyperaldosteronism
	Adrenogenital syndrome		Explain the etiology, clinical features, of Adrenogenital syndrome
	Adrenal insufficiency <ul style="list-style-type: none"> <li>• Primary (Acute and Chronic)</li> <li>• Secondary</li> </ul>	1	Classify adrenal insufficiency in the context of its etiology
			Discuss the clinical presentations complications of adrenal insufficiency
	Adrenal neoplasms	1	Discuss the types of adrenal neoplasms
Explain the morphology, and clinical features of adrenal neoplasma			
Pheochromocytoma	1	Explain the morphology, and clinical features of Pheochromocytoma	
Multiple Endocrine Neoplasia syndromes (MEN)		Classify Multiple endocrine neoplasia syndrome	
		Explain the morphology and clinical features of MEN	
Medicine	Hypercortisolism and Cushing`s syndrome	1	Explain the etiology, clinical features, diagnostic workup, and management of Hypercortisolism/Cushing`s syndrome
	Primary Hyperaldosteronism	1	Explain the etiology, clinical features, diagnostic workup, and management of Primary Hyperaldosteronism
	Adrenogenital syndrome	1	Explain the etiology, clinical features, diagnostic workup, and management of Adrenogenital syndrome
	Adrenal insufficiency <ul style="list-style-type: none"> <li>• Primary (Acute and Chronic)</li> <li>• Secondary</li> </ul>	1	Classify adrenal insufficiency
Explain the etiology, clinical features, investigations, and treatment of primary Addison`s disease			
			Explain the etiology, clinical features, investigations, and treatment of pituitary adrenal insufficiency

	Adrenal neoplasms	1	Explain the types of adrenal tumors Discuss the clinical presentations, diagnostic workup, and treatment of adrenal tumors
	Pheochromocytoma	1	Explain the clinical features, investigations, management, and complications
	Gastro-entero-pancreatico-neuroendocrine tumors (GEP-NETs) including Carcinoid tumors		Explain the clinical features, investigations, management of GEP-NETs/Carcinoid tumors
Pharmacology	Glucocorticoids	1	Classify Glucocorticoids Describe the mechanism of action, pharmacological effects, clinical uses, and adverse effects of glucocorticoids Describe dexamethasone suppression test
	Glucocorticoid antagonists/synthesis inhibitors	1	Enlist Glucocorticoid antagonists/synthesis inhibitors Describe the mechanism of action, clinical uses and adverse effects of Mifepristone, Ketoconazole, Metyrapone and Aminoglutethimide
	Aldosterone antagonists	1	Describe the mechanism of action, clinical uses, and adverse effects of Spironolactone (apart from being used as diuretic)
Community medicine	Introduction to nutrition, basic measurements & allowances Macronutrients	8	Classify nutrients Discuss quality of nutrients in diet Discuss the balanced diet Discuss energy value of different nutrients Describe classification of macronutrients Discuss the functions and importance of various macronutrients Discuss daily allowance of macro nutrients
	Micronutrients -Vitamin deficiencies allowances & control		Discuss the diseases caused by their deficiency and excess Describe classification of micronutrients Discuss the function and importance of various vitamins Discuss daily allowances of vitamins Discuss diseases caused by their deficiency
	Micronutrients -mineral deficiencies allowances and control		Discuss the function and importance of various minerals essential for health Discuss daily allowance of minerals intake Discuss diseases caused by their deficiency

Undernutrition – Protein-calorie malnutrition and control	Define undernutrition and its classification
	Discuss protein-calorie malnutrition & its causes
Over-nutrition / obesity and its control	Describe the various classifications
	assessment of PEM
	Discuss control strategies of malnutrition
	Define obesity
	Calculate BMI
	Discuss Epidemiology of obesity.
	enumerate Causes of obesity.
	Explain the Complications of obesity
	Formulate a management plan for obesity
	Discuss Prevention of obesity

Theme 5: Infertility and pregnancy			
Pathology	Testicular tumors	1	Classify testicular tumors
			Explain the gross and microscopic morphology of benign and malignant testicular tumors
			Discuss the staging and prognosis of testicular malignant tumors
	Prostatic disorders <ul style="list-style-type: none"> <li>• Prostatitis</li> <li>• Benign prostatic hyperplasia (BPH)</li> <li>• Prostatic carcinoma</li> </ul>	2	Explain the etiology and morphology of Prostatitis
			Explain the gross and microscopic morphology and complications of BPH
			Explain the clinical features, types and staging of prostatic carcinoma
	Sexually transmitted diseases (STDs) <ul style="list-style-type: none"> <li>• Syphilis</li> <li>• Gonorrhoea</li> </ul>	1	Explain the types of STDs
			Explain the stages, morphology, clinical features, and complications of Syphilis
			Name the organisms causing Gonorrhoea and its clinical features
	Introduction to gynecological cancers	1	Enlist different types of gynecological cancers

	Cervical carcinoma		Explain the gross and microscopic morphology, clinical features and staging of Cervical carcinoma
	Endometritis	1	Explain the etiology and pathogenesis of endometritis
	Uterine fibroids		Explain the etiology and morphology of uterine fibroids
	Endometriosis		Explain the etiology, pathogenesis and morphology of endometriosis
	Endometrial hyperplasia and endometrial carcinoma	1	Explain the etiology, pathogenesis, morphology of Endometrial hyperplasia /carcinoma
	Polycystic ovarian disease	1	Explain the etiology, risk factors, clinical features, and morphology of Polycystic ovary syndrome
	Tumors of the ovary <ul style="list-style-type: none"> <li>• Benign</li> <li>• malignant</li> </ul>	1	Classify benign and malignant tumors of the ovary
	Explain the gross and microscopic morphology, clinical features, staging and complications of ovarian carcinoma		
Gynaecology	Anatomy of the reproductive tract	1	Describe the anatomy of the perineum, the vagina, cervix and uterus, the adnexa and ovary
	Menopause	1	Define Menopause.
	Describe physiological and non-physiological menopause		
			Explain the clinical effects of menopause on women
			Outline the assessment of menopausal women, based on modifiable and non-modifiable risk factors.
			Explain the management of menopause
			Describe the types, side-effects, relative and absolute contraindications of hormone replacement therapy (HRT)
	Contraception	1	Define contraception
		Classify contraceptive methods	
		Explain their mechanisms of action, efficacy, and failure rates	

			Explain the risks and benefits of each method
			Identify the complications of different contraceptive methods
	Polycystic ovary syndrome	1	Explain the risk factors, etiology, clinical features, investigations, treatment, complications, and prognosis of polycystic ovary syndrome
	Uterine fibroids		Explain the risk factors, clinical features, and management of uterine fibroids
	Endometrial cancers	1	Explain the risk factors, clinical features, investigations, prognosis, and management of endometrial carcinoma
	Cervical carcinomas		Explain the risk factors, clinical features, investigations, prognosis, and management of cervical carcinoma
	Female infertility	1	Define infertility
			Discuss the causes and management of female infertility
	Malignant diseases of the ovaries	1	Classify benign and malignant diseases of the ovaries
			Explain the clinical features, diagnosis, serological markers, staging, management and complications of ovarian carcinoma
	Uterovaginal prolapse	1	Describe the etiology, clinical features, complications, and management of Uterovaginal prolapse
	Urinary incontinence	1	Classify urinary incontinence
			Explain the etiology, clinical features, management, and prevention of urinary incontinence
	Endometriosis	1	Define endometriosis
			Explain the etiology, clinical features, investigations, and management of Endometriosis
	Abnormal uterine bleeding	1	Explain the etiology of abnormal uterine bleeding

			Describe the diagnostic approach to a patient with abnormal uterine bleeding
	Miscarriage	1	Define miscarriage
			Explain the etiology, risk factors, management, and prevention of miscarriage
	Ectopic gestation		Describe the etiology, clinical features, diagnosis, and management of ectopic gestation
	Gestational trophoblastic diseases (GTDs)	1	Classify GTDs
			Explain the etiology, clinical features, diagnosis, management, and complications of H. Mole
			Explain the etiology, clinical features, diagnosis, management, and complications of Choriocarcinoma
	Vaginal discharge and STDs	1	Explain the etiology and diagnostic workup of vaginal discharge
			Describe the risk factors, etiology, clinical features, management, prevention of STDs
Pharmacology	Gonadotropins (FSH & LH) and human chorionic gonadotropin	1	Describe the mechanism of action, clinical uses, and adverse effects of Gonadotropins (FSH & LH) and human chorionic gonadotropin (hCG)
			Describe the role of gonadotropins in male infertility
	Gonadotropin-releasing hormone and analogues (Gonadorelin and others)	1	Describe the mechanism of action, clinical uses and adverse effects of Gonadotropin-releasing hormone and analogues (Gonadorelin and others)
	Oxytocin	1	Describe the mechanism of action, clinical uses, and adverse effects of Oxytocin
	Oestrogens	1	Classify Oestrogens
			Describe the mechanism of action, organ system effects, clinical uses, adverse effects, contraindications of Oestrogens
			Describe Premarin
	Progestins	1	Classify Progestins

			Describe the mechanism of action, organ system effects, clinical uses, adverse effects,
	Oral contraceptives	2	Classify Oral contraceptives
			Describe the mechanism of action, organ system effects, clinical uses, adverse effects, contraindications of oral contraceptive pills
			Describe mini pills with their advantages and disadvantages
			Describe post-coital contraceptives
	Parenteral and implantable contraceptives	1	Describe the use of Parenteral (Medroxyprogesterone) and implantable (Norplant system) contraceptives
	Ovulation-inducing agent (Clomiphene)	1	Describe the mechanism of action, clinical use, and adverse effects of Clomiphene
	Mifepristone		Describe the mechanism of action, clinical uses, and adverse effects of Mifepristone
	Danazol		Describe the mechanism of action, clinical uses, and adverse effects of Danazol
	Androgens and anabolic steroids	1	Enlist Androgens and anabolic steroids
			Describe the mechanism of action, clinical uses, and adverse effects of androgen preparations
	Antiandrogens	1	Classify antiandrogens
			Describe the role of Ketoconazole as steroid synthesis inhibitor, its clinical uses, and adverse effects
			Describe the mechanism of action and clinical use of Finasteride
			Describe the mechanism of action and clinical use of Cyproterone acetate
			Describe the role of Spironolactone as androgen receptor blocker and its use in this context
	Male contraception		Enlist the drugs used for male contraception
			Describe the role of Gossypol as male contraceptive agent
Urology/Surgery	Causes of male infertility	1	Discuss the causes of male infertility

			Explain the diagnostic workup of a male infertile patient
Surgery	Cryptorchidism	1	Define Cryptorchidism
			Explain the etiology, complications management of Cryptorchidism
	Hydrocele and varicocele		Explain the cause, clinical features, complications and surgical management hydrocele and varicocele
	Benign prostatic hyperplasia	1	Explain the etiology, clinical features, complications, and management of BPH
	Carcinoma of prostate		Explain the etiology, clinical features, complications, staging, management, and prognosis of carcinoma of the prostate
Community medicine	Safe motherhood	1	Define reproductive health
			Describe components of reproductive health
			Define safe motherhood
			Discuss pillars of safe motherhood
	Antenatal care	1	Discuss antenatal care
			Discuss antenatal visits as per WHO
Family planning and post abortion care	1	Define family planning	
		Discuss different methods of family planning	
		Discuss contraceptive prevalence rate factors responsible for low CPR	
		Discuss Post abortion care	
		2	Define IMNCI & IMCI
	Child promotion and development strategies (IMNCI, IMCI and growth monitoring)		Describe components of IMNCI
			Enumerate principles of IMNCI
			Discuss growth monitoring
	Prevention of reproductive health diseases	1	Discuss different reproductive health diseases
			Discuss STIs in detail
			Discuss risk factors and Prevention of CA cervix
Family medicine	Menstrual disorders	1	Enlist menstrual disorders
			Explain the etiology, investigations and management of menstrual disorders in primary care
	Menopause		Explain the clinical features, and management of menopausal symptoms and complications in primary



			care
	Contraception	1	<p>Explain the types of contraception methods</p> <p>Explain the merits and demerits of different contraceptive techniques</p> <p>Describe the complications associated with the use of oral and injectable contraceptives</p>
	Vaginal discharge and STDs	1	<p>Explain the etiology of vaginal discharge</p> <p>Describe the diagnosis and management of vaginal discharge in primary care</p> <p>Classify Sexually transmitted infections females</p> <p>Describe the clinical features, investigations, and management of STDs in females in primary care</p>

Theme 6: Breast lump			
Pathology	Fibrocystic changes <ul style="list-style-type: none"> <li>• Cysts and fibrosis</li> <li>• Epithelial hyperplasia</li> <li>• Adenosis</li> </ul>	1	Explain the fibrocystic changes in breast including cysts, fibrosis, epithelial hyperplasia and adenosis
	Fibro-adenoma		Explain the morphology of Fibro-adenoma of the breast
	Papilloma		Explain the morphology of papilloma of the breast
	Carcinoma of the breast	1	Explain the risk factors, etiopathogenesis, clinical features, staging, and complications of carcinoma of the breast
	Gynecomastia		Discuss the causes and morphology of Gynecomastia
Surgery	Investigations of breast diseases	1	justify the investigations of a patient with a breast lesion
	Benign breast diseases		Classify benign breast diseases
	Malignant breast diseases	2	<p>Classify malignant breast diseases</p> <p>Discuss the risk factors, etiology, and prognosis of a patient with breast cancer</p>
			Describe the role of hormone receptors in breast

			cancer
			Explain the complications of breast cancer surgery
			Discuss the role of pharmacological treatment options in breast cancer management
			Explain the role of selective estrogen receptors modulators in the prevention of breast cancer in high-risk women
Pharmacology	Selective Estrogen Receptor Modulators (SERMs)- Tamoxifen and others	1	Enlist Selective Estrogen Receptor Modulators (SERMs)
			Describe the mechanism of action and clinical uses of Tamoxifen
Community medicine	Breast feeding	1	Discuss advantages of breast feeding
			Discuss artificial feeding
			Discuss baby friendly hospital initiative
			Discuss guidelines on infant and child feeding
	Screening and prevention of breast cancer		Discuss different methods of screening for breast cancer
			Discuss levels of prevention of breast cancer
Radiology	Radiological approaches to breast cancer screening	1	Explain the indications, procedure, interpretation of ultrasound and mammography in the investigation of breast lumps
MEDICAL EDUCATION	Counselling- Breaking bad news	1	Explain the concept of SPICES model of breaking bad news.

### Practical work

Pharmacology	Graves' disease	2	Formulate prescription for a patient with Graves' disease
	Diabetes mellitus	2	Formulate prescription for a patient with type 1 and type 2 Diabetes mellitus
Pathology	Glucose estimation	2	Check glucose in urine
			Check blood glucose in each sample
	Goitre	2	Identify the microscopic features of multinodular goitre
	Pap smear	2	Interpret a pap smear slide
	Fibroids	2	Identify the microscopic features of uterine fibroids

	Carcinoma breast	2	Identify the microscopic features of carcinoma of the breast
Community medicine	Contraception	2	Identify the contraceptive device/drug
			Explain the merits and demerits
			Discuss the method of administration of the given device/drug
	Mother and child health	2	Identify the chart
			Devise a schedule plan for antenatal visits as per WHO criteria
	EPI schedule	2	Counsel the mother for EPI schedule
	Vaccination and immunization	2	Identify the vaccine
			Explain its uses
			Discuss its schedule of administration
			Discuss the results of VVM (vaccine vial monitor) and its uses in epidemics
IMCI-anthropometric measures / Shakir`s tape	2	Identify the model	
		Measure the mid-arm circumference	
		Calculate the weight and height of the child	
		Interpret the results	
Growth chart	2	Identify the chart	
		Plot the graph using a scenario	
		Interpret different parts of the chart	
Demographic indicators	2	Interpret the given demographic indicator (population pyramid, HDI, PQLI, Growth rate and dependency ratio)	

### TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>RESEARCH AND BIOSTATICS</b>						

Normal distribution	Normal distribution	Define normal distribution Describe normal distribution Calculate and graphically represent normal distribution Explain its use & significance in relation to data Describe percentile and interquartile range Calculate and depict percentile and interquartile range Explain use and significance of these in different situations	LGF	Endocrine and Reproduction	1 hr	MCQ
Confidence Interval, Confidence level, Standard error	Confidence interval, Confidence level, standard error	Define confidence level and interval Describe confidence level and interval Calculate confidence level and interval Explain their use and significance in different situations	LGF		1 Hr	
P value, critical region, rejection region, alpha beta errors	P value, critical region, rejection region, $\alpha$ $\beta$ errors	Define P value, critical region, rejection region, $\alpha$ $\beta$ errors Describe P value, critical region, rejection region, $\alpha$ $\beta$ errors Calculate P value, critical region, rejection region, $\alpha$ $\beta$ errors Describe their use and significance in different situations	SGD		2 hrs	

Z test & its application, Types / shapes of frequency distribution	'z' test & its application in hypothesis testing, applications of parametric and non parametric tests	Define & Describe 'z' test Describe its use in different statistical settings Calculate 'z' test Explain its application in hypothesis testing Interpret and apply to clinical settings	LGF		1 hr	
T test & its application	t' test & its application in hypothesis testing, degree of freedom	Define & Describe 't' test Explain its use in different statistical settings Calculate 't' test Describe its application in hypothesis testing Interpret and apply to clinical settings Calculate degree of freedom	LGF		1 hr	
Chi square test & its application	Chi square & its application in hypothesis testing	Describe 'x2' test Describe its use in different statistical settings Calculate 'x2' test Explain its application in hypothesis testing Interpret and apply to clinical settings	LGF		2 hr	
Correlation, regression	Correlation, regression,	Describe Correlation & Regression Interpret and apply to clinical settings Know the use of Transformations for Not Normal distributions	LGF		1 Hr	

### ENDOCRINE AND REPRODUCTION MODULE - III

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>FAMILY MEDICINE</b>	Vaginal Discharge	1	Lecture
	Women's Health	Cervical and Breast Screening	1	Lecture
2.	<b>ORTHOPAEDICS &amp; TRAUMA</b>	Hemiarthroplasty of the hip	2	Skill session
		Emergency management of Poly trauma	1	Lecture
		Fixation of trochanteric and femoral neck fractures	2	Skill session

### CLINICAL ROTATION SCHEDULE

Duration	11 weeks			11 weeks			9 weeks	5 weeks
	5wks	3wks	3wks	5wks	3wks	3wks		
Disciplines	Medicine	Medicine & Allied	Paeds	Surgery	Surgery & Allied	Gynae Obs	EYE	ENT
Total hours*	65	39	39	65	39	39	100	64

\* 2.6 clinical rotation hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

### TEACHING HOURS ALLOCATION

S#	Subject	Hours (approximate)	Practical Hours
1	Pathology	44	10
2	Pharmacology	23	8
3	Medicine	19	-
4	Community medicine	30	14
5	Gynaecology	14	-
6	Surgery	05	-
7	Paediatrics	02	-
8	Urology	01	-
9	Neurosurgery	01	-
10	Family medicine	05	-
11	MEDICAL EDUCATION	2	-

12	Research	9	-
13	<b>Orthopaedics &amp; trauma</b>	5	-
	<b>TOTAL</b>	<b>160</b>	<b>32</b>

## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

- i. Student must report to examination hall/venue, in time for smooth conduction of the exams.
- ii. No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
- iii. No students will be allowed to sit in exam without College ID Card, and Lab Coat
- iv. Students must sit according to their roll numbers mentioned on the seats.
- v. Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
- vi. Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
- vii. Students must not possess any written material or communicate with their fellow students
- viii. Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
- ix. **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### ASSESSMENT

#### **Internal: Total 10% (20 marks)**

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

### **METHODS OF ASSESSMENT**

#### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

#### **Short Essay Questions (SEQs):**

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

#### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station



- It is a station where there is no task given and in this time student can organize his/her thoughts

## ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## WEEKLY TESTS

The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

- The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.
- It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.
- Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

## POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD
- Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class
- PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable

## ASSESSMENT BLUEPRINT

### ENDOCRINE AND REPRODUCTION-III MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

## RECOMMENDED BOOKS

S#	Subjects	Resources
1.	Anatomy	<b>A. GROSS ANATOMY</b> 1. K.L. Moore, Clinically Oriented Anatomy <b>B. EMBRYOLOGY</b> 1. KeithL. Moore. The Developing Human 2. Langman's Medical Embryology

2.	<b>Community Medicine</b>	<ol style="list-style-type: none"> <li>1. Community Medicine by Parikh</li> <li>2. Community Medicine by M Ilyas</li> <li>3. Basic Statistics for the Health Sciences by Jan W Kuzma</li> </ol>
3.	<b>OBGYN</b>	<ol style="list-style-type: none"> <li>1. Obstetrics by Ten Teachers, Louise C. Kenny, Jenny E. Myers</li> <li>2. Gynaecology by Ten Teachers, Louise Kenny, Helen Bickerstaff</li> <li>3. Hacker &amp; Moore's Essentials of Obstetrics and Gynecology</li> <li>4. Textbook of Gynecology, Rashid Latif Khan</li> <li>5. Fundamentals of Gynaecology, Dr Arshad Chohan</li> </ol>
4.	<b>Pathology</b>	<ol style="list-style-type: none"> <li>1. Robbins &amp; Cotran, Pathologic Basis of Disease, 9th edition.</li> <li>2. Rapid Review Pathology, 4th edition by Edward F. Goljan MD</li> </ol>
5.	<b>Physiology</b>	<ol style="list-style-type: none"> <li>1. Textbook Of Medical Physiology by Guyton And Hall</li> <li>2. Ganong's Review of Medical Physiology</li> <li>3. Human Physiology by Lauralee Sherwood</li> <li>4. Berne &amp; Levy Physiology</li> <li>5. Best &amp; Taylor Physiological Basis of Medical Practice</li> </ol>
6.	<b>Paeds</b>	Basis of Pediatrics (8th Edition Pervez Akbar)



**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you? Y  N
- B. The course contents met with your expectations  
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned  
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with  
l. Too few examples 5. Adequate examples
- E. The level of the course was  
l. Too low 5. Too high
- F. The course contents compared with your expectations  
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices  
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?  
l. Not at all 5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand  
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used  
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate  
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful  
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes  No

F. Please give overall rating of the course

90% - 100% (    )

60% - 70% (    )

80% - 90% (    )

50% - 60% (    )

70% - 80% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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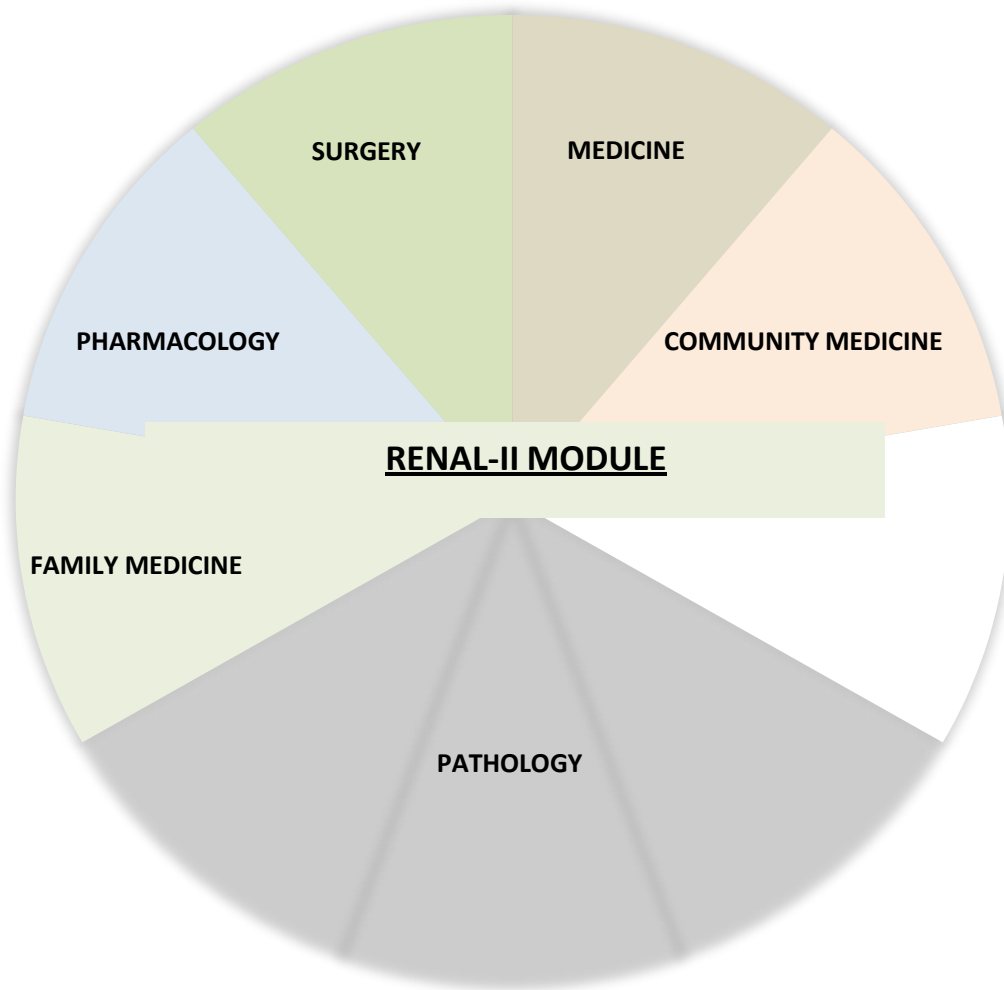
## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Eye, ENT, Endocrine and Reproduction-III, Git and Hepatobilliary-III, Neuroscience-II and Renal-II modules which link basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF RENAL-II MODULE

#### MODULE OVERVIEW



## RENAL-II MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Fourth professional
<b>Duration</b>	4 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

## RENAL-II MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Prof: Dr. Allah Bachayo Rajar	Community Medicine	Professor
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

### Module objectives:

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

### Achievement of objectives:

- Focuses on information pertaining to examination policy, rules and regulations.

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations
- Skills session



- Practicals
- Self-Directed Study

- **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practicals related to pharmacology, pathology and community medicine have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

Welcome to the Renal II module. This fascinating session will act as a foundation and is crucial to your future practice as physicians. This module includes a number of interactive tasks that are meant to make your learning engaging and fruitful. This is the second module on renal and excretory system in MBBS course. The basics of renal and excretory system including structure and function have been addressed in the first module. The module will focus on common diseases of the renal and excretory system, including infections, obstructive, genetics and acquired disorders and cancerous and non-cancerous renal and excretory diseases. The student will build upon the fundamental knowledge of anatomy, physiology, and biochemical processes acquired in the first spiral module of renal diseases in this second clinical spiral module. They will also gain an understanding of common renal diseases, renal failure, and how to manage it.

## RATIONALE

Kidney disease has an indirect impact on global morbidity and mortality by increasing the risks associated with at least five other major killers: cardiovascular diseases, diabetes, hypertension, infection with human immunodeficiency virus (HIV) and malaria. Worldwide estimated prevalence of Chronic Kidney Disease is 10.4% in men and 11.8% in women. In Pakistan common causes of CKD identified in the patients included diabetic nephropathy (28%), glomerulonephritis (22%), hypertension (14.6%), tubulo-interstitial disease (13.4%) and renal stone disease (8%). Hence this module aims to equip medical undergraduates with the essential knowledge and skills required for dealing with prevalent renal disorders in the local context.

## LEARNING OBJECTIVES

### General learning Objectives:

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

1. Understand how common kidney disorders appear clinically in the community.
2. Using the fundamentals of the history, examination, and clinical investigations, diagnose common conditions.
3. Describe the fundamentals of managing common diseases and provide the relevant referral.
4. Determine the precise diagnostic instruments for kidney illness and how to interpret them.
5. Use prognosis and preventive actions while counseling patients.

### Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

6. Describe applied anatomy of Urinary System with video demonstration
  7. Discuss physiology of the renal system
- Describe the different Acid-base Disorders and the Mechanism for maintaining Acid-base Balance
  - Classify the diseases involving glomeruli, tubules, interstitium, renal blood vessels, Chronic nephron loss, Cystic, urine out flow obstruction, congenital-developmental and neoplastic diseases of renal system

- Describe the etiology, pathogenesis, clinical manifestations, diagnosis, and prognosis of the renal system diseases.
- Perform various practical's used in laboratory diagnosis of renal diseases.
- Describe the Pharmacology of drugs used in the treatment of Renal System Diseases.
- Describe ethics of Organ Transplantation.
- Describe prevalence of renal diseases.
- Describe the clinical features of renal diseases.
- Diagnose & manage Acute & Chronic Kidney Disease, Nephrotic, Nephritic Syndromes, Urinary Tract Infections.
- Management of Urinary Tract Infections, Chronic Kidney Diseases & Renal Transplant patients during Pregnancy.
- Enumerate/Describe various renal diseases primarily effecting pediatrics age group.
- Describe pathogenesis and management of renal stones.
- Describe pathogenesis and management of bladder outlet obstruction (BOO).

#### **Skills / Psychomotor Domain:**

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

- Observation and Assistance
- Performing the skill under supervision
- Performing the skill independently
- Examine the patient with renal problems and diseases
- Bimanual palpation of kidney.
- Interpret the KUB plain and contrast xrays, renal ultrasound findings and IVP xrays

#### **Attitude / Affective Domain:**

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

- Respect oneself and one's peers, both when providing and receiving comments.
- To show patients compassion and understanding.
- Develop your ability to communicate while keeping a sense of duty to your patients.
- Showcase appropriate laboratory procedures.
- Relate to patient and caregivers vulnerability
- Demonstrate ethical self-management
- Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
- Display compassion with patient and colleagues
- Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease

#### **Outcomes of Renal-II Module**

- A. Knowledgeable
- B. Skillful
- C. Community Health Promoter
- D. Problem-solver
- E. Professional
- F. Researcher
- G. Leader and Role Model

## THEMES FOR ENT MODULE

SNO	Themes	Duration
1	Facial swelling	1 week
2	Scanty Urine	1 week
3	Loin pain and dysuria	1 week
4	Urinary retention	1 week

## SPECIFIC LEARNING OBJECTIVES THEME WISE

THEME 1: FACIAL SWELLING						
Subject	Topic	Hours	S#	Learning objectives	Teaching Method	Assessment tool
Pathology	Basic terms	1	8	Define the terms: Azotemia, uremia, Nephrotic syndrome, Nephritic syndrome, asymptomatic hematuria, rapidly	Interactive Lectures	MCQs
				progressive glomerulonephritis	Interactive Lectures	
			9	Acute kidney injury, chronic kidney disease, end-stage renal disease(ESRD),	Interactive Lectures	MCQs
			10	Renal tubular defects, Nephrosclerosis, UTI,	Interactive Lectures	MCQs
			11	urolithiasis, Hydronephrosis, Oncocytoma and carcinoma	Interactive Lectures	MCQs
			12	Describe the pathogenesis of Nephrotic and Nephritic syndrome	Interactive Lectures	MCQs
	Glomerular Disease	2	13	Describe the pathological responses, pathogenesis and mediators of glomerular injury	Interactive Lectures	MCQs
			14	Classify Glomerular diseases.	Interactive Lectures	MCQs
			15	Differentiate between major Primary Glomerular diseases in Terms of clinicopathological features and different microscopic findings	Interactive Lectures	MCQs

			16	Discuss the etiologies, clinicopathological features and morphology of the diseases presenting as Nephritic syndrome and Nephrotic syndrome	Interactive Lectures	MCQs
			17	Explain the pathogenesis and morphology of minimal change disease	Interactive Lectures	MCQs
			18	Describe the etiology, pathogenesis, morphology and clinical presentation of focal segmental glomerulosclerosis	Interactive Lectures	MCQs
			19	Describe the etiology, pathogenesis, morphology and clinical presentation of membranoproliferative glomerulonephritis	Interactive Lectures	MCQs
			20	Describe the etiology, pathogenesis, morphology and clinical presentation of IgA nephropathy	Interactive Lectures	MCQs
			21	Describe the pathogenesis, morphology of diabetic and other types of secondary nephropathies	Interactive Lectures	MCQs
	Acute Tubular Injury(ATI)	1	22	Define Acute Tubular Injury (ATI).	Interactive Lectures	MCQs
			23	Describe the etiology, clinicopathological features and morphology of ischemic and toxic ATI.	Interactive Lectures	MCQs
			24	Compare the pattern of tubular damage in ischemic and toxic injury	Interactive Lectures	MCQs
	Vascular events		25	Discuss the etiology, pathogenesis, and morphology of Nephrosclerosis, malignant hypertension and Renal Artery stenosis.	Interactive Lectures	MCQs
Medicine	Interpretation of urinalysis	1	26	explain various abnormalities and their interpretation and importance regarding specific diagnoses	Interactive Lectures	MCQs
			27	Highlight the importance of urine abnormalities in other systemic diseases apart from kidney and urogenital tract abnormalities	Interactive Lectures	MCQs

	Nephrotic syndrome	1	28	Define Nephrotic Syndrome.	Interactive Lectures	MCQs
			29	Interpret the criteria for diagnosing Nephrotic Syndrome	Interactive Lectures	MCQs
			30	Recognize symptoms and signs of Nephrotic Syndrome	Interactive Lectures	MCQs
			31	Identify the complication of nephrotic syndrome	Interactive Lectures	MCQs
			32	Interpret the important investigations	Interactive Lectures	MCQs
			33	Discuss the management plan for Nephrotic syndrome	Interactive Lectures	MCQs
	Nephritic syndrome	1	34	Interpret the criteria for diagnosing Nephritic Syndrome	Interactive Lectures	MCQs
			35	Identify symptoms and signs of Nephritic Syndrome	Interactive Lectures	MCQs
			36	Identify important causes	Interactive Lectures	MCQs
			37	Enumerate important investigations	Interactive Lectures	MCQs
			38	Discuss the treatment plan	Interactive Lectures	MCQs
	Electrolyte abnormalities	1	39	Define Hyponatremia	Interactive Lectures	MCQs
	• Hyponatremia		40	Discuss Types of Hyponatremias	Interactive Lectures	MCQs
	• Hypernatremia		41	Describe clinical features	Interactive Lectures	MCQs
	• Hypokalemia		42	Enlist/ interpret the diagnostic lab investigations	Interactive Lectures	MCQs
	• Hyperkalemia		43	Calculate the sodium deficit and free water deficit	Interactive Lectures	MCQs
			44	Calculate rate of sodium replacement	Interactive Lectures	MCQs
			45	Discuss complications	Interactive Lectures	MCQs
			46	Define Hypernatremia	Interactive Lectures	MCQs
			47	Describe clinical features	Interactive Lectures	MCQs
			48	Enlist diagnostic lab investigations	Interactive Lectures	MCQs
			49	Calculate the sodium deficit and free water deficit	Interactive Lectures	MCQs
			50	Calculate rate of fluid replacement	Interactive Lectures	MCQs

			51	Describe management plan.	Interactive Lectures	MCQs
			52	Define Hypokalaemia	Interactive Lectures	MCQs
			53	Describe clinical features	Interactive Lectures	MCQs
			54	Interpret diagnostic lab investigations	Interactive Lectures	MCQs
			55	Discuss complications.	Interactive Lectures	MCQs
			56	Describe/JUSTIFY management plan	Interactive Lectures	MCQs
			57	Define Hyperkalemia	Interactive Lectures	MCQs
			58	Describe clinical features	Interactive Lectures	MCQs
			59	Enlist diagnostic lab investigations	Interactive Lectures	MCQs
			60	Discuss complications Describe management plan	Interactive Lectures	MCQs
Pediatrics	Acute post streptococcal glomerulonephritis (ApGN)	1	61	Define AGN and APGN	Interactive Lectures	MCQs
			62	Describe the pathogenesis of Nephritic syndrome	Interactive Lectures	MCQs
			63	Know clinical features and differential diagnosis of ApGN	Interactive Lectures	MCQs
			64	Describe investigations required to reach a diagnosis of ApGN	Interactive Lectures	MCQs
			65	Effectively describe the treatment requires for patients with ApGN	Interactive Lectures	MCQs
		1	66	Define nephrotic syndrome.	Interactive Lectures	MCQs
	Nephrotic syndrome (NS)		67	Describe pathophysiology of nephrotic syndrome	Interactive Lectures	MCQs
			68	Classify NS in to its subtypes	Interactive Lectures	MCQs
			69	Describe clinical features of NS	Interactive Lectures	MCQs
			70	Enumerate and describe tests required to reach diagnosis of NS	Interactive Lectures	MCQs
			71	Outline treatment steps in the management of NS	Interactive Lectures	MCQs

			72	Know the complications of NS and describe its prognosis.	Interactive Lectures	MCQs
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## THEME 2: SCANTY URINE

Pathology	Renal function test	1	73	Describe the normal ranges of Bloodurea, creatinine, and electrolytes	Interactive Lectures	MCQs
			74	Explain creatinine clearance and other radiological and biochemical renal function tests and their clinical significance	Interactive Lectures	MCQs
	Acute kidney injury	1	75	Explain the etiology, pathogenesis, morphology and clinical presentation and complications of acute kidney injury	Interactive Lectures	MCQs
	Chronic Renal Failure	1	76	Explain the etiology, pathogenesis, morphology and clinical presentation and complications of chronic renal failure.	Interactive Lectures	MCQs
	Interstitial and Glomerulonephritis	1	77	Explain the etiology and pathogenesis of interstitial nephritis	Interactive Lectures	MCQs
78			Explain the etiology, pathogenesis, and morphology of glomerulonephritis.	Interactive Lectures	MCQs	
Medicine	Acute Kidney Injury AKI	1	79	Define AKI.	Interactive Lectures	MCQs
			80	Enlist/Interpret the criteria for diagnosing AKI	Interactive Lectures	MCQs
			81	Discuss/ Differentiate prerenal & post renal causes	Interactive Lectures	MCQs
			82	Identify symptoms and signs of AKI	Interactive Lectures	MCQs
			83	Identify /Interpret the important complications	Interactive Lectures	MCQs
			84	Enumerate/DISCUSS important investigations	Interactive Lectures	MCQs
			85	Construct a management plan for a patient with AKI	Interactive Lectures	MCQs
	Chronic Kidney Disease (CKD)	1	86	Define CKD	Interactive Lectures	MCQs
87			Enlist criteria for diagnosing CKD	Interactive Lectures	MCQs	
88			Identify important causes	Interactive Lectures	MCQs	



			89	Identify symptoms and signs of CKD	Interactive Lectures	MCQs
			90	Identify the important complications	Interactive Lectures	MCQs
			91	Enumerate important investigations Discuss the treatment plan	Interactive Lectures	MCQs
	Renal Replacement Therapy (RRT)	1	92	Define RRT	Interactive Lectures	MCQs
			93	Enlist the different types of RRT	Interactive Lectures	MCQs
			94	Identify/Enumerate important indications of dialysis	Interactive Lectures	MCQs
			95	Identify/Enlist the important complications of dialysis	Interactive Lectures	MCQs
			96	Discuss the Renal transplant	Interactive Lectures	MCQs
			97	Enlist and discuss the types of transplant rejection	Interactive Lectures	MCQs
Surgery/Ur ology	Renal transplant surgery	1	101	Enlist diagnostic indicators of renal transplant	Interactive Lectures	MCQs
			102	Describe pre-requisite for successful renal transplant	Interactive Lectures	MCQs
			103	Discuss post renal transplant care of patient	Interactive Lectures	MCQs
			104	Describe common complications of renal transplant surgery	Interactive Lectures	MCQs
			105	Enlist immunosuppressive drugs used in Renal transplant	Interactive Lectures	MCQs
Family medicine	Acute renal presentations- primary car emangement and Red flags	1	106	Explain the etiology, clinical features and presentation of acute renal failure	Interactive Lectures	MCQs
			107	Describe the steps of management of a patient with anuria and oliguria	Interactive Lectures	MCQs
			108	Identify patients that need urgent and proper referral for specialist care in primary health with anuria and acute and chronic renal disease	Interactive Lectures	MCQs
Community medicine	Environmental health: Introduction	1	109	Explain the importance of environmental health	Interactive Lectures	MCQs
			110	Define and classify environmental degradation	Interactive Lectures	MCQs
	Water pollution	1	111	Define water pollution and describe its importance for health	Interactive Lectures	MCQs

			112	Describe the different types of waterpollution as simple biodegradable, complex biodegradable and complexnon-degradable	Interactive Lectures	MCQs
	Water quality management	4	113	Explain the importance and dailyrequirements of water.	Interactive Lectures	MCQs
			114	Describe qualities and criteria of different sources of water including surface water,ground well, shallow well, deep well.	Interactive Lectures	MCQs
			115	Classify different methods ofpurification of water	Interactive Lectures	MCQs
			116	Describe natural methods ofpurification of water	Interactive Lectures	MCQs
			117	Describe physical methods.	Interactive Lectures	MCQs
			118	Describe chemical methods.	Interactive Lectures	MCQs
			119	Describe filtration methods both smallscale and large scale	Interactive Lectures	MCQs
			120	Describe purification of water in special circumstances	Interactive Lectures	MCQs
			121	Enumerate different water qualityparameters	Interactive Lectures	MCQs
			122	Describe physical parameters	Interactive Lectures	MCQs
			123	Describe different chemical parameters and its interpretation.	Interactive Lectures	MCQs
			124	Explain the permissible limits ofchemical parameters.	Interactive Lectures	MCQs

**THEME 3: LOIN PAIN AND DYSURIA**

Pathology	Pyelonephritis	1	125	Discuss the etiology, clinico-pathological presentation, morphology, and complications of Acute Pyelonephritis,	Interactive Lectures	MCQs
			126	Discuss the etiology, clinico-pathological presentation, morphology and complications of, chronic pyelonephritis	Interactive Lectures	MCQs
			127	Discuss the etiology, clinico-pathological presentation, morphology, and complications of drug induced nephritis	Interactive Lectures	MCQs
	Cystic Diseases	1	128	Classify the cystic diseases of Kidney.	Interactive Lectures	MCQs
	of the Kidney		129	Describe the inheritance, Pathological features, Complications, and prognosis of polycystic diseases of Kidneys.	Interactive Lectures	MCQs
		130	Differentiate between the inheritance, pathological features, typical outcomes and clinical features of Adult and Childhood Polycystic Kidney Diseases	Interactive Lectures	MCQs	
		131	Differentiate between the inheritance, pathological features, typical outcomes, and clinical features of Childhood Polycystic Kidney Diseases.	Interactive Lectures	MCQs	
	Urolithiasis	1	132	Enlist the types of Renal stones.	Interactive Lectures	MCQs
			133	Discuss the etiology and pathogenesis of Renal stones	Interactive Lectures	MCQs
			134	Co-relate the occurrence of renal stones with different metabolic diseases	Interactive Lectures	MCQs
			135	Differentiate between the different renal stones based on frequency, predisposing factors, urine PH and morphology.	Interactive Lectures	MCQs
	Neoplasms of the Kidneys Renal cell carcinoma	1	136	Classify the benign and malignant tumors of the Kidney.	Interactive Lectures	MCQs
			137	Discuss the etiology, morphology, and prognosis of Renal cell carcinoma	Interactive Lectures	MCQs
	Wilm's Tumor		138	Discuss the genetics, clinico-pathological features, morphology, and prognosis of Wilm's tumor	Interactive Lectures	MCQs

	Diagnosis and management of renal tumors		139	Describe the various investigations to diagnose renal tumors (albumin/creatinine ratio, urine for microalbumin)	Interactive Lectures	MCQs
			140	Discuss management of renal tumors	Interactive Lectures	MCQs
	Congenital anomalies of bladder	1	141	Describe the congenital anomalies of bladder and urethra	Interactive Lectures	MCQs
			142	Discuss the etiology, morphology, clinico-pathological features and complications of Acute	Interactive Lectures	MCQs
Chronic Cystitis	143	Discuss the etiology, morphology, clinico-pathological features and complications of Chronic Cystitis.	Interactive Lectures	MCQs		
Pharmacology	Urinary Tract Infection (UTI)	2	144	Describe the clinical pharmacology of drugs used in the management of acute and chronic UTI (Co-trimoxazole, Nitrofurantoin, Cephalosporins, Amoxicillin-clavulanic acid, etc).	Interactive Lectures	MCQs
Community Medicine	HIV/AIDS, Syphilis	1	145	Describe HIV/AIDS considering Risk groups, pathology, Diagnosis, treatment, and Prevention	Interactive Lectures	MCQs
			146	Describe Syphilis in terms of causative agent, incubation period, transmission, manifestation, diagnosis, treatment and prevention.	Interactive Lectures	MCQs

	Chlamydia, Genital warts, Gonorrhoea		147	Describe Chlamydia in terms of etiology, transmission, symptoms, treatment, and prevention.	Interactive Lectures	MCQs
			148	Describe Genital warts in terms of causes, transmission, symptoms, treatment, and prevention.	Interactive Lectures	MCQs
			149	Describe Gonorrhoea in terms of causes, transmission, symptoms, treatment, and prevention.	Interactive Lectures	MCQs
	Human Papilloma virus,	150	Describe Human Papilloma Virus (HPV) in terms of causes, types, transmission,	Interactive Lectures	MCQs	

				symptoms, screening, and prevention.		
Medicine	Autosomal Dominant Polycystic Kidney Disease (ADPKD)	1	151	Define ADPKD.	Interactive Lectures	MCQs
			152	Enlist/Interpret the criteria for diagnosing ADPKD.	Interactive Lectures	MCQs
			153	Identify/interpret the genetic causes.	Interactive Lectures	MCQs
			154	Identify/ symptoms and signs of ADPKD.	Interactive Lectures	MCQs
			155	Identify/Interpret the important complications.	Interactive Lectures	MCQs
	Urinary Tract Infections (UTIs)	1	156	Enumerate & interpret important investigations.	Interactive Lectures	MCQs
			157	Construct a management plan.	Interactive Lectures	MCQs
			158	Define UTIs.	Interactive Lectures	MCQs
			159	Enlist the criteria for diagnosing UTIs.	Interactive Lectures	MCQs
			160	Identify/Differentiate the complicated and uncomplicated UTIs.	Interactive Lectures	MCQs
			161	Identify symptoms and signs of UTIs.	Interactive Lectures	MCQs
			162	Identify the important complications.	Interactive Lectures	MCQs
			163	Enumerate/discuss/interpret/important investigations.	Interactive Lectures	MCQs
			164	Construct a management plan for a patient with UTI.	Interactive Lectures	MCQs
Radiology	Urological Investigation	1	165	Uses of plain X-ray KUB (Kidney, ureter, bladder).	Interactive Lectures	MCQs
			166	Discuss role of CT in Urology.	Interactive Lectures	MCQs
			167	Discuss role of nuclear scans.	Interactive Lectures	MCQs
			168	Discuss DTPA Scan, DMSA Scan, MAG 3 Scan.	Interactive Lectures	MCQs
			169	Investigate renal system during pregnancy.	Interactive Lectures	MCQs

Surgery/Ur ology	Kidney Stones	1	170	Enlist factors predisposing to specific stone types	Interactive Lectures	MCQs
			171	Discuss evaluation of stone formers	Interactive Lectures	MCQs
			172	Discuss clinical features andDiagnosis of renal stone	Interactive Lectures	MCQs
			173	Describe renal stone treatment options	Interactive Lectures	MCQs
	Renal trauma	1	174	Describe Initial resuscitation of renaltrauma patient	Interactive Lectures	MCQs
			175	Classify mechanism and grading of renal trauma	Interactive Lectures	MCQs
	Pelvic Ureteric junction obstruction in adult (PUJO)		176	Discuss clinical and radiological assessment of renal trauma.	Interactive Lectures	MCQs
			177	Discuss management plan of renal trauma.	Interactive Lectures	MCQs
			178	Define PUJ obstruction.	Interactive Lectures	MCQs
			179	Enlist etiology (congenital andacquired causes).	Interactive Lectures	MCQs
			180	Describe clinical presentation of PUJO.	Interactive Lectures	MCQs
			181	Interpret Investigations (renalultrasound, IVU (Intravenous urography), MAG-3 renography,retrograde pyelography).	Interactive Lectures	MCQs
			182	JUSTIFY Management PLAN options (Endopyelotomy, Pyeloplasty).	Interactive Lectures	MCQs
	Anomalies of renalfusion and ascent	1	183	Describe various anomalies of renal tracts like Horseshoe kidney, Ectopic kidney, Renal agenesis, Malrotated kidney,Urinary tract duplication.	Interactive Lectures	MCQs
			184	Describe clinical presentation andinvestigation of RCC.	Interactive Lectures	MCQs
	185		Enlist Treatment of localized RCC.	Interactive Lectures	MCQs	
	186		Construct Management of metastaticRCC.	Interactive Lectures	MCQs	
Obs &	Asymptomatic	1	187	Define asymptomatic bacteriuria.	Interactive	MCQs

Gynae	bacteriuria				Lectures	
			188	Describe the effects of asymptomatic bacteriuria on pregnancy.	Interactive Lectures	MCQs
			189	Management plan of asymptomatic bacteriuria	Interactive Lectures	MCQs
	Acute symptomatic urinary tract infections		190	Define Acute Cystitis	Interactive Lectures	MCQs
	191		Describe effects of asymptomatic bacteriuria	Interactive Lectures	MCQs	
			192	Plan management of Acute Cystitis in pregnancy	Interactive Lectures	MCQs
			193	Describe the effects of Acute Pyelonephritis on Pregnancy.	Interactive Lectures	MCQs
			194	Plan Management of acute Pyelonephritis.	Interactive Lectures	MCQs
Pediatrics	Urinary tract infection (UTI)	1	195	Describe the types of UTI.	Interactive Lectures	MCQs
			196	Discuss prevention and management of UTI in children.	Interactive Lectures	MCQs

#### THEME 4: URINARY RETENTION

Pathology	Obstructive Uropathy	1	200	Discuss the obstruction in urogenital tract at different levels.	Interactive Lectures	MCQs
			201	Discuss the effects of obstruction on function and morphology of kidney.	Interactive Lectures	MCQs
			202	Describe clinico-pathological features and morphology of Hydronephrosis	Interactive Lectures	MCQs
	Tumors of urinary bladder	1	203	Classify tumors of urinary bladder.	Interactive Lectures	MCQs
	BPH		204	Discuss the etiology, pathogenesis, morphology, staging and prognosis of urothelial (Transitional Cell) Tumors	Interactive Lectures	MCQs
			205	Describe pathophysiology of Benign prostatic hypertrophy and risk factors	Interactive Lectures	MCQs
	Carcinoma prostate		206	Describe pathogenesis, risk factors and staging.	Interactive Lectures	MCQs
Pharmacology	Drugs for benign prostatic	2	207	Classify the drugs used in the management of BPH	Interactive Lectures	MCQs

	hyperplasia	1	208	Enlist the alpha-adrenergic blocking drugs with special reference to those having specific affinity for prostate muscle.	Interactive Lectures	MCQs
			209	Describe the role of alpha blockers, 5-alpha reductase inhibitors (Finasteride) and combination therapy in BPH.	Interactive Lectures	MCQs
			210	Enlist the adverse effects of the drugs used to treat BPH.	Interactive Lectures	MCQs
	Carcinoma of prostate	1	211	Enlist the hormonal agents used in the management of Prostatic carcinoma.	Interactive Lectures	MCQs
			212	Describe the mechanism of action of Gonadotropin-releasing hormone (Goserelin) and anti-androgens (Cyproterone acetate and Flutamide) in the management of Prostatic carcinoma.	Interactive Lectures	MCQs
			213	Enlist the anticancer chemotherapeutic agents used in the management of Prostatic carcinoma.	Interactive Lectures	MCQs
Community medicine	Air Pollution & air quality management	2	214	Define air pollution.	Interactive Lectures	MCQs
			215	Enumerate criteria pollutants.	Interactive Lectures	MCQs
			216	Describe the sources and limits of air pollutants.	Interactive Lectures	MCQs
			217	Describe the adverse effects of air pollutants on health.	Interactive Lectures	MCQs
			218	Explain the measures for control of air pollution	Interactive Lectures	MCQs
			219	Describe the global adverse effects of air pollution- ozone depletion, greenhouse effect, smog, acid rain.	Interactive Lectures	MCQs
	Noise pollution, radiation pollution and its control	1	220	Define noise pollution.	Interactive Lectures	MCQs
			221	Explain adverse effects of noise pollution on health.	Interactive Lectures	MCQs
			222	Describe factors effecting hearing loss.	Interactive Lectures	MCQs



			223	Enumerate acceptable noise standards.	Interactive Lectures	MCQs
			224	Discuss the measures for prevention of adverse effects of noise.	Interactive Lectures	MCQs
			225	Classify different types of radiation to which humans are exposed.	Interactive Lectures	MCQs
			226	Describe the adverse effects and preventive measure of different type of nonionizing radiations.	Interactive Lectures	MCQs
			227	Describe the adverse effects and preventive measure of ionizing radiations.	Interactive Lectures	MCQs
	Waste management	2	228	Explain the importance of waste management in health	Interactive Lectures	MCQs
			229	Describe management of waste [organic of human and animal origin] as per water carriage system	Interactive Lectures	MCQs
			230	Describe the management of waste [organic of human and animal origin] as per conservancy system	Interactive Lectures	MCQs
			231	Describe management of solid waste [refuse]	Interactive Lectures	MCQs
		1	232	Define hospital waste management	Interactive Lectures	MCQs
	Hospital waste management		233	Explain the importance of hospital waste management in health	Interactive Lectures	MCQs
			234	Classify hospital waste	Interactive Lectures	MCQs
			235	Know the impacts of improper hospital waste management on health	Interactive Lectures	MCQs
			236	Describe the methods to minimize hospital waste	Interactive Lectures	MCQs
			237	Describe the methods of treatment of hospital waste	Interactive Lectures	MCQs
			238	Explain the waste management trends in developing countries	Interactive Lectures	MCQs
	Disasters and health	2	239	Define disaster management	Interactive Lectures	MCQs
			240	Describe classification of disasters	Interactive Lectures	MCQs

			241	Describe the mortality & morbidity due to disaster itself & mismanagement of disaster relief activities	Interactive Lectures	MCQs
			242	Describe pre-disaster management	Interactive Lectures	MCQs
			243	Describe post disaster management in immediate, intermediate, and long-term stages.	Interactive Lectures	MCQs
			244	Discuss management and preventive measures from previous disasters.	Interactive Lectures	MCQs
			245	Describe the history of disasters in Pakistan.	Interactive Lectures	MCQs
Surgery/Ur ology	carcinoma of urinary bladder	1	246	Discuss clinical Presentation of bladder cancer.	Interactive Lectures	MCQs
			247	Describe diagnosis and clinical staging of bladder cancer.	Interactive Lectures	MCQs
			248	Construct management Plan of bladder cancer.	Interactive Lectures	MCQs
	Enlarged Prostate	1	249	Define IPSS (International prostatesymptoms scoring) for enlarged prostate.	Interactive Lectures	MCQs
250			Describe watchful waiting for enlarged prostate.	Interactive Lectures	MCQs	
251			Enlist medical management of BPH.	Interactive Lectures	MCQs	
252			Minimal invasive management of BPH.	Interactive Lectures	MCQs	
253			Invasive surgical surgeries	Interactive Lectures	MCQs	
254			TURP (transurethral resection of prostate)	Interactive Lectures	MCQs	
255			Open prostatectomy	Interactive Lectures	MCQs	
	Carcinoma prostate		256	Describe clinical presentation and management	Interactive Lectures	MCQs
	Urinary Incontinence	1	257	Define urinary incontinence	Interactive Lectures	MCQs
			258	Discuss urinary incontinence	Interactive	MCQs

				Lectures	
			259	Classify urinary incontinence	Interactive Lectures MCQs
			260	Discuss nocturnal enuresis	Interactive Lectures MCQs
			261	Enlist causes and pathophysiology	Interactive Lectures MCQs
			262	Describe evaluation of incontinence	Interactive Lectures MCQs
			263	Enumerate Investigation of	Interactive Lectures MCQs
				incontinence	Interactive Lectures
			264	Describe conservative treatment options surgical options	Interactive Lectures MCQs
	Urethral strictures	1	265	Describe etiology, Presentation, investigation, and management of urethral stricture	Interactive Lectures MCQs
	Posterior urethral valve		266	Discuss clinical presentation and management of Posterior urethral valves (PUV).	Interactive Lectures MCQs

### **PRACTICAL WORK**

Pathology	Urine collection methods, physical examination of urine specimen	2	267	Demonstrate the procedure of urine collection, physical examination volume, color, appearance, pH of specimen.	Demonstration	OSPE
	Microscopic examination of centrifuge specimen		268	Perform the physical examination of urine and prepare report of an abnormal urine with pyuria and hematuria Interpret the results.	Demonstration Demonstration Demonstration Demonstration	OSPE OSPE OSPE OSPE
	Chemical examination Of non-centrifuged	2	269	Demonstrate substances for chemical examination and the different procedures of detection of protein in urine.	Demonstration Demonstration	OSPE OSPE

	urine specimen		270	Demonstrate the Principle of protein detection by heat method in urine		
			271	Perform the heat and acetic acid test and the test for Bence Jones protein. Interpret the results	Demonstration Demonstration Demonstration	OSPE OSPE OSPE
			272	Demonstrate the tests for detection of reducing substances in urine and the principle of Benedict's test	Demonstration Demonstration	OSPE OSPE
			273	Perform the Benedict's test. Interpret the results		
			274	Demonstrate the substances seen in urine under microscope i.e. cells (Pus cells, RBCs, Epithelial cells and other different cells), Crystals, casts etc		
			275	Prepare the sediment for urine examination.		
			276	Detect various substances in a slide prepared from sediment under the microscope Interpret the results.		
	Urine staining, and culture	2	277	Demonstrate the Staining methods and their principles for urine specimen of acute and chronic UTI		
			278	Identify the uropathogens shown in the slide		
			279	Demonstrate sterilized methods for collections of specimens for culture and sensitivity.		
			280	Perform a practical for culture and sensitivity by disc diffusion method for any uropathogen.		
Pharmacology	Prescriptions for acute and chronic UTI	2	281	Formulate prescriptions for acute and chronic UTI		
Community medicine	Incinerator / waste disposal models	2	282	Identify the model		
			283	Explain the steps of waste disposal		
	Water sources	2	284	Identify the model related sources of water		
	Sand filters		285	Identify the model		
			286	Identify its different layers and mechanism of purification		
			287	Calculate the dose of bleaching powder required for disinfection of water in a domestic tank		

		288	Assess the quality of water sample on the basis of physical parameters (Color, turbidity, suspended particles, temperature and Ph.)
		289	Interpret the bacteriological quality of water on the basis of presumptive coliform test

### TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
<b>RESEARCH AND BIOSTATICS</b>						
Practical Problems in biostatistics		Practical problems in biostatistics	Lecture	Renal II	2Hrs	MCQ
Data analysis	Data analysis Handson		Use of MS Excel for data analysis Use of SPSS for data analysis Use of Endnote for reference management Data compilation, analysis and dissertation writing	Renal II	2 HRS 2 HRS 4hrs  4 hrs	MCQ
Attributes	errors and mistakes in responsible manner	Accept errors and mistakes in responsible manner	Lecture Group Discussion/		2	MCQ
Attributes	Dealing with confidential information	dealing with confidential information	Group Discussion/		1	Formative, OSCE

### CLINICAL ROTATION SCHEDULE

Duration	11 weeks			11 weeks			9 weeks	5 weeks
	5wks	3wks	3wks	5wks	3wks	3wks		
Disciplines	Medicine	Medicine & Allied	Paeds	Surgery	Surgery & Allied	Gynae Obs	EYE	ENT
Total hours*	65	39	39	65	39	39	100	64

\* 2.6 Clinical rotation hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

### TEACHING HOURS ALLOCATION

S. NO	SUBJECT	In Practicals(Hours)	In class teaching(Hours)
1	Pathology	6	20
2	Pharmacology	2	8
3	Community medicine	4	20
4	Medicine	-	9
5	Family medicine	-	1
6	Surgery/urology	-	11
7	Research and Biostatistics	-	17
<b>Total</b>		12	86

### EXAMINATION AND METHODS OF ASSESSMENT

#### EXAMINATION RULES AND REGULATIONS

- i. Student must report to examination hall/venue, in time for smooth conduction of the exams.
- ii. No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
- iii. No students will be allowed to sit in exam without College ID Card, and Lab Coat
- iv. Students must sit according to their roll numbers mentioned on the seats.
- v. Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) – Sharing is prohibited
- vi. Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
- vii. Students must not possess any written material or communicate with their fellow students
- viii. Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
- ix. **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

#### ASSESSMENT

Internal: Total 10% (20 marks)

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

#### **University Annual Exam: Total 90%**

Annual Exam has 90% marks in total

It includes theory and OSPE / OSCE.

Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

### **METHODS OF ASSESSMENT**

#### **Multiple Choice Questions**

Single best type MCQs having five options with one correct answer and four distractors are part of assessment.

Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.

Time duration for MCQs will be 1 and half hour.

MCQs are used to assess objectives covered in each module.

Students after reading the statement / scenarios select one appropriate response from the given options.

Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.

Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

#### **Short Essay Questions (SEQs):**

Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.

Commonly used in examinations to assess the depth of knowledge and understanding.

Includes 10 questions each carrying 10 marks.

Time Duration for Essay type paper is 2 hours.

Questions are selected from the specific learning objectives of the specific ongoing module.

## OSPE / OSCE

Each student will be assessed on the same content and have same time to complete the task.

Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas

- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
- It is a station where there is no task given and in this time student can organize his/her thoughts

## ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## WEEKLY TESTS

The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.

It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.



Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

### POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD

Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class

PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail or Non gradable

### ASSESSMENT BLUEPRINT

#### RENAL-II MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

## RECOMMENDED BOOKS

S#	Subjects	Resources
1.	<b>Community medicine</b>	Preventive and Social Medicine by K Park Community Medicine by M. Ilyas Basic Statistics for the Health Sciences by Jan W Kuzma Textbook of Community Medicine and Public Health, 2018. Saira Afzal, Sabeena Jala
2.	<b>Medicine</b>	Davidson's Principles and Practice of Medicine Kumar and Clark's Clinical Medicine, Edited by Parveen Kumar, 9th Edition
3.	<b>Surgery</b>	Bailey & Love's Short Practice of Surgery , 26th Edition
4.	<b>Pathology</b>	Robbins & Cotran, Pathologic Basis of Disease,9 th edition. Rapid Review Pathology,4 th edition by Edward F. Goljan MD
5.	<b>Pediatrics</b>	Nelson Textbook of Pediatrics, 19th Edition Textbook of Pediatrics by PPA, preface written by S. M. Haneef Clinical Pediatrics by Lakshmanaswamy Aruchamy, 3rd Edition
6.	<b>Pharmacology</b>	Lippincot Illustrated Pharmacology Basic and Clinical Pharmacology by Katzung
7.	<b>Psychiatry</b>	Oxford textbook of psychiatry by Michael G. Gelder, 2nd Edition Handbook of Behavioural Sciences, by Mowadat H. Rana Drugs used in Psychiatry, by Prof. Muhammad Iqbal Afridi Kaplan Series, Behavioural Sciences, Psychiatry



**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you? Y  N
- B. The course contents met with your expectations  
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned  
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with  
l. Too few examples 5. Adequate examples
- E. The level of the course was  
l. Too low 5. Too high
- F. The course contents compared with your expectations  
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices  
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?  
l. Not at all 5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand  
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used  
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate  
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful  
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes  No

F. Please give overall rating of the course

90% - 100% (    )

60% - 70% (    )

80% - 90% (    )

50% - 60% (    )

70% - 80% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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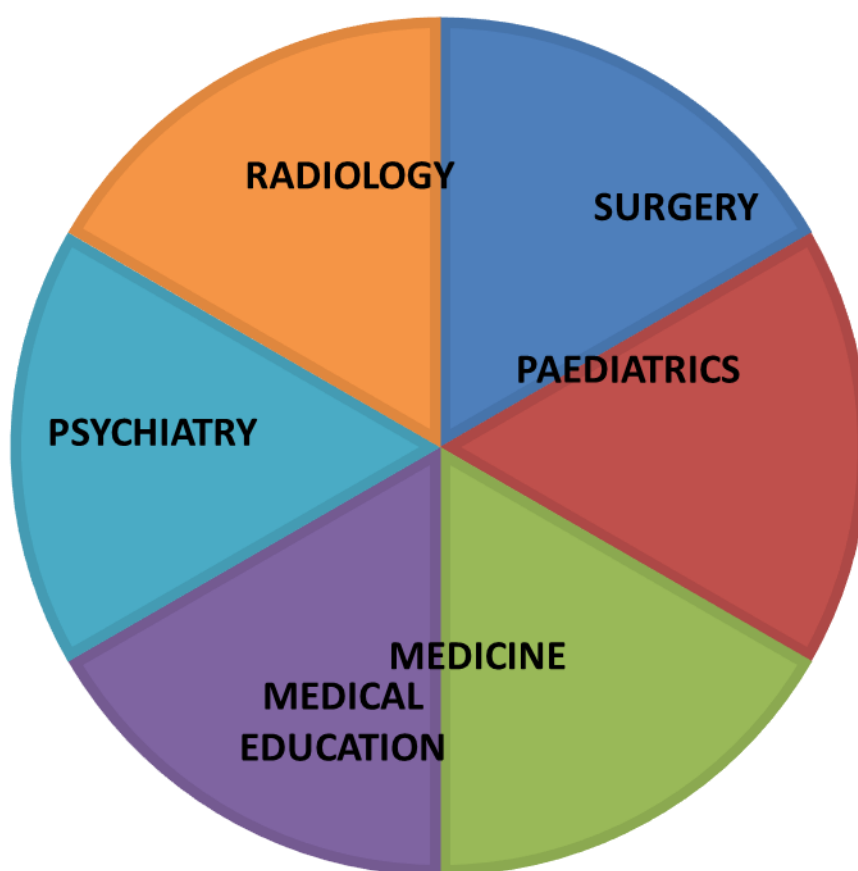


## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Foundation-II, Blood-III, Cardiorespiratory -III, Endocrine and Reproduction-IV, Renal-III, Git and Liver-IV, Multisystem, Musculoskeletal-II and Neuroscience -III modules which links basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF FOUNDATION-II MODULE



### MODULE OVERVIEW

#### FOUNDATION-II MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Final professional
<b>Duration</b>	3 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment

<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

### FOUNDATION-II MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### Module objectives:

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

#### Achievement of objectives:

- Focuses on information pertaining to examination policy, rules and regulations.

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
  - Small Group Discussion
  - Case- Based Learning (CBL)
  - Clinical Experiences
  - Clinical Rotations
  - Skills session
  - Self-Directed Study
- **INTERACTIVE LECTURES:**  
Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.
  - **SMALL GROUP DISCUSSIONS (SGDS):**  
With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to

design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

This module marks the beginning of transition to more focus on clinical learning. This module will introduce students to key concepts essential for understanding diseases process, their prevention and treatment. Students will be able to apply these key concepts in future, system-based modules to understand the diseases processes and their management. This module covers the basics and fundamental aspects of the concerned disciplines I,e surgery, medical education, paediatrics and medical education.

## LEARNING OBJECTIVES

### Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Discuss the process of Evidence-based medicine/practice.
2. Explain the concepts and processes of patient safety and types of medical errors.
3. Explain the objectives and process of clinical audit and governance.
4. Discuss the principles of communications skills, counseling, and breaking bad news.



5. Discuss the psychological aspects of patient care in hospital and ambulatory care settings.
6. Explain the concepts of surgical skills, perioperative, intraoperative, and postoperative care.
7. Discuss the concepts of palliative and end-of-life care.
8. Explain the concepts of developmental assessment in paediatrics.
9. Taking history and physical examination

**Skills / Psychomotor Domain:**

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

10. Take a detailed history from a surgical patient, relatives and others.
11. Perform a complete physical examination of a surgical patient.
12. Present a summary of the assigned case to a faculty member during a ward round
13. Take history from parents from neonatal age to pediatric age.
14. Perform physical examination in a neonate and pediatric age group patient including growth parameters.

**Attitude / Affective Domain:**

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

15. Respect oneself and one's peers, both when providing and receiving comments.
16. To show patients compassion and understanding.
17. Develop your ability to communicate while keeping a sense of duty to your patients.
18. Showcase appropriate laboratory procedures.
19. Relate to patient and caregivers vulnerability
20. Demonstrate ethical self-management
21. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
22. Display compassion with patient and colleagues
23. Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease
24. To recognize and understand emergency patient presentations.
25. To be aware of what treatment possibilities are available, including nonoperative.
26. To understand the principles of preoperative optimization.
27. To understand postoperative complications.
28. To understand the types and risks of anesthetic procedures.
29. To be able to explain in general terms to a patient the implications of a common surgical diseases.

**Outcomes of Foundation-II Module**

1. Knowledgeable
2. Skillful
3. Community Health Promoter
4. Problem-solver
5. Professional
6. Researcher
- J. Leader and Role Model

## THEMES FOR FOUNDATION-II MODULE

S.NO	Themes	Duration
1	<b>The In-Patient</b>	2 week
2	<b>Perioperative Care</b>	1 week

### SPECIFIC LEARNING OBJECTIVES THEME WISE

#### THEME-1: THE IN-PATIENT

Subject	Topic	Hours	S. No	Domain of learning	Learning objectives:
<b>Medical Education</b>	Clinical decision making (Evidence- based Medicine)	1	1	Cognitive	Define Evidence Based Medicine.
			2	Cognitive	Explain the steps of evidence-based medicine/practice
			3	Cognitive	Discuss the levels of evidence.
	Patient safety	1	4	Cognitive	Explain the concepts of patient safety.
			5	Cognitive	Discuss the types, etiology, and prevention of medical errors.
	Clinical governance and clinical audit	1	6	Cognitive	Explain the components of clinical governance.
			7	Cognitive	Explain the steps of clinical audit.
	Patient and family counselling/breaking bad news	1	8	Cognitive	Explain the steps of SPIKES model of breaking bad news and counselling.
<b>Psychiatry</b>	Family health education	1	9	Cognitive	Explain the care of a patient at home especially for chronic illnesses
			10	Cognitive	To enhance the compliance of both pharmacological and nonpharmacological management in acute and chronic illnesses
			11	Cognitive	Explain strategies to reduce follow up tertiary care visits
	Initial psychiatric assessment	1	12	Cognitive	Discuss the initial psychiatric assessment of a patient admitted.
<b>Surgery</b>	Basic surgical skills	1	13	Cognitive	Explain the principles of patient care and safety in operation theatre / surgical safety checklists
		1	14	Cognitive	Explain the principles of skin and abdominal incisions
		1	15	Cognitive	Explain the principles of wound closure and drain usage and diathermy

	Laparoscopic and robotic surgery	1	16	Cognitive	Explain the principles, advantages, disadvantages, indications, and complications of Laparoscopic and Robotic surgery.
	Surgical informed consent	1	17	Cognitive	Explain the types and components of informed consent in surgical practice.
	Nutrition and fluidtherapy	1	18	Cognitive	Assess the fluid and electrolytes requirements in pre- and post-operative patients.
		1	19	Cognitive	Explain the different methods of providing nutritional support and their complications.
	Postoperative care	1	20	Cognitive	Explain the standards of postoperative care.
		1	21	Cognitive	Discuss the general and system specific postoperative complications.
<b>Radiology</b>	Diagnostic imaging	1	22	Cognitive	Describe the basic principles of radiation protection
			23	Cognitive	Explain the types and principles of different imaging techniques and their indications.
<b>Medicine</b>	End-of-Life and palliative care	1	24	Cognitive	Discuss the steps and prerequisites of endof life and palliative care.
	Geriatric Care		25	Cognitive	Explain the concepts of geriatric care and problems associated with it.
<b>Pediatrics</b>	Pediatric history taking and physical examination	1	26	Psychomotor	Take history from parents from neonatal age to pediatric age.
			27	Psychomotor	Perform physical examination in a neonate and pediatric age group patient including growth parameters.
	Developmental assessment	1	28	Cognitive	Perform development assessment of a child
			29	Cognitive	Explain the components of developmental assessment in children of different age groups

## THEME-2: PERIOPERATIVE CARE

Subject	Topic	Hours	S. No	Domain of learning	Learning objectives:
Surgery	Enhanced Recovery after Surgery (ERAS)	1	30	Cognitive	Describe the ERAS protocol
			31	Cognitive	Discuss the components of ERAS protocol
			32	Cognitive	Explain the benefits of ERAS
	Pain Management	2	33	Cognitive	Evaluate a patient with postoperative pain
			34	Cognitive	Manage a patient with pain during perioperative phase
			35	Cognitive	Discuss the pathophysiological consequences of postoperative pain
Medicine	Preoperative evaluation and fitness for anesthesia and surgery	1	36	Cognitive	Evaluate a patient for fitness for surgery and anesthesia.

## CLINICAL SCIENCES SUBJECTS

### FOUNDATION – II MODULE

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>ANAESTHESIA</b>  Perioperative Anesthetic management of Patient	Reviewing the history and conducting an assessment of the patient prior to surgery	1	Lectures
		Understanding the patient's medical and surgical condition	1	Lectures
		Understanding the medications used to prepare the patient for surgery	2	Lectures
		Independent study of topics related to airway management, pharmacology, medical and surgical conditions related to the case to be discussed with faculty the day of Surgery		Skill Session
2.	<b>CRITICAL CARE</b>  Surgical Problems in ICU	Management of Post-operative Cardiac Surgical Patient	1	Lectures
		Intra-abdominal sepsis	1	Lectures
		Management of critically ill abdominal trauma patient	1	Lectures
		Resuscitation from shock following trauma	1	Lecture
		Hypo and Hyperthermia in ICU		

3.	ORTHOPAEDICS & TRAUMA	Treatment in skeletally immature (Pediatric fractures)	1	Lectures
			1	Lectures
	Orthopaedic Management	Treatment in osteoporotic fracture	1	Lectures
		Treatment in pathological fractures	1	Lectures
		Management of compartment syndrome		

### CLINICAL ROTATION SCHEDULE

#### MORNING CLINICAL ROTATIONS

Duration	9 weeks		11 weeks		8 weeks	8 weeks
	6 weeks	3wks	8 weeks	3 weeks		
Disciplines	Medicine	Medicine & Allied	Surgery	Surgery & Allied	Gynae/Obs	Paeds
Total hours*	78	39	104	39	104	104

\* 2.6 clinical teaching hours per day

#### EVENING CLINICAL ROTATIONS

Duration	6 weeks		14 weeks		8 weeks	8 weeks
	3 weeks	3wks	11 weeks	3 weeks		
Disciplines	Medicine	Medicine & Allied	Surgery	Surgery & Allied	Gynae/Obs	Paeds
Total hours*	45	45	165	45	120	120

\* 3 clinical teaching hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

### TEACHING HOURS ALLOCATION

There will be 35 hours allotted in total. The hours shall be divided into 2 different themes. The necessity for students to set aside more time for self-directed learning and clinical learning is emphasized, although at the expense of repetition. We anticipate that the students will be well-versed in this significant module. This module covers a number of common and significant subjects.

. No	Subject	Hours
1	Paediatrics	2
2	Medicine	2
3	Radiology	1
4	Surgery	12
5	Medical Education	4

6	Psychiatry	2
7	Anesthesia	5
8	Critical Care	5
9	Orthopaedics & trauma	4
	<b>Total hours</b>	<b>35</b>

## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

- i. Student must report to examination hall/venue, in time for smooth conduction of the exams.
- ii. No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
- iii. No students will be allowed to sit in exam without College ID Card, and Lab Coat
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- v. Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
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- ix. **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### ASSESSMENT

#### **Internal: Total 10% (20 marks)**

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
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- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.

- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

#### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

### **METHODS OF ASSESSMENT**

#### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

#### **Short Essay Questions (SEQs):**

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

#### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related

questions for students will be used to answer on the provided answer copy.

- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

## **ASSIGNMENTS**

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## **WEEKLY TESTS**

The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.

It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.

Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

## **POST-TEST DISCUSSION (PTD)**

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD
- Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class
- PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.



## GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable

## ASSESSMENT BLUEPRINT

### FOUNDATION-II MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

## RECOMMENDED BOOKS

SUBJECT	RESOURCES
PAEDIATRICS	4. Nelson textbook of pediatrics
	5. Textbook of Pediatrics, Pakistan Pediatrics Association
	6. Basis of Pediatrics, Pervez Akbar khan, Ninth edition
	7. Current pediatrics
	8. OP Ghai Essential of Pediatrics Textbook

<p style="text-align: center;"><b>SURGERY</b></p>	<p>12. Bailey &amp; Love's Short Practice of Surgery 27th edition (a new edition is expected shortly. Keep a look out for the new one)</p> <p>13. Demonstration of Physical Signs in Clinical Surgery, by Hamilton Bailey. 19th edition or newer. Text Book</p> <p>14. Browse's Introduction to Symptoms and Signs of Surgical Disease. Text Book</p> <p>15. Ackerman's Surgical Pathology. Latest Edition</p>
<p style="text-align: center;"><b>GENERAL MEDICINE</b></p>	<p>6. Hutchison's Clinical Methods, 23<sup>rd</sup> Edition</p> <p>7. MacLeod's clinical examination 13th edition</p> <p>8. Davidson's Principles and Practice of Medicine</p> <p>9. Kumar and Clark's Clinical Medicine</p> <p>10. HCAI guidelines CDC</p>



**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you? Y  N
- B. The course contents met with your expectations  
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned  
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with  
l. Too few examples 5. Adequate examples
- E. The level of the course was  
l. Too low 5. Too high
- F. The course contents compared with your expectations  
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices  
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?  
l. Not at all 5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand  
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used  
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate  
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful  
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes  No

F. Please give overall rating of the course

90% - 100% (    )

80% - 90% (    )

70% - 80% (    )

60% - 70% (    )

50% - 60% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Foundation-II, Blood-III, Cardiorespiratory -III, Endocrine and Reproduction-IV, Renal-III, Git and Liver-IV, Multisystem, Musculoskeletal-II and Neuroscience -III modules which links basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF MULTISYSTEM MODULE



## MODULE OVERVIEW

### MULTISYSTEM MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Final professional
<b>Duration</b>	3 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCOs, SEQs, OSPE, VIVA

### MULTISYSTEM MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### Module objectives:

- Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- Highlights information on the contribution of continuous on the student's overall performance.
- Includes information on the assessment methods that will be held to determine every student's performance.

#### Achievement of objectives:

- Focuses on information pertaining to examination policy, rules and regulations.

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences

- Clinical Rotations
- Skills session
- Self-Directed Study

- **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.



## INTRODUCTION

The Multisystem Module is a pivotal component designed to provide medical students with a comprehensive and integrated understanding of the human body's various systems. This Module recognizes the intricate interconnectedness of the body's diverse physiological systems, including the cardiovascular, respiratory, gastrointestinal, musculoskeletal, nervous, reproductive and endocrine systems, among others. Through an interdisciplinary approach, students are exposed to the complexities of how these systems collaborate and respond to maintain homeostasis in health and confront challenges in illness. The module is designed to cultivate professionalism, ethical reasoning, and effective communication skills, preparing students to navigate the complexities of patient care in a compassionate and patient-centered manner. Through exposure to diverse clinical scenarios and patient populations, students develop a nuanced understanding of the variations in disease presentations and treatment approaches.

### RATIONAL

The Multisystem Module in the final year of MBBS represents a crucial juncture in medical education, where students consolidate their knowledge, refine their clinical skills, and emerge as well-rounded physicians prepared to tackle the challenges of diverse medical scenarios in their future careers. The Multisystem Module aligns with the overarching goal of preparing students for licensure and entry into medical practice. It ensures that graduates possess the necessary competencies to meet the demands of a dynamic healthcare environment, providing high-quality and patient-centered care.

## LEARNING OBJECTIVES

### Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Explain the etiology, risk factors, complications, and management of obesity
2. Explain the classification, etiology, risk factors, and management of PCM
3. Explain the risk factors, clinical features, investigations, and treatment of common water-soluble and fat-soluble vitamins
4. Explain the concepts of nutritional support both in the hospital and community settings
5. Explain the risk factors, clinical features, complications, and management of Anorexia nervosa and Bulimia nervosa
6. Discuss the management of common household poisoning including natural gas and snake bites
7. Explain the management of heat and cold-related disorders
8. Discuss the high-altitude sickness, decompression sickness, drowning, and electrocution.
9. Discuss chromosomal abnormalities, their clinical features, and the concepts of genetic counseling
10. Discuss the management of different autoimmune disorders in children and adults and their complications

### Skills / Psychomotor Domain:

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

11. The ability to quickly and accurately assess vital signs, including heart rate, respiratory rate, blood pressure, and temperature in emergency cases
12. Clearing the airway to ensure adequate oxygenation
13. Proficient insertion of intravenous lines for administering antidotes or other specific treatments

14. Perform insertion of Nasogastric tube
15. Performing BLS
16. Observe the insertion and care of Percutaneous Endoscopic Gastrostomy tube
17. Keep an intake and output record of an admitted patient on parenteral nutrition
18. Interpreting ECG tracings to identify and manage cardiac complications in severe cases of poisoning
19. Observe / perform gastric lavage.

#### Attitude / Affective Domain:

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

20. Respect oneself and one's peers, both when providing and receiving comments.
21. To show patients compassion and understanding.
22. Develop your ability to communicate while keeping a sense of duty to your patients.
23. Demonstrate empathy and compassion to understand the patient's experience
24. Relate to patient and caregivers vulnerability
25. Advocating for the patient's best interests, ensuring they receive appropriate care and support
26. Demonstrate ethical self-management
27. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.

#### Outcomes of Multisystem Module

- A. Knowledgeable
- B. Skillful
- C. Community Health Promoter
- D. Problem-solver
- E. Professional
- F. Researcher
- G. Leader and Role Model

#### THEMES FOR MULTISYSTEM MODULE

S.NO	Themes
1	Weight gain / loss
2	Poisoning
3	Hypo and Hyperthermia
4	Childhood abnormalities
5	Cutaneous Rash and Joint pains

#### SPECIFIC LEARNING OBJECTIVES THEME WISE

##### THEME-1: WEIGHT GAIN / LOSS

Subject	Topic	Hours	S. No	Domain of learning	Learning objectives
<b>Medicine</b>	Obesity	2	1	Cognitive	Classify the types of obesity.
			2	Cognitive	Discuss the etiology of obesity.

			3	Cognitive	Explain the methods of measuring obesity.
			4	Cognitive	Discuss the musculoskeletal, endocrine, cardiovascular, and psychological complications of obesity.
			5	Cognitive	Classify the drugs used in the management of obesity and their complications and adverse effects.
<b>Surgery</b>	Bariatric surgery	1	6	Cognitive	Discuss the forms of surgical management of obesity
	Vitamins deficiencies <ul style="list-style-type: none"> <li>• Thiamine deficiency</li> <li>• Pyridoxine deficiency</li> <li>• B12 deficiency and pernicious anemia</li> </ul>	2	7	Cognitive	Explain the etiology, clinical features, investigations, and treatment of Beri Beri.
			8	Cognitive	Explain the etiology, clinical features, investigations, and treatment of Pyridoxine deficiency.
			9	Cognitive	Explain the etiology, clinical features, investigations, and treatment of B12 deficiency / pernicious anemia.
Vitamin A, D, E, K deficiency	2	10	Cognitive	Explain the etiology, clinical features, investigations, treatment, and prevention of Vitamin A deficiency	
			11	Cognitive	Explain the etiology, clinical features, investigations, and treatment of vitamin D deficiency
			12	Cognitive	Explain the etiology, clinical features, investigations, and treatment of vitamin E deficiency
			13	Cognitive	Explain the etiology, clinical features, and management of vitamin K deficiency
<b>Surgery</b>	Nutritional support/Enteral and parenteral nutrition	2	14	Cognitive	Define malnutrition and explain the methods of nutritional support.
			15	Cognitive	Explain the indications, contraindications, and complications of oral, enteral, and parenteral nutritional support
			16	Cognitive	Discuss the modes of clinical and laboratory monitoring of nutritional support
			17	Cognitive	Describe the routes of access of parenteral nutrition
		1	18	Psychomotor	Perform insertion of Nasogastric tube
		1	19	Psychomotor	Observe the insertion and care of PEG tube
		1	20	Psychomotor	Keep an intake and output record of an admitted patient on parenteral nutrition
			21	Affective	Counsel a patient before NG tube and PEG tube insertion

<b>Pediatrics</b>	Protein calorie malnutrition	1	22	Cognitive	Discuss the causes of malnutrition in developing countries <ul style="list-style-type: none"> <li>- Describe the different forms of protein-energy malnutrition</li> <li>- Describe the symptoms of severe protein-energy malnutrition in children</li> <li>- Outline the treatment needed to treat a malnourished child</li> <li>- Define the criteria that classifies protein-energy malnutrition</li> </ul> Explain the different causes, forms, classification, clinical features, and management of PMC
<b>Psychiatry</b>	Anorexia nervosa and Bulimia nervosa	1	23	Cognitive	Discuss the etiology, precipitating factors, clinical features, and management of Anorexia nervosa
			24	Cognitive	Discuss the etiology, precipitating factors, clinical features, and management of Bulimia nervosa.

### THEME-2: POISONING

Subject	Topic	Hours	S. No	Domain of learning	Learning objectives
Medicine	Approach to a patient with poisoning	1	25	Cognitive	Explain the management approach to a patient with poisoning in emergency setup
	Management of a comatose patient with poisoning	1	26	Cognitive	Discuss the management approach to a patient who presents in a comatose state in emergency
	Diagnosis of a patient with poisoning	1	27	Cognitive	Diagnose a patient with poisoning
	Common antidotes and general management of poisoning		28	Cognitive	Discuss the antidotes for common poisons and their management
	Selected poisoning <ul style="list-style-type: none"> <li>• Acetaminophen</li> <li>• Amphetamines and cocaine</li> <li>• Benzodiazepine</li> <li>• Insecticides and anticholinergics</li> <li>• Carbon monoxide</li> <li>• Ethanol and</li> </ul>	1	29	Cognitive	Discuss the management of a patient with paracetamol poisoning
		3	30	Cognitive	Discuss the management of a patient with Amphetamine, cocaine and Ice poisoning
			31	Cognitive	Discuss the management of a patient with benzodiazepine poisoning
			32	Cognitive	Discuss the management of a patient with insecticide and anticholinergic poisoning
33			Cognitive	Discuss the management of a patient with ethanol and methanol poisoning	

<ul style="list-style-type: none"> <li>Methanol</li> <li>Snake bites</li> </ul>	34	Cognitive	Discuss the management of a patient with Carbon monoxide (Natural gas) poisoning
	35	Cognitive	Discuss the management of a patient with snake venom poisoning
	36	Psychomotor	Perform gastric lavage
	37	Affective	Counsel a patient/family with poisoning

### THEME-3: HYPOTHERMIA AND HYPERTHERMIA

Subject	Topic	Hours	S. No	Domain of learning	Learning objectives
Medicine	Heat-related disorders	1	38	Cognitive	Classify heat-related disorders
	Hyperthermia		39	Cognitive	Explain the etiology, pathogenesis, clinical features and management of Hyperthermia and heat stroke
			40	Cognitive	Differentiate between hyperthermia and hyperpyrexia
	Hypothermia	1	41	Cognitive	Explain the risk factors, complications, and management of hypothermia.
	Drowning		42	Cognitive	Explain the management of a patient with drowning
	Electrical injuries		43	Cognitive	Discuss the management of a patient with electrocution
	High altitude sickness	1	44	Cognitive	Discuss the clinical features, management, and prevention of high-altitude sickness.
	Decompression sickness		45	Cognitive	Discuss the management of a patient with decompression sickness.

### THEME-4: CHILDHOOD ABNORMALITIES

Subject	Topic	Hours	S. No	Domain of learning	Learning objectives
Pediatrics	Porphyria	1	46	Cognitive	Classify porphyria.
			47	Cognitive	Explain the etiology, pathogenesis, clinical features and treatment of different types of porphyria
	Down syndrome	1	48	Cognitive	Explain the risk factor, chromosomal aberrations, clinical features and complications of Down Syndrome
	Collagen disorders	1	49	Cognitive	Classify collagen disorders and their clinical features
	Glycogen storage diseases		50	Cognitive	Classify glycogen storage disease and their clinical features
	Mucopolysaccharidosis	1	51	Cognitive	Describe the clinical features and complications of

	s				mucopolysaccharidosis
	Galactosemia and Phenylketonuria		52	Cognitive	Describe the clinical features, investigations and complications of Galactosemia and Phenylketonuria
<b>Medicine</b>	Chromosomal disorders	1	53	Cognitive	Classify chromosomal disorders and give examples
	Single gene defects		54	Cognitive	Classify single gene disorders and give examples
	Sex linked disorders		55	Cognitive	Classify sex linked disorders and give examples
	Polygenic inheritance		56	Cognitive	Classify polygenic inheritance disorders and give examples
	Marfan syndrome	1	57	Cognitive	Explain the clinical features and complications of Marfan syndrome
<b>Gynaecology</b>	Genetic counselling and perinatal diagnosis	1	58	Cognitive	Explain the modes and indications of perinatal diagnosis
		1	59	Cognitive	Discuss the concept of genetic counseling
		11	60	Affective	Observe premarital counseling of a family for thalassemia.
		1			

#### THEME-5: CUTANEOUS RASH AND JOINT PAINS

Subject	Topic	Hours	S. No	Domain of learning	Learning objectives
<b>Medicine</b>	Evaluation of an adult with suspected autoimmune disorder	1	61	Cognitive	Discuss the diagnostic approach to a patient who presents with suspected autoimmune disorder
			62	Cognitive	Explain the different serological and immunological investigations used in the diagnosis of autoimmune disorders
			63	Cognitive	Classify and explain the mechanism of action of different pharmacotherapies in the management of autoimmune disorders
	SLE	2	64	Cognitive	Explain the clinical features, investigations, management, prognosis and complications of SLE
			65	Cognitive	Discuss the diagnostic criteria for the diagnosis of SLE
			66	Cognitive	Explain the differences between SLE and drug induced lupus
	Antiphospholipid syndrome	1	67	Cognitive	Explain the clinical features, investigations, management, prognosis and complications of Antiphospholipid syndrome

	Scleroderma	1	68	Cognitive	Explain the clinical features, investigations, management, prognosis, and complications of Scleroderma/Systemic Sclerosis
	Polymyositis and dermatomyositis	1	69	Cognitive	Explain the clinical features, investigations, management, prognosis and complications of polymyositis and dermatomyositis
	Sjogren Syndrome		70	Cognitive	Explain the clinical features, investigations, management, prognosis and complications of Sjogren Syndrome
	Giant cell arteritis and polymyalgia Rehumatica	1	71	Cognitive	Explain the clinical features, investigations, management, prognosis and complications of Giant cell arteritis and polymyalgia Rehumatica
	Polyarteritis nodosa	1	72	Cognitive	Explain the clinical features, investigations, management, prognosis and complications of Polyarteritis nodosa
	Wegener granulomatosis		73	Cognitive	Explain the clinical features, investigations, management, prognosis, and complications of Wegener granulomatosis
	Vasculitides	1	74	Cognitive	Classify vasculitides, their clinical features, diagnostic approach, and management
			75	Cognitive	Explain the clinical features, investigations, management, prognosis, and complications of Henoch-Schönlein purpura
76			Cognitive	Explain the clinical features, investigations, management, prognosis, and complications of Behçets syndrome	
<b>Pediatrics</b>	Kawasaki disease	2	77	Cognitive	Explain the clinical features, investigations, management, prognosis and complications of Kawasaki syndrome
			78	Cognitive	Explain the clinical features, investigations, management, prognosis and complications of SLE in children
<b>Nephrology</b>	Renal involvement in different autoimmune disorders	2	79	Cognitive	Classify different pathological entities involving the kidneys in SLE, Rheumatoid arthritis and other autoimmune disorders
			80	Cognitive	Explain the renal complications and their management in SLE and Rheumatoid arthritis.

## CLINICAL SCIENCES SUBJECTS

### MULTISYSTEM MODULE

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>ANAESTHESIA</b>  Monitoring	Identify which EKG leads used to monitor for myocardial ischemia and heart rhythm. Understand the use of pulse oximetry. Understand the pathophysiologic causes of intraoperative hypoxemia Understand the use of different blood pressure monitoring devices.	2 1 2 1	Skill Session Lecture Skill Session Lecture
2.	<b>CRITICAL CARE</b>  Radiology in Critical ill Patients	FAST SCAN Chest Ultrasound in critically ill patient Fluid responsiveness via ultrasonography Echocardiography in critically ill patient	1 1 1 1	Lecture Lecture Lecture Lecture
3.	<b>ORTHOPAEDICS &amp; TRAUMA</b>  Bone and Joints Disorders	Septic arthritis Osteomyelitis Clubfoot (talipes equinovarus) Scoliosis Osteogenesis imperfecta Achondroplasia Marfan's Syndrome	1 1 1 1 1 1 1	Lecture Lecture Lecture Lecture Lecture Lecture Lecture
4.	<b>FAMILY MEDICINE</b>  Mother Health	Pre conception Period Ante natal period Poste natal period Lactation	1 1 1 1	Lecture Lecture Lecture Lecture

## CLINICAL ROTATION SCHEDULE

### MORNING CLINICAL ROTATIONS

Duration	9 weeks		11 weeks		8 weeks	8 weeks
	6 weeks	3wks	8 weeks	3 weeks		
Disciplines	Medicine	Medicine & Allied	Surgery	Surgery & Allied	Gynae/Obs	Paeds
Total hours*	78	39	104	39	104	104

\* 2.6 clinical teaching hours per day

### EVENING CLINICAL ROTATIONS

Duration	6 weeks		14 weeks		8 weeks	8 weeks
	3 weeks	3wks	11 weeks	3 weeks		
Disciplines	Medicine	Medicine & Allied	Surgery	Surgery & Allied	Gynae/Obs	Paeds
Total hours*	45	45	165	45	120	120

\* 3 clinical teaching hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.



## TEACHING HOURS ALLOCATION

There will be 67 hours allotted in total. The hours shall be divided into 5 different themes. The necessity for students to set aside more time for self-directed learning and clinical learning is emphasized, although at the expense of repetition. We anticipate that the students will be well-versed in this significant module. This module covers a number of common and significant subjects.

S. No	Subject	Hours
1	Medicine	23
2	Pediatrics	7
3	Surgery	10
4	Psychiatry	1
5	Gynaecology	3
6	Nephrology	2
7	Anesthesia	6
8	Critical Care	4
9	<b>Orthopaedics &amp; trauma</b>	7
10	Family Medicine	4
	<b>Total hours</b>	<b>67</b>

## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

- i. Student must report to examination hall/venue, in time for smooth conduction of the exams.
- ii. No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
- iii. No students will be allowed to sit in exam without College ID Card, and Lab Coat
- iv. Students must sit according to their roll numbers mentioned on the seats.
- v. Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
- vi. Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
- vii. Students must not possess any written material or communicate with their fellow students
- viii. Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
- ix. **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

## ASSESSMENT

### **Internal: Total 10% (20 marks)**

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

## METHODS OF ASSESSMENT

### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

### **Short Essay Questions (SEQs):**

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.

- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

### **ASSIGNMENTS**

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### **WEEKLY TESTS**

- The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

- The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.
- It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.
- Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

### POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD
- Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class
- PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable

## ASSESSMENT BLUEPRINT

### MULTISYSTEM MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
			<b>Total</b>

## RECOMMENDED BOOKS

<i>SUBJECT</i>	<i>RESOURCES</i>
<b>PAEDIATRICS</b>	<ol style="list-style-type: none"> <li>1. Nelson textbook of pediatrics</li> <li>2. Textbook of Pediatrics, Pakistan Pediatrics Association</li> <li>3. Basis of Pediatrics, Pervez Akbar khan, Ninth edition</li> <li>4. Current pediatrics</li> <li>5. OP Ghai Essential of Pediatrics Textbook</li> </ol>
<b>SURGERY</b>	<ol style="list-style-type: none"> <li>6. Bailey &amp; Love's Short Practice of Surgery 27th edition (a new edition is expected shortly).</li> <li>7. Demonstration of Physical Signs in Clinical Surgery, by Hamilton Bailey. 19th edition or newer. Text Book</li> <li>8. Browse's Introduction to Symptoms and Signs of Surgical Disease. Text Book</li> <li>9. Ackerman's Surgical Pathology. Latest Edition</li> </ol>
<b>GENERAL MEDICINE</b>	<ol style="list-style-type: none"> <li>11. Hutchison's Clinical Methods, 23<sup>rd</sup> Edition</li> <li>12. MacLeod's clinical examination 13th edition</li> <li>13. Davidson's Principles and Practice of Medicine</li> <li>14. Kumar and Clark's Clinical Medicine</li> <li>15. HCAI guidelines CDC</li> </ol>
<b>GYNAECOLOGY</b>	<ol style="list-style-type: none"> <li>16. Gynaecology by Ten Teachers, 23<sup>rd</sup> edition</li> </ol>



**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you? Y  N
- B. The course contents met with your expectations  
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned  
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with  
l. Too few examples 5. Adequate examples
- E. The level of the course was  
l. Too low 5. Too high
- F. The course contents compared with your expectations  
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices  
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?  
l. Not at all 5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand  
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used  
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate  
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful  
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes  No

F. Please give overall rating of the course

90% - 100% (    )

60% - 70% (    )

80% - 90% (    )

50% - 60% (    )

70% - 80% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**MUSCULOSKELETAL SYSTEM-II MODULE**  
**FINAL PROFESSIONAL MBBS**





## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Foundation-II, Blood-III, Cardiorespiratory -III, Endocrine and Reproduction-IV, Renal-III, Git and Liver-IV, Multisystem, Musculoskeletal-II and Neuroscience -III modules which links basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF MUSCULOSKELETAL SYSTEM-II MODULE



## MODULE OVERVIEW

### MUSCULOSKELETAL SYSTEM-II MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Final professional
<b>Duration</b>	4 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies</b>	To develop medical professionals who are well - versed, adept, and have the

<b>covered</b>	right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

### MUSCULOSKELETAL SYSTEM -II MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### Module objectives:

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

#### Achievement of objectives:

Focuses on information pertaining to examination policy, rules and regulations.

### LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations
- Skills session
- Self-Directed Study
- **INTERACTIVE LECTURES:**  
Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

Conditions related to musculoskeletal system have a significant value in clinical practice. Back pain, trauma and violence are presently quite common in Pakistan. Conditions like fractures, joint diseases, bone diseases and deformities are additionally essential to have a command on. Analogously 70% of the people suffers from skin diseases in some part of their life and most of the skin infections are endemic in developing countries like Pakistan. Therefore it's additionally important to give students essential knowledge about common skin lesions and explain their clinical presentation to understand the importance of health issues related to skin and the burden of disease.

### RATIONAL

Hence to better understand these states, as well as the neoplastic and infective conditions of the musculoskeletal system including skin, appropriate disciplines will be covered in this specific module. The relevance of the various imaging modalities will also be discussed in this module. There will be an additional continual emphasis on a practical approach with regards to the most common conditions affecting the

musculoskeletal system. The important aspects of the clinical diagnosis, radiological interpretation, treatment and prevention will be likewise emphasized.

## LEARNING OBJECTIVES

### Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Discuss the diagnostic and therapeutic approach to children and adult patients with arthritis
2. Explain the surgical management of different arthritic disorders.
3. Elaborate on the management of osteoporosis, Rickets, and Osteomalacia.
4. Explain the types of spine diseases and their management.
5. Explain the types, etiology, clinical features, and management of primary muscle diseases including poliomyelitis
6. Discuss different dermatological conditions in terms of etiology, classification, investigations, and management.
7. Take history and examine a patient with an arthritic condition
8. Counsel a patient with chronic arthritic condition, psoriasis, and muscular dystrophies.

### Skills / Psychomotor Domain:

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

9. Demonstrate the ability to perform the disease specific relevant examination
10. Respond to common medical emergencies
11. Master the skill of first aid
12. Perform BLS
13. Apply the best evidenced practices for local health problems
14. Take history and perform a physical examination of a patient with symmetrical arthritis
15. Take history and perform a physical examination of a child with Arthritis and Rickets.
16. Take history and perform a physical examination of a child with muscular dystrophy
17. Take psychiatric history from a patient suffering from somatoform disorder.
18. Take history from a patient with generalized Rash.
19. Determine and calculate burn area
20. Do proper examination of a patient with cutaneous and musculoskeletal related disorders

### Attitude / Affective Domain:

It involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

21. Respect oneself and one's peers, both when providing and receiving comments.
22. To show patients compassion and understanding.
23. Develop your ability to communicate while keeping a sense of duty to your patients.
24. Showcase appropriate laboratory procedures.
25. Relate to patient and carees vulnerability
26. Demonstrate ethical self-management
27. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.

## Outcomes of Musculoskeletal System-II Module

- B. Knowledgeable
- C. Skillful Community Health Promoter
- D. Problem-solver
- E. Professional
- F. Researcher
- G. Leader and Role Model

### THEMES FOR MUSCULOSKELETAL SYSTEM-II MODULE

S.NO	Themes	Duration
1	Joint pains	1 week
2	Aching bones	1 week
3	Muscle weakness	1 week
4	Skin Rashes and burns	1 week

### SPECIFIC LEARNING OBJECTIVES THEME WISE

THEME 1: JOINT PAINS					
Subject	Topic	Hours	S. No	Domain of learning	Learning objectives:
<b>Medicine</b>	Introduction to arthritides: <ul style="list-style-type: none"> <li>• Classification</li> </ul> Serological tests	2	1	Cognitive	Classify autoimmune diseases of joints based on the pattern of joint involvement A) Peripheral <ul style="list-style-type: none"> <li>• Symmetrical</li> <li>• Oligoarticular</li> <li>• Monoarticular</li> <li>• Axial</li> </ul>
		2	2		Explain the types, and indications of autoimmune markers in different Rheumatological disorders
		2	3		Describe different modalities of investigations and their indications used in different arthritic disorders
	1	4		Explain the extra-articular manifestations of inflammatory arthritides	
	1	5		Explain the differential diagnosis, diagnostic and therapeutic approaches to an adult patient with mono-	

					Arthritis	
			6		Explain the differential diagnosis, diagnostic and therapeutic approaches to an adult patient with symmetrical polyarthritis	
			7		Explain the differential diagnosis, diagnostic and therapeutic approaches to an adult patient with oligoarticular arthritis	
	Management of common arthritic disorders	1	8		Discuss the management of patient and complications with Rheumatoid arthritis	
		1	9		Discuss the management, complications, and prognosis of a patient with SLE	
		1	10		Explain the management and complications of a patient with Ankylosing spondylitis	
			11		Discuss the clinical features and diagnosis of Reiter's syndrome, Reactive arthritis and Psoriatic arthritis	
		1	12		Discuss the management of patient and complications with Osteoarthritis	
			13		Discuss the management of patient and complications with acute Gout and Gouty Arthritis	
			14	Psychomotor	Take history and perform a physical examination of a patient with symmetrical arthritis	
				15	Affective	Counsel a patient with new onset Rheumatoid arthritis.
<b>Pediatrics</b>		Orthopedic evaluation of a child Management of pediatric arthritides	1	16	Cognitive	Perform orthopedic evaluation of a neonate and child
			1	17	Cognitive	Explain the differential diagnosis, diagnostic workup, and therapeutic approaches to a pediatric patient with mono-arthritis
	18			Cognitive	Explain the differential diagnosis, diagnostic workup and therapeutic approaches to a pediatric patient with symmetrical polyarthritis	
			19	Cognitive	Explain the differential diagnosis, diagnostic workup, and therapeutic approaches to a pediatric patient with oligoarticular arthritis	

	Management of common arthritic disorders in children	1	20	Cognitive	Discuss the management of patient and complications with Juvenile idiopathic arthritis
			21	Psychomotor	Take history and perform a physical examination of a child with Arthritis
			22	Affective	Counsel a child and his parents with newonset Juvenile Chronic arthritis
<b>Orthopedics</b>	Surgical management of disabling Rheumatoid arthritis	2	23	Cognitive	Explain the surgical interventions and their indications in the management of disabling Rheumatoid arthritis <ul style="list-style-type: none"> <li>• Rheumatic hand disorders</li> <li>• Rheumatic foot disorders</li> </ul>
	Tuberculous/ Septic arthritis	2	24	Cognitive	Discuss the etiology, risk factors, Clinical presentation, Diagnostic approach, and management of tuberculous and septic hip and knee arthritis.
<b>Radiology</b>	Limbs radiographs	2		Cognitive	Identify the deformities of limbs and joints in X-rays taken on AP and Lateral View (fractures, tumours, osteoporosis, osteophytes, joint effusion)

### THEME-2: ACHING BONES

Subject	Topic	Hours	S. No	Domain of learning	Learning objectives
<b>Medicine</b>	Osteoporosis	1	25	Cognitive	Explain the etiology, risk factors, complications, management, and prevention of Osteoporosis
<b>Pediatrics</b>	Rickets and Osteomalacia	1	26	Cognitive	Discuss the diagnostic approach to a child with Rickets
			27	Cognitive	Discuss the etiology, clinical, radiological, and laboratory features of Rickets and Osteomalacia and their Treatments
			28	Psychomotor	Take history and perform a physical examination of a patient with Rickets
<b>Orthopedics</b>	Deformities and congenital disorders	2	29	Cognitive	Classify common deformities and congenital disorders of bones
		1	30	Cognitive	Discuss the pathophysiology, clinical features and complications of Achondroplasia

			31	Cognitive	Discuss the pathophysiology, clinical features and complications of Osteogenesis imperfecta
	Structural spine abnormalities	3	32	Cognitive	Discuss the pathophysiology, clinical features and complications of Paget`s disease
			33	Cognitive	Classify and explain structural spine abnormalities in terms of clinical features, complications, and management
	Osteomyelitis	2	34	Cognitive	Explain the etiology, clinical presentation, investigations, and medical and surgical management of Osteomyelitis
	Caries Spine	2	35	Cognitive	Explain the etiology, clinical presentation, investigations, and medical and surgical management of Caries spine

### THEME 3: MUSCLE WEAKNESS

Subject	Topic	Hours	S. No	Domain of learning	Learning objectives
Medicine	Proximal myopathy	1	36	Cognitive	Elaborate on the etiology and diagnostic workup of a patient with proximal muscle weakness
	Polymyositis and dermatomyositis	1	37	Cognitive	Discuss the pathogenesis, clinical features, investigations, differential diagnosis and management of Polymyositis and Dermatomyositis
Pediatrics	Muscular dystrophies	1	38	Cognitive	Classify muscular dystrophies
			39	Cognitive	Explain the pathogenesis, clinical features, differential diagnosis, management and prognosis of Duchenne muscular dystrophy
	40	Cognitive	Explain the pathogenesis, clinical features, differential diagnosis, management and prognosis of myotonic dystrophy		
	41	Cognitive	Compare the clinical features and prognosis of Becker, limb-girdle, and facioscapulohumeral dystrophies		
			42	Psychomotor	Take history and perform a physical examination of a child with muscular dystrophy



			43	Affective	Counsel the parents of a child suffering from Muscular dystrophy
<b>Orthopedics</b>	Poliomyelitis	2	44	Cognitive	Explain the Orthopedic complications of poliomyelitis their Diagnostic workup and Management
<b>Psychiatry</b>	Somatoform disorders	1	45	Cognitive	Classify somatoform disorders
			46	Cognitive	Explain the criteria for the diagnosis of pain somatoform disorders
			47	Cognitive	Explain the clinical presentation, psychiatric assessment, pharmacological and psychological management of a patient with fibromyalgia and other somatoform disorders
			48	Psychomotor	Take psychiatric history from a patient suffering from somatoform disorder
			49	Affective	Counsel a patient with somatoform disorder

#### THEME 4: SKIN RASHES AND BURNS

Subject	Topic	Hours	S. No	Domain of learning	Learning objectives
<b>Dermatology</b>	Cutaneous manifestations of systemic diseases	1	50	Cognitive	Explain the common cutaneous manifestations of metabolic, endocrine, autoimmune, and neoplastic diseases
	Drugs rash	1	51	Cognitive	Classify the different types of drug rashes
			52	Cognitive	Explain the clinical manifestations, differential diagnosis, and management of erythema multiforme/Steven Johnson/Toxic Epidermal Necrolysis.
	Viral Infections of the Skin	1	53	Cognitive	Explain the clinical manifestations, differential diagnosis and management of Chicken Pox and Herpes Zoster
	<ul style="list-style-type: none"> <li>Chicken pox and Herpes Zoster</li> <li>Warts (Human</li> </ul>	1	54	Cognitive	Classify Warts

	<p>Papilloma Virus)</p> <ul style="list-style-type: none"> <li>• Molluscum Contagiosum</li> <li>• Cutaneous manifestation of AIDS</li> </ul>		55	Cognitive	Explain the mode of transmission, differential diagnosis and management of warts
	<p>Acute Bacterial infections of the skin</p> <ul style="list-style-type: none"> <li>• Impetigo</li> <li>• Folliculitis</li> <li>• Furunculosis</li> </ul> <p>Carbuncles</p>	1	56	Cognitive	Explain the mode of transmission, clinical presentation, differential diagnosis, and management of Molluscum Contagiosum in children and adults
			57	Cognitive	Describe the etiology, clinical features, and management of acute bacterial skin lesions described
	<p>Chronic bacterial infections of the skin</p> <ul style="list-style-type: none"> <li>• Cutaneous Tuberculosis</li> <li>• Leprosy</li> </ul> <p>Syphilis</p>		58		Discuss the etiology, clinical features, and management of chronic bacterial skin lesions described
	<p>Fungal infections</p> <ul style="list-style-type: none"> <li>• Pityriasis versicolor</li> <li>• Dermatophytosis</li> </ul> <p>Candidiasis</p>	1	59		Explain the etiology, clinical features, and management of fungal infections described
	<p>Sebaceous glands diseases</p> <p>Acne</p>		60		Explain the different types of Acne
			61		Explain the pathogenetic mechanisms, clinical features, complications, differential diagnosis, and management of Acne

	Autoimmune blistering disorders <ul style="list-style-type: none"> <li>• Pemphigus Vulgaris</li> <li>• Bullous pemphigoid</li> </ul>	1	62		Describe the etiology, clinical features, and management of diseases described
	Eczemas	1	63		Classify Eczema
			64		Explain the clinical presentation, differential diagnosis and management of different types of Eczemas
	Inflammatory dermatosis <ul style="list-style-type: none"> <li>• Psoriasis</li> <li>• Lichen Planus</li> <li>• Sebbhoriac Dermatitis</li> <li>• Erythema Nodosum</li> </ul> Urticaria Erythroderma		65		Describe the etiology, clinical features, and management of diseases mentioned
			66		Discuss the etiology, clinical presentation, differential diagnosis, and management of Erythroderma.
			67	Psychomot or	Take history form a patient with generalized Rash.
			68	Affective	Counsel a patient suffering from Psoriasis.
<b>Surgery/Plastic Surgery</b>	Burns <ul style="list-style-type: none"> <li>○ Classification</li> <li>○ Assessment</li> <li>○ Management</li> </ul> Complications	03	69	Cognitive	Classify burns.
			70	Cognitive	Assess a patient of burns in terms of burn area calculation, fluid assessment, and referral to specialized burn units.
			71	Cognitive	Discuss the initial and long-term management of burns

			72	Cognitive	Explain the early and late complications of burns
			73	Psychomotor	Calculate burn area.
			74	Affective	Counsel a patient and his/her family members with burns.

## CLINICAL SCIENCES SUBJECTS

### MUSCULOSKELETAL-II MODULE

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
4	<b>Critical care</b>  <b>Musculoskeletal Diseases</b>	Orthopaedic Injury management in ICU	1	Lectures
		Vasculitis in ICU	1	Lectures
		Anaphylaxis	1	Lectures
		Pressure Sores	1	Lectures
5	Orthopaedics & Trauma  Patient evaluation	History and examination of musculoskeletal disease ATLS Principles	2 2	Skill session  Skill session

## CLINICAL ROTATION SCHEDULE

### MORNING CLINICAL ROTATIONS

Duration	9 weeks		11 weeks		8 weeks	8 weeks
	6 weeks	3wks	8 weeks	3 weeks		
Disciplines	Medicine	Medicine & Allied	Surgery	Surgery & Allied	Gynae/Obs	Paeds
Total hours*	78	39	104	39	104	104

\* 2.6 clinical teaching hours per day

### EVENING CLINICAL ROTATIONS

Duration	6 weeks		14 weeks		8 weeks	8 weeks
	3 weeks	3wks	11 weeks	3 weeks		
Disciplines	Medicine	Medicine & Allied	Surgery	Surgery & Allied	Gynae/Obs	Paeds
Total hours*	45	45	165	45	120	120

\* 3 clinical teaching hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

## TEACHING HOURS ALLOCATION

There will be 46 hours allotted in total. The hours shall be divided into 4 different themes. The necessity for students to set aside more time for self-directed learning and clinical learning is emphasized, although at the expense of repetition. We anticipate that the students will be well-versed in this significant module. This module covers a number of common and significant subjects.

S. No	Subject	Hours
1	Paediatrics	5
2	Medicine	12
3	Plastic Surgery	3
4	Dermatology	8
5	Psychiatry	1
6	Radiology	2
7	Anesthesia	4
8	Orthopaedics & Trauma	20
	<b>Total hours</b>	<b>55</b>

## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

2. Student must report to examination hall/venue, in time for smooth conduction of the exams.
3. No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
4. No students will be allowed to sit in exam without College ID Card, and Lab Coat
5. Students must sit according to their roll numbers mentioned on the seats.
6. Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) – Sharing is prohibited
7. Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
8. Students must not possess any written material or communicate with their fellow students
9. Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
10. **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

## ASSESSMENT

### **Internal: Total 10% (20 marks)**

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

## METHODS OF ASSESSMENT

### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

### **Short Essay Questions (SEQs):**

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.

- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

### OSPE / OSCE

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

### ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### WEEKLY TESTS

- The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.
- The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.

- It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.
- Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

### POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD
- Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class
- PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable

### ASSESSMENT BLUEPRINT

#### MUSCULOSKELETAL SYSTEM-II MODULE

Assessment is based on Table of Specification (TOS)



	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

### RECOMMENDED BOOKS

SUBJECT	RESOURCES
<b>PAEDIATRICS</b>	<ul style="list-style-type: none"> <li>• Nelson textbook of pediatrics</li> <li>• Textbook of Pediatrics, Pakistan Pediatrics Association</li> <li>• Basis of Pediatrics, Pervez Akbar khan, Ninth edition</li> <li>• Current pediatrics</li> <li>• OP Ghai Essential of Pediatrics Textbook</li> </ul>
<b>SURGERY</b>	<ul style="list-style-type: none"> <li>• Bailey &amp; Love's Short Practice of Surgery 27th edition (a new edition is expected shortly. Keep a look out for the new one</li> <li>• Demonstration of Physical Signs in Clinical Surgery, by Hamilton Bailey. 19th edition or newer. Text Book</li> <li>• Browse's Introduction to Symptoms and Signs of Surgical Disease. Text Book</li> <li>• Ackerman's Surgical Pathology. Latest Edition</li> </ul>
<b>GENERAL MEDICINE</b>	<ul style="list-style-type: none"> <li>• Hutchison's Clinical Methods, 23<sup>rd</sup> Edition</li> <li>• MacLeod's clinical examination 13th edition</li> <li>• Davidson's Principles and Practice of Medicine</li> <li>• Kumar and Clark's Clinical Medicine</li> <li>• HCAI guidelines CDC</li> </ul>



**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you?    Y     N
- B. The course contents met with your expectations   
    l. Strongly disagree                      5. Strongly agree
- C. The lecture sequence was well-planned   
    l. Strongly disagree                      5. Strongly agree
- D. The contents were illustrated with   
    l. Too few examples                      5. Adequate examples
- E. The level of the course was   
    l. Too low                                      5. Too high
- F. The course contents compared with your expectations   
    l. Too theoretical                      5. Too empirical
- G. The course exposed you to new knowledge and practices   
    l. Strongly disagree                      5. Strongly agree
- H. Will you recommend this course to your colleagues?   
    l. Not at all                                      5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand   
    l. Strongly disagree                      5. Strongly agree
- B. The teaching aids were effectively used   
    l. Strongly disagree                      5. Strongly agree
- C. The course material handed out was adequate   
    l. Strongly disagree                      5. Strongly agree
- D. The instructors encouraged interaction and were helpful   
    l. Strongly disagree                      5. Strongly agree
- E. Were objectives of the course realized?    Yes     No

F. Please give overall rating of the course

90% - 100% (    )

60% - 70% (    )

80% - 90% (    )

50% - 60% (    )

70% - 80% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**STUDENT'S STUDY GUIDE**  
**NEUROSCIENCE - III MODULE**  
**FINAL PROFESSIONAL MBBS**

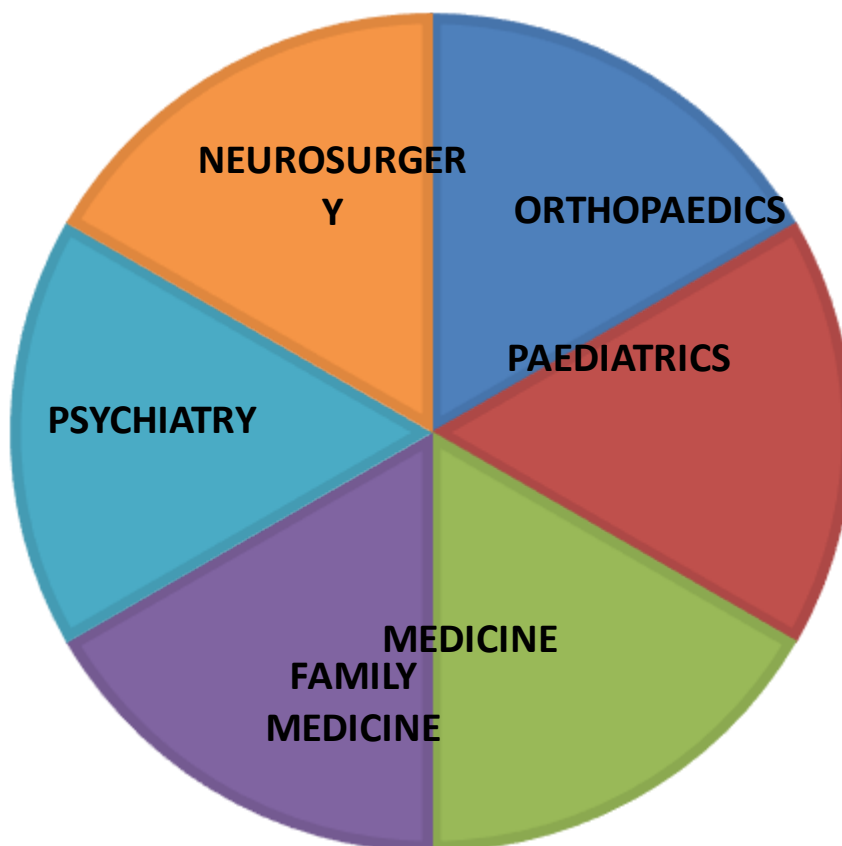


## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Foundation-II, Blood-III, Cardiorespiratory -III, Endocrine and Reproduction-IV, Renal-III, Git and Liver-IV, Multisystem, Musculoskeletal-II and Neuroscience -III modules which links basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF NEUROSCIENCE-III MODULE



## MODULE OVERVIEW

### NEUROSCIENCE-III MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Final professional
<b>Duration</b>	6 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

### NEUROSCIENCE-III MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### Module objectives:

- Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- Highlights information on the contribution of continuous on the student's overall performance.
- Includes information on the assessment methods that will be held to determine every student's performance.

#### Achievement of objectives:

- Focuses on information pertaining to examination policy, rules and regulations.

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations
- Skills session

- Self-Directed Study

- **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

The nervous system is the body's most complex system. The nervous system is directly or indirectly engaged in the pathophysiology of a great deal of disorders, or it may be implicated in systemic illnesses. Some of the more frequent diseases of the nervous system include infections like meningitis and encephalitis, movement disorders, demyelinating diseases, epilepsy, and cerebrovascular accidents, in addition to congenital and traumatic disorders. High morbidity and death are avoided by prompt diagnosis and treatment. The fundamental cycle's Neurosciences 1 module has already given students a solid foundation in the

pathophysiology, neuropharmacology, anatomy, and physiology of CNS disorders. The student will study the clinical presentation, diagnosis, and treatment of various illnesses in this second clinical spiral.

### **RATIONAL**

This module will provide students with a multidisciplinary approach to understanding the etiology of neurological and mental disorders. Neurological problems are the leading cause for disability globally. An estimated 1-billion people around the world have a neurological disorder or disease, which is almost 15-percent of the world's population. According to WHO more than 6 million people die because of stroke each year; over 80% of these deaths take place in low and middle-income countries. Psychiatric disorders are also major human toll of ill health. According to 2012 WHO data, Neuro-Psychiatric disorders are among 12 leading causes of disability and death in Pakistan. In this module students will learn about the etiology of common disorders encountered by neurologists and psychiatrists and develop comprehensive understanding of the biological, pathological, psychological and social factors behind these disorders.

## **LEARNING OBJECTIVES**

### **Knowledge / Cognitive Domain**

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Enlist the investigation for diagnosing neurological disorders
2. Discuss the assessment and management of raised ICP, cerebral edema and brain herniation
3. Differentiate between anxiety and depression, manic disorders and discuss their Management
4. Compare primary and secondary headache
5. Formulate a table to identify /classify drugs used for general, regional and local anesthesia
6. Describe pathophysiology, clinical classification and management of seizure disorders
7. Know the approach for assessment and management of adult as well as paed stroke, dementia and Parkinson disease
8. Classify CNS infection and discuss the management
9. Explain pathology of degenerative disorders of brain
10. Recognize CP child and evaluation of mental retardation
11. Classify brain tumors and evaluate management plan for it

### **Skills / Psychomotor Domain:**

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

12. Demonstrate the ability to perform the disease specific relevant examination
13. Respond to common medical emergencies
14. Master the skill of first aid
15. Manage ischemic or hemorrhagic cerebrovascular events by knowing their effect on brain parenchyma and the various clinical effects thus produced.
16. Radiological diagnosis and introduction to neuro rehabilitation and rehabilitation of patient
17. Identify the involvement of isolated or multiple brain regions and structures in degenerative disorders and know resulting clinical syndromes.
18. Develop an approach to metabolic & toxic disorders affecting Nervous System in children
19. Manage anxiety and depression when it begins to interfere with social or occupational functioning.

### **Attitude / Affective Domain:**

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:



20. Respect oneself and one's peers, both when providing and receiving comments.
21. To show patients compassion and understanding.
22. Develop your ability to communicate while keeping a sense of duty to your patients.
23. Showcase appropriate laboratory procedures.
24. Relate to patient and careers vulnerability
25. Demonstrate ethical self-management
26. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.

### Outcomes of Neuroscience-III Module

- A. Knowledgeable
- B. Skillful
- C. Community Health Promoter
- D. Problem-solver
- E. Professional
- F. Researcher
- G. Leader and Role Model

### THEMES FOR NEUROSCIENCE-III MODULE

S.NO	Themes	Duration
1	Disturbed mood & behavior	1 week
2	Right sided weakness and inability to speak	1 week
3	Loss of consciousness & fits	1 week
4	Tremors	1 week
5	Headache	1 week
6	Paraplegia	1 week

### SPECIFIC LEARNING OBJECTIVES THEME WISE

#### THEME-1: DISTURBED MOOD AND BEHAVIOR

Subject	Topic	Hours	Learning domain	Learning methodology	Learning objectives	Assessment tools
Medicine	Dementia	1	Cognitive	Interactive Lecture	Discuss the etiology, clinical features, and management of different types of Dementias	MCQ, SEQ
			Cognitive	Interactive Lecture	Classify the reversible and irreversible causes of Dementia	MCQ, SEQ

			Cognitive	Interactive Lecture	Explain the pathophysiology and clinical features of a patient with Huntington's disease	MCQ, SEQ
			Cognitive	Interactive Lecture	Discuss the diagnostic work up and management for patients suspected of dementia	MCQ, SEQ
			Psychomotor Skills	SGD	Perform mini-mental state examination	OSCE
<b>Psychiatry</b>	PTSD	1	Cognitive	Interactive Lecture	Explain the etiology and management of a patient with PTSD	MCQ, SEQ
	OCD		Cognitive	Interactive Lecture	Explain the etiology and management of a patient with OCD	MCQ, SEQ
	Somatic symptoms disorder	1	Cognitive	Interactive Lecture	Explain the etiology and management of a patient with Somatic symptoms disorder and Chronic pain syndromes	MCQ, SEQ
	Autism spectrum Disorder		Cognitive	Interactive Lecture	Explain the etiology and management of a child with autism spectrum disorder.	MCQ, SEQ
<b>Family Medicine/ General Medicine</b>	Substance abuse		Cognitive	Interactive Lecture	Explain the risk factors, types of substance abuse, clinical features, withdrawal symptoms, complications and management of a patient with substance abuse	MCQ, SEQ
		Anxiety and depression	1	Affective domain	Roleplay	Counsel and educate a family of a patient with Dementia
	Cognitive			Interactive Lecture	Explain the approach to a patient with anxiety and depression in a primary health care setting.	MCQ, SEQ
	Cognitive		Interactive Lecture	Explain the risk assessment for mental health	MCQ, SEQ	
	Cognitive		Interactive Lecture	Identify common red-flags.	MCQ, SEQ	
	Cognitive		Interactive Lecture	Discuss the guidelines for management of a patient with Anxiety and depression in a primary health care setting	MCQ, SEQ	
	Psychomotor Skills		SGD	Perform Screening for Anxiety, Depression and Schizophrenia.	OSCE	
				Psychomotor Skills	SGD	Perform a consultation with a patient with anxiety or depression under supervision.
			Affective domain	Roleplay	Observe the consultation of a family physician with a patient with anxiety or depression	OSCE

## THEME 2: RIGHT-SIDED WEAKNESS AND INABILITY TO SPEAK

Subject	Topic	Hours	Learning domain	Learning methodology	Learning objectives	Assessment tools
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<b>Medicine</b>	Stroke syndromes	1	Cognitive	Interactive Lecture	Discuss the diagnostic and management approach for a patient with Right-sided weakness and inability to speak due to an ischemic stroke.	MCQ, SEQ
		1	Cognitive	Interactive Lecture	Discuss the diagnostic workup and management for a patient suspected of Haemorrhagic stroke	MCQ, SEQ
	Subarachnoid haemorrhage (SAH)		Cognitive	Interactive Lecture	Discuss the diagnostic workup and management for patients suspected of SAH	MCQ, SEQ
			Psychomotor Skills	SGD	Demonstrate the complete assessment of the patient on the NIH stroke scale under supervision	OSCE
			Psychomotor Skills	SGD	Demonstrate the assessment of a comatose patient on the Glasgow coma scale under supervision	OSCE
			Psychomotor Skills	SGD	Interpret the CT and MRI findings in stroke patients	OSCE
			Affective domain	Roleplay	Counsel a stroke victim about future prevention and management of complications	OSCE

### THEME-3: LOSS OF CONSCIOUSNESS AND FITS

Subject	Topic	Hours	Learning domain	Learning methodology	Learning objectives	Assessment tools
<b>Medicine</b>	Coma Epilepsy	1	Cognitive	Interactive Lecture	Discuss the management algorithm of a patient with coma	MCQ, SEQ
			Cognitive	Interactive Lecture	Discuss the diagnostic work up and management for a patient with fits	MCQ, SEQ
			Cognitive	Interactive Lecture	Discuss the diagnostic work up and management for a patient with Tonic Clonic epilepsy	MCQ, SEQ
			Cognitive	Interactive Lecture	Discuss the diagnostic work up and management for a patient with Status Epilepticus	MCQ, SEQ
			Psychomotor Skills	SGD	Perform a consultation with a patient with epilepsy under supervision	OSCE
			Psychomotor Skills	SGD	Write prescriptions for patients with Tonic-Clonic and Petit-mal epilepsy	OSCE
			Affective	Roleplay	Counsel a patient with Epilepsy	OSCE
<b>Pediatrics</b>	Epilepsy	1	Cognitive	Interactive Lecture	Discuss the diagnostic work up and management for children with seizures and Epilepsy	MCQ, SEQ

			Psychomotor Skills	SGD	Perform a consultation with a child having epilepsy under supervision emphasizing history and examination.	OSCE
			Psychomotor Skills	SGD	Write a prescription for a child with Tonic-Clonic and Petit-mal Epilepsy	OSCE
			Affective Domain	Roleplay	Counsel and educate the Parents/guardian of a child with epilepsy.	OSCE

#### THEME-4: TREMORS AND MOVEMENT DISORDERS

Subject	Topic	Hours	Learning domain	Learning methodology	Learning objectives	Assessment tools
Medicine	Movement Disorders	1	Cognitive	Interactive Lecture	Classify movement disorders	MCQ, SEQ
			Cognitive	Interactive Lecture	Discuss the diagnostic workup and management for patients suspected Cerebellar disorders	MCQ, SEQ
			Cognitive	Interactive Lecture	Discuss the diagnostic and management approach to a patient with Ataxia	MCQ, SEQ
			Cognitive	Interactive Lecture	Discuss the diagnostic and management approach to a patient with Chorea	MCQ, SEQ
	Parkinson's disease	1	Cognitive	Interactive Lecture	Discuss the diagnostic criteria, pharmacological, psycho-social, and rehabilitative approaches to the management of a patient with Parkinson's disease	MCQ, SEQ
			Psychomotor	SGD	Examine a patient with Parkinson's disease by taking history and performing a physical examination.	OSCE
Psychiatry	Dystonia	1	Cognitive	Interactive Lecture	Discuss the diagnostic approach and management for patients suspected of Drug- Induced Dystonia	MCQ, SEQ

**THEME 5: HEADACHE**

Subject	Topic	Hours	Learning domain	Learning methodology	Learning objectives	Assessment tools	
Medicine	Headache	1	Cognitive	Interactive Lecture	Explain the diagnostic approach to patients with acute and chronic headaches	MCQ, SEQ	
	Migraine		Cognitive	Interactive Lecture	Explain the types, risk factors, diagnostic approach, management, and prevention of Migraine	MCQ, SEQ	
			Psycho motor Skills	SGD	Demonstrate Complete history and examination of patient with migraine	OSCE	
			Affective domain	Roleplay	Discuss the lifestyle changes preventing migrainous headaches	OSCE	
	Meningitis	1	Cognitive	Interactive Lecture	Classify meningitides	MCQ, SEQ	
			Cognitive	Interactive Lecture	Differentiate between the clinical features, investigations, CSF findings, radiological findings, and complications in patients with viral, bacterial, and tuberculous meningitis	MCQ, SEQ	
			Cognitive	Interactive Lecture	Discuss the pharmacological and surgical management approaches in patients with different types of meningitides	MCQ, SEQ	
Psychomotor Skill			SGD	Take history and perform relevant physical examination and elicit signs of meningitis in a suspected patient	OSCE		
Family Medicine/ General Medicine			Psychomotor Skill	SGD	Interpret a CSF report in a patient with viral, acute pyogenic and tuberculous meningitis	OSCE	
			Psychomotor Skill	SGD	Observe the Lumbar puncture	OSCE	
			Affective domain	Roleplay	Counsel a patient and his/her family with Tuberculous meningitis regarding complications, treatments` side effects and follow ups	OSCE	
	Encephalitis	1	Cognitive	Interactive Lecture	Discuss the etiology, pathogenesis, clinical features, investigations, complications, and treatment of Encephalitis	MCQ, SEQ	
			Headache	Cognitive	Interactive Lecture	Explain the approach to a patient with Headache in a primary health care setting	MCQ, SEQ
				Cognitive	Interactive Lecture	Identify common red flags in a patient with headache	MCQ, SEQ
				Cognitive	Interactive Lecture	Discuss the investigations for a patient with Headache in a primary health care setting.	MCQ, SEQ

			Cognitive	Interactive Lecture	Identify patients that need urgent and proper referral for specialist care	MCQ, SEQ
Pediatrics		1	Cognitive	Interactive Lecture	Discuss the diagnostic work up and management for children with Headache	MCQ, SEQ
	Meningitis	1	Cognitive	Interactive Lecture	Discuss the diagnostic work up and managements for children suspected of Meningitis	MCQ, SEQ
			Cognitive	Interactive Lecture	Explain the short term and long-term sequelae of meningitis	MCQ, SEQ
			Psycho motor Skills	SDG	Describe assessing the initial triad symptoms of meningitis in children	OSCE
	Big head	1	Cognitive	Interactive Lecture	Explain the diagnostic and therapeutic approach to a child with big head	MCQ, SEQ
Neurosurgery	Intracranial	1	Cognitive	Interactive Lecture	Classify intracranial space occupying lesions (benign, malignant and infections)	MCQ, SEQ
	space		Cognitive	Interactive Lecture	Discuss the clinical features, radiological findings and treatment of intracranial space occupying lesions	MCQ, SEQ
	occupying lesions	1	Cognitive	Interactive Lecture	Discuss the diagnostic workup and management for patients with Head Injury	OSCE
			Affective domain			

#### THEME-6: LOWER LIMB WEAKNESS

Subject	Topic	Hours	Learning domain	Learning methodology	Learning objectives	Assessment tools
Medicine	Multiple Sclerosis	1	Cognitive	Interactive Lecture	Discuss the diagnostic approach and management of a patient with suspected Multiple Sclerosis	MCQ, SEQ
			Psychomotor Skills	SGD	Examine the lower limbs of a patient with paraplegia	OSCE
			Affective Domain	Roleplay	Discuss and counsel the pts regarding the changes in the lifestyle of patients with Multiple sclerosis	OSCE
	Acquired Neuropathies	1	Cognitive	Interactive Lecture	Classify acquired neuropathies and discuss their clinical features, investigations, and management	MCQ, SEQ
	Approach to Lower limbs weakness	1	Cognitive	Interactive Lecture	Discuss the diagnostic algorithm of a patient with lower limbs weakness	MCQ, SEQ
Pediatrics	Hereditary neuropathies	1	Cognitive	Interactive Lecture	Classify hereditary neuropathies and discuss their clinical features, investigations, and management	MCQ, SEQ
Pediatric						

surgery	Congenital malformations	1	Cognitive	Interactive Lecture	Explain the clinical features, investigations, and management of a paediatric child with Spina Bifida/Myelomeningocele	MCQ, SEQ
	Spina Bifida/myelomeningocele		Affective Domain	Roleplay	Discuss and counsel the pts regarding the changes in the lifestyle of patients with congenital malformations	OSCE
Neurosurgery	Syringomyelia	1	Cognitive	Interactive Lecture	Describe Syringomyelia and Explain the onset of Syringomyelia	MCQ, SEQ
			Cognitive	Interactive Lecture	Discuss the diagnostic work up and management for pts suspected of	
Orthopedic	Diseases of the vertebrae and intervertebral discs	1	Cognitive	Interactive Lecture	Classify diseases of the vertebrae and intervertebral discs, their clinical features, investigations, complications, and management	MCQ, SEQ
	Kyphoscoliosis	1	Cognitive	Interactive Lecture	Discuss the etiology, clinical features, complications, and management of Kyphoscoliosis.	MCQ, SEQ
Radiology	CT Scan Brain	1	Cognitive	Interactive Lecture	Identify the Brain lesions in the CT Scan brain (cerebral edema, ventricular hypertrophy, epidural or subdural hematoma)	OSCE

## CLINICAL SCIENCES SUBJECTS

### NEUROSCIENCE-III MODULE

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>CRITICAL CARE</b>  Neurology	Subarachnoid Hemorrhage Critical illness myopathy & neuropathy CNS infections including cerebral malaria Neuroimaging in critically ill patients	1 1 1 1	Lecture Lecture Lecture Lecture

## CLINICAL ROTATION SCHEDULE

### MORNING CLINICAL ROTATIONS

Duration	9 weeks		11 weeks		8 weeks	8 weeks
	6 weeks	3wks	8 weeks	3 weeks		
Disciplines	Medicine	Medicine & Allied	Surgery	Surgery & Allied	Gynae/Obs	Paeds
Total hours*	78	39	104	39	104	104

\* 2.6 clinical teaching hours per day

### EVENING CLINICAL ROTATIONS

Duration	6 weeks		14 weeks		8 weeks	8 weeks
	3 weeks	3wks	11 weeks	3 weeks		
Disciplines	Medicine	Medicine & Allied	Surgery	Surgery & Allied	Gynae/Obs	Paeds
Total hours*	45	45	165	45	120	120

\* 3 clinical teaching hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

### TEACHING HOURS ALLOCATION

There will be 34 hours allotted in total. The hours shall be divided into 6 different themes. The necessity for students to set aside more time for self-directed learning and clinical learning is emphasized, although at the expense of repetition. We anticipate that the students will be well-versed in this significant module. This module covers a number of common and significant subjects.

S. No	Subject	Hours
1	Paediatrics	6
2	Medicine	12
3	Psychiatry	3
4	Family Medicine	3
5	Orthopaedics	2
6	Neurosurgery	3
8	Radiology	1
9	Critical Care	4
	<b>Total hours</b>	<b>34</b>

### EXAMINATION AND METHODS OF ASSESSMENT

#### EXAMINATION RULES AND REGULATIONS

1. Student must report to examination hall/venue, in time for smooth conduction of the exams.
2. No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
3. No students will be allowed to sit in exam without College ID Card, and Lab Coat
4. Students must sit according to their roll numbers mentioned on the seats.
5. Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
6. Any disturbance or Indiscipline in the exam hall/venue is not acceptable.



7. Students must not possess any written material or communicate with their fellow students
8. Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
9. **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### ASSESSMENT

#### **Internal: Total 10% (20 marks)**

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

#### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

### METHODS OF ASSESSMENT

#### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

#### **Short Essay Questions (SEQs):**

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

### **ASSIGNMENTS**

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### **WEEKLY TESTS**

- The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.
- The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.
- It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the

end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.

- Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

### 11.3.6 POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD
- Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class
- PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable

## ASSESSMENT BLUEPRINT

### NEUROSCIENCE-III MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

## RECOMMENDED BOOKS

<i>SUBJECT</i>	<i>RESOURCES</i>
<b>PAEDIATRICS</b>	<ul style="list-style-type: none"> <li>• Nelson textbook of pediatrics</li> <li>• Textbook of Pediatrics, Pakistan Pediatrics Association</li> <li>• Basis of Pediatrics, Pervez Akbar khan, Ninth edition</li> <li>• Current pediatrics</li> <li>• OP Ghai Essential of Pediatrics Textbook</li> </ul>
<b>SURGERY</b>	<ul style="list-style-type: none"> <li>• Bailey &amp; Love's Short Practice of Surgery 27th edition (a new edition is expected shortly. Keep a look out for the new one)</li> <li>• Demonstration of Physical Signs in Clinical Surgery, by Hamilton Bailey. 19th edition or newer. Text Book</li> <li>• Browse's Introduction to Symptoms and Signs of Surgical Disease. Text Book</li> <li>• Ackerman's Surgical Pathology. Latest Edition</li> </ul>
<b>GENERAL MEDICINE</b>	<ul style="list-style-type: none"> <li>• Hutchison's Clinical Methods, 23<sup>rd</sup> Edition</li> <li>• MacLeod's clinical examination 13th edition</li> <li>• Davidson's Principles and Practice of Medicine</li> <li>• Kumar and Clark's Clinical Medicine</li> <li>• HCAI guidelines CDC</li> </ul>



**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you? Y  N
- B. The course contents met with your expectations  
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned  
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with  
l. Too few examples 5. Adequate examples
- E. The level of the course was  
l. Too low 5. Too high
- F. The course contents compared with your expectations  
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices  
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?  
l. Not at all 5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand  
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used  
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate  
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful  
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes  No

F. Please give overall rating of the course

90% - 100% (    )

80% - 90% (    )

70% - 80% (    )

60% - 70% (    )

50% - 60% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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GIT AND LIVER-IV MODULE

FINAL PROFESSIONAL MBBS

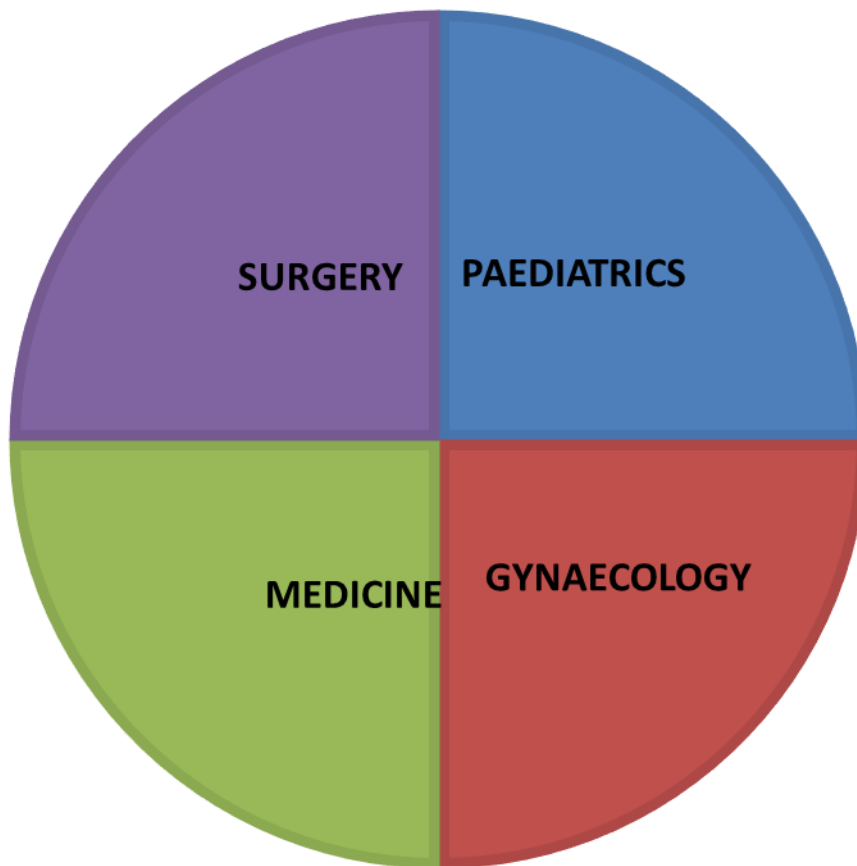


## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Foundation-II, Blood-III, Cardiorespiratory -III, Endocrine and Reproduction-IV, Renal-III, Git and Liver-IV, Multisystem, Musculoskeletal-II and Neuroscience -III modules which links basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF GIT AND LIVER-IV MODULE





## MODULE OVERVIEW

### GIT AND LIVER-IV MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Final professional
<b>Duration</b>	3 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

### GIT AND LIVER-IV MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### Module objectives:

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

#### Achievement of objectives:

- Focuses on information pertaining to examination policy, rules and regulations.

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations
- Skills session
- Self-Directed Study

- **INTERACTIVE LECTURES:**  
Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.
- **SMALL GROUP DISCUSSIONS (SGDS):**  
With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.
- **CASE-BASED LEARNING (CBL):**  
Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.
- **CLINICAL EXPERIENCES:**  
Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.
- **CLINICAL ROTATIONS:**  
Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.
- **SKILL SESSIONS:**  
Skills relevant to respective module are observed and practiced where applicable in skills laboratory.
- **SELF STUDY:**  
Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

The Gastrointestinal Tract and Liver III module in the final year MBBS program represents a critical juncture in medical education, focusing on the comprehensive study of the digestive system and hepatic physiology. This module builds upon the foundational knowledge acquired in earlier years, aiming to provide a nuanced understanding of the intricacies of gastrointestinal health and disease aspects. This module encompasses a multifaceted exploration of the Surgery, Medicine, paediatrics and clinical aspects of the gastrointestinal tract, encompassing the esophagus, stomach, small intestine, large intestine, and associated organs, along with a dedicated focus on the liver and its associated disorders and their management. This integrated understanding is essential for the holistic evaluation and management of gastrointestinal and hepatic disorders

### RATIONAL

The GIT and Liver III module serves as a comprehensive exploration of the gastrointestinal tract and liver, preparing medical graduates for the challenges of diagnosing and managing a spectrum of conditions within these vital systems. By fostering integration, clinical correlation, and procedural competence, this module equips students with the knowledge and skills necessary for their impending roles as competent and compassionate healthcare professionals

## LEARNING OBJECTIVES

### Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

- Explain diagnostic workup and management of with dysphagia.
- Discuss diagnosis & management of obstructive jaundice.
- Counsel standardized patient with newly diagnosed Ca head of Pancreas.
- Discuss diagnosis/ management of pain RIF due to suspected Appendicitis.
- Discuss diagnosis/ management of acute/chronic onset pain abdomen.
- Elicit signs of Acute appendicitis in a child.
- Counsel the parents of a child with acute appendicitis
- Discuss aetiology, diagnosis/management of suspected Intestinal Obstruction.
- Discuss aetiology, diagnosis/management of suspected intestinal perforation/peritonitis.
- Discuss aetiology, anatomy, management, complications of Inguinal Hernia.
- Perform trans-illumination test for Inguinal Hernia.
- Discuss diagnosis/management of constipation and lower GI bleeding.
- Discuss management of Ulcerative Colitis, short/long-term complications, and role of surveillance colonoscopies in the prevention of colorectal malignancies.
- Discuss management of Crohn`s Disease, short and long-term complications, and extra intestinal manifestations.
- Discuss staging/management of suspected colorectal cancer,
- Treatment of Hirschsprung`s Disease.
- Explain the approach to the management of a patient with pain epigastrium.
- Discuss the management of a patient with acute and chronic hepatitis, liver cirrhosis, and encephalopathy.
- Explain the management of a patient with acute and chronic diarrheas.
- Take history and perform a physical examination of a patient with GI diseases.
- Counsel patients and their families with common GI diseases

**Skills / Psychomotor Domain:**

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

- Obtaining informed consent for procedures and bedside techniques from patients.
- Performing a thorough examination to assess the abdomen, including inspection, palpation, percussion, and auscultation.
- Conducting a DRE to assess the rectum and evaluate for signs of pathology
- Assisting in the performance of endoscopy to visualize and assess the upper gastrointestinal tract.
- Participating in colonoscopy for the examination of the colon and rectum.
- Analyzing and interpreting results of abdominal imaging studies, such as CT scans, MRI, and ultrasound, to diagnose and monitor gastrointestinal and hepatic conditions.
- Offering guidance on dietary modifications and nutritional support.
- Inserting nasogastric tubes for decompression or feeding purposes.
- Effectively communicating with patients about their gastrointestinal or liver condition, treatment plans, and lifestyle modifications.
- Developing skills in suturing and wound closure

**Attitude / Affective Domain:**

It involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

- Respect oneself and one's peers, both when providing and receiving comments.
- To show patients compassion and understanding.
- Develop your ability to communicate while keeping a sense of duty to your patients.
- Showcase appropriate laboratory procedures.
- Relate to patient and caregivers vulnerability
- Demonstrate ethical self-management
- Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.

**Outcomes of Git and Liver-IV Module**

- Knowledgeable
- Skillful
- Community Health Promoter
- Problem-solver
- Professional
- Researcher
- Leader and Role Model

**. THEMES FOR GIT AND LIVER-IV MODULE**

S.NO	Themes
1	Difficulty in swallowing and epigastric pain
2	Yellow discoloration of the sclera

3	Abdominal pain and Diarrhea
4	Constipation and bleeding per rectum

### SPECIFIC LEARNING OBJECTIVES THEME WISE

#### THEME-1: DIFFICULTY IN SWALLOWING AND EPIGASTRIC PAIN

Subject	Topic	Hours	Methodology of learning	Domain of learning	Learning objectives
Surgery	Dysphagia	1	Interactive Lecture	Cognitive	Explain the diagnostic workup and management of a patient with dysphagia.
Medicine	Upper GI bleeding	1	Interactive Lecture	Cognitive	Explain the diagnostic workup and management and complications of a patient with Upper GI bleeding
			SGD	Psychomotor	Take history and perform a physical examination of a patient with an upper GI bleed.
			SGD	Psychomotor	Observe upper GI endoscopy.
			SGD	Psychomotor	Observe NG tube insertion.
Pediatrics	Vomiting	1	Interactive Lecture	Cognitive	Explain the diagnostic and therapeutic approach to a neonate and infant with persistent vomiting.
Gynaecology	Hyperemesis gravidarum	2	SGD	Cognitive	Discuss the management of a patient with vomiting of pregnancy.
		2	Role play	Affective	Counsel a patient with hyperemesis gravidarum.

#### THEME-2: YELLOW DISCOLORATION OF THE SCLERA

Subject	Topic	Hours	Methodology of learning	Domain of learning	Learning objectives
Medicine	Investigations of liver diseases	1	Interactive Lecture	Cognitive	Elaborate on the investigations used for the diagnosis of hepatobiliary disorders and their interpretations.
			SGD	Psychomotor	Take history and perform physical examination of a patient with liver cirrhosis.
			SGD	Psychomotor	Observe Ascitic fluid paracentesis.
			SGD	Psychomotor	Interpret Ascitic fluid report.
			Role play	Affective	Counsel a patient with Liver cirrhosis due to Hepatitis B/C.
	Acute fulminant hepatitis and acute liver failure	1	Interactive Lecture	Cognitive	Discuss the diagnostic approach and management of a patient with suspected acute fulminant hepatitis/acute liver failure.

	Hepatic encephalopathy		Interactive Lecture	Cognitive	Explain the grading system, etiology, diagnostic approach, management, and prevention of hepatic encephalopathy.
			SGD	Psychomotor	Elicit Asterixis/ hepatic flap.
<b>Surgery</b>	Obstructive	1	Interactive Lecture	Cognitive	Discuss the diagnostic approach and management of a
	Jaundice				patient with suspected obstructive jaundice.
		2	Role play	Affective	counsel a standardized patient with newly diagnosed Carcinoma head of the Pancreas.
<b>Pediatrics</b>	Hyperbilirubinemias	1	Interactive Lecture	Cognitive	Discuss the diagnostic approach and management of a neonate and infant with jaundice.
			SGD	Psychomotor	Take history and perform physical examination of a child with jaundice.
			Role play	Affective	Counsel a child and his parents with Gilbert syndrome.

### THEME-3: ABDOMINAL PAIN AND DIARRHEA

Subject	Topic	Hours	Methodology of learning	Domain of learning	Learning objectives
<b>Surgery</b>	Acute appendicitis	1	Interactive Lecture	Cognitive	Discuss the diagnostic approach and management of a patient with pain in the right iliac fossa due to suspected appendicitis.
	Pain abdomen	1	Interactive Lecture	Cognitive	Discuss the diagnostic approach and management of a patient with pain in the abdomen of acute onset and chronic onset.
		2	SGD	Psychomotor	Illicit signs of acute appendicitis in a child.
		1	Role play	Affective	Counsel the parents of a child with acute appendicitis
	Intestinal obstruction	1	Interactive Lecture	Cognitive	Discuss the etiology, diagnostic approach, and management of a patient with suspected intestinal obstruction.
	Intestinal perforation	1	Interactive Lecture	Cognitive	Discuss the etiology, diagnostic approach, and management of a patient with suspected intestinal perforation/peritonitis.
	Hernias	1	Interactive Lecture	Cognitive	Discuss the etiology, anatomical concepts, management, and complications of a patient with inguinal hernias .
			SGD	Psychomotor	Perform trans illumination test for inguinal hernias.
<b>Pediatrics</b>	Malabsorption	1	Interactive Lecture	Cognitive	Explain the diagnostic workup and management of a patient with Malabsorption due to celiac disease.
			Role play	Affective	Counsel a child and his/her parents regarding dietary advice regarding celiac disease

	Acute diarrhea	1	Interactive Lecture	Cognitive	Explain the diagnostic workup and management of a patient acute watery diarrhea
			SGD	Psychomotor	Assess the state of hydration in a child with acute diarrhea
	Chronic diarrhea	1	Interactive Lecture	Cognitive	Explain the diagnostic workup and management of a patient with chronic diarrhea.
<b>Family medicine/ Medicine</b>	Approach to a patient with Abdominal Pain in a primary health care	1	Interactive Lecture	Cognitive	Explain the approach, differential diagnosis, investigations, initial management, and indications for referral of a patient with Abdominal Pain in a primary health care setting.

#### THEME-4: CONSTIPATION AND BLEEDING PER RECTUM

Subject	Topic	Hours	Methodology Of learning	Domain of learning	Learning objectives
<b>Medicine</b>	Approach to a patient bleeding Per rectum	1	Interactive Lecture	Cognitive	Discuss the diagnostic workup and management approach for a patient with bleeding per rectum.
<b>Surgery</b>	Constipation	1	Interactive Lecture	Cognitive	Discuss the diagnostic workup and management approach for a patient with constipation
	Ulcerative colitis	1	Interactive Lecture	Cognitive	Discuss the approach to the management of a patient with ulcerative colitis, its short and long-term complications, and the role of surveillance colonoscopies in the prevention of colorectal malignancies.
	Crohn's Disease	1	Interactive Lecture	Cognitive	Discuss the approach to the management of a patient with Crohn's disease, its short and long-term complications, and extra intestinal manifestations.
	Colorectal cancer	1	Interactive Lecture	Cognitive	Discuss the approach to the management of a patient with suspected colorectal cancer and its staging
<b>Pediatrics surgery</b>	Hirschsprung's disease	1	Interactive Lecture	Cognitive	Explain the etiology, clinical features, investigations, treatment of a child with Hirschsprung's disease.

#### CLINICAL SCIENCES SUBJECTS

#### GIT AND LIVER – IV MODULE

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>ANAESTHESIA</b>	Understand the different types of available blood products	1	Lectures

	Fluid and Transfusion Therapy	Understand the difference between cross matching and screening blood	1	Lectures
		Understand the hemoglobin level at which patients should be transfused	1	Lectures
		Understand the etiology and treatment of transfusion reactions.	1	Lectures
2.	<b>CRITICAL CARE</b>	Gastrointestinal motility in the critically ill	1	Lectures
		Stress ulcer syndrome	1	Lectures
		Fulminant colitis & toxic megacolon	1	Lectures
	Gastroenterology	Severe and complicated biliary tract disease	1	Lectures

## CLINICAL ROTATION SCHEDULE

### MORNING CLINICAL ROTATIONS

Duration	9 weeks		11 weeks		8 weeks	8 weeks
	6 weeks	3wks	8 weeks	3 weeks		
Disciplines	Medicine	Medicine & Allied	Surgery	Surgery & Allied	Gynae/Obs	Paeds
Total hours*	78	39	104	39	104	104

\* 2.6 clinical teaching hours per day

### EVENING CLINICAL ROTATIONS

Duration	6 weeks		14 weeks		8 weeks	8 weeks
	3 weeks	3wks	11 weeks	3 weeks		
Disciplines	Medicine	Medicine & Allied	Surgery	Surgery & Allied	Gynae/Obs	Paeds
Total hours*	45	45	165	45	120	120

\* 3 clinical teaching hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

## TEACHING HOURS ALLOCATION

There will be 39 hours allotted in total. The hours shall be divided into 4 different themes. The necessity for students to set aside more time for self-directed learning and clinical learning is emphasized, although at the expense of repetition. We anticipate that the students will be well-versed in this significant module. This module covers a number of common and significant subjects.

S. No	Subject	Hours
1	Surgery	16
2	Medicine	5



3	Pediatrics	6
4	Gynaecology	4
5	Anesthesia	4
6	Critical Care	4
	<b>Total hours</b>	<b>39</b>

## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

1. Student must report to examination hall/venue, in time for smooth conduction of the exams.
2. No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
3. No students will be allowed to sit in exam without College ID Card, and Lab Coat
4. Students must sit according to their roll numbers mentioned on the seats.
5. Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
6. Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
7. Students must not possess any written material or communicate with their fellow students
8. Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
9. **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### ASSESSMENT

#### Internal: Total 10% (20 marks)

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.

- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

#### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

### **METHODS OF ASSESSMENT**

#### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

#### **Short Essay Questions (SEQs):**

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

#### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her

thoughts

## ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## WEEKLY TESTS

- The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.
- The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.
- It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.
- Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

## POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD
- Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class
- PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable

## ASSESSMENT BLUEPRINT

### GIT AND LIVER-IV MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

## RECOMMENDED BOOKS

<i>SUBJECT</i>	<i>RESOURCES</i>
<b>PAEDIATRICS</b>	<ul style="list-style-type: none"> <li>• Nelson textbook of pediatrics</li> <li>• Textbook of Pediatrics, Pakistan Pediatrics Association</li> <li>• Basis of Pediatrics, Pervez Akbar khan, Ninth edition</li> <li>• Current pediatrics</li> <li>• OP Ghai Essential of Pediatrics Textbook</li> </ul>
<b>SURGERY</b>	<ul style="list-style-type: none"> <li>• Bailey &amp; Love's Short Practice of Surgery 27th edition (a new edition is expected shortly. Keep a look out for the new one</li> <li>• Demonstration of Physical Signs in Clinical Surgery, by Hamilton Bailey. 19th edition or newer. Text Book</li> <li>• Browse's Introduction to Symptoms and Signs of Surgical Disease. Text Book</li> <li>• Ackerman's Surgical Pathology. Latest Edition</li> </ul>
<b>GENERAL MEDICINE</b>	<ul style="list-style-type: none"> <li>• Hutchison's Clinical Methods, 23<sup>rd</sup> Edition</li> <li>• MacLeod's clinical examination 13th edition</li> <li>• Davidson's Principles and Practice of Medicine</li> <li>• Kumar and Clark's Clinical Medicine</li> <li>• HCAI guidelines CDC</li> </ul>



**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you? Y  N
- B. The course contents met with your expectations  
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned  
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with  
l. Too few examples 5. Adequate examples
- E. The level of the course was  
l. Too low 5. Too high
- F. The course contents compared with your expectations  
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices  
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?  
l. Not at all 5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand  
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used  
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate  
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful  
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes  No

F. Please give overall rating of the course

90% - 100% (    )

80% - 90% (    )

70% - 80% (    )

60% - 70% (    )

50% - 60% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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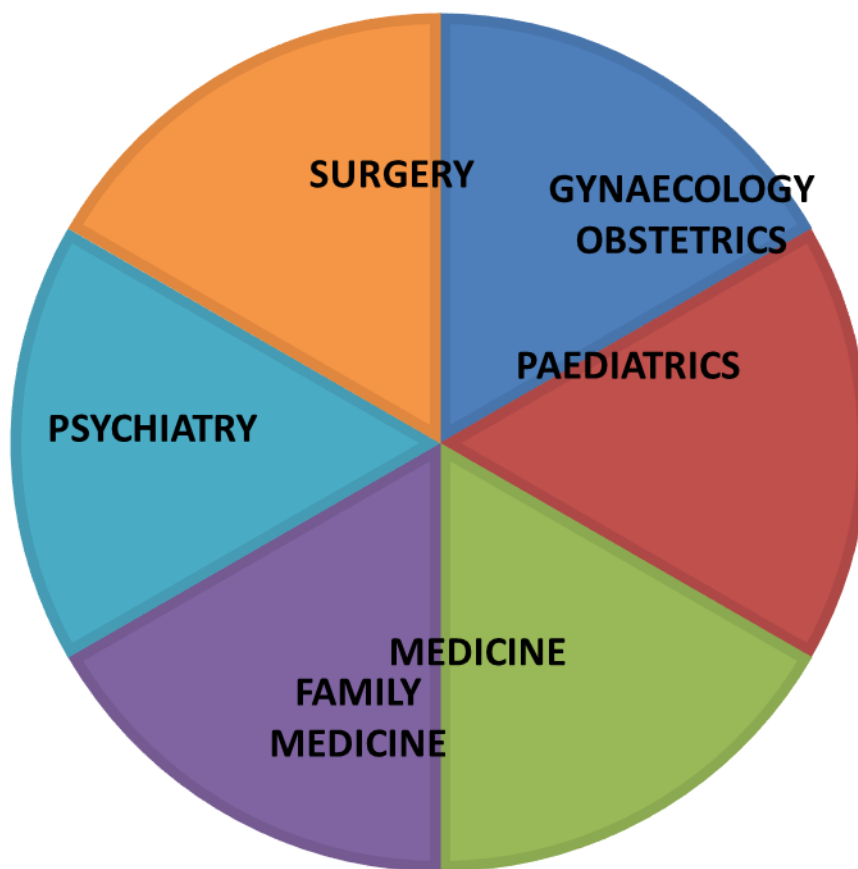


## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Foundation-II, Blood-III, Cardiorespiratory -III, Endocrine and Reproduction-IV, Renal-III, Git and Liver-IV, Multisystem, Musculoskeletal-II and Neuroscience -III modules which links basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF ENDOCRINE AND REPRODUCTION-IV MODULE



## MODULE OVERVIEW

### ENDOCRINE AND REPRODUCTION - IV MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Final professional
<b>Duration</b>	4 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

### ENDOCRINE AND REPRODUCTION - IV MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### Module objectives:

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

#### Achievement of objectives:

- Focuses on information pertaining to examination policy, rules and regulations.

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations

- Skills session
- Self-Directed Study

- **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

Endocrine disorders, such as diabetes and thyroid dysfunction, and reproductive conditions, including infertility and pregnancy-related complications, are prevalent worldwide. The increasing global burden of these diseases underscores the importance of healthcare professionals possessing comprehensive knowledge to address the rising incidence and impact on public health. Disorders of the endocrine and

reproductive systems manifest in a myriad of clinical presentations, ranging from subtle hormonal imbalances to life-threatening emergencies. Equipping medical professionals with the skills to recognize, diagnose, and manage these conditions is crucial for effective patient care, particularly in emergency and outpatient settings. A comprehensive understanding of these conditions is essential for healthcare practitioners to provide age-appropriate care, whether dealing with pediatric endocrinopathies, reproductive health in adults, or hormonal changes in the elderly.

### **RATIONAL**

Management of endocrine and reproductive diseases often requires a multidisciplinary approach, involving endocrinologists, gynecologists, obstetricians, surgeons, and other specialists. Medical students need a foundational understanding of these conditions to collaborate effectively within healthcare teams and provide holistic care to patients. In essence, the rationale for studying endocrine and reproductive diseases and their management lies in the fundamental impact these conditions have on individual well-being, public health, and the broader healthcare landscape. By delving into these intricacies, medical professionals are better equipped to navigate the complexities of patient care and contribute to advancements in the field.

## **LEARNING OBJECTIVES**

### **Knowledge / Cognitive Domain**

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

- Discuss the clinical conditions resulting in Tall/short stature and its management.
- Discuss the clinical conditions causing Excessive thirst and Urination and its management.
- Discuss the diagnostic approach, management, and complications of a patient with suspected hyperthyroidism.
- Explain the diagnostic approach, management, and complications of multinodular goiter.
- Explain the diagnostic approach and management of a child with suspected Cretinism
- Explain the diagnosis, management and complications of a diabetic patient presenting with hyperglycemias and hypoglycemias.
- Discuss the clinical conditions resulting in Infertility and its management.
- Discuss pathophysiology of Pregnancy, its Management, and complications.
- Discuss the development of fetus, its growth, and complications.
- Discuss the pathophysiology of Obstetrics emergencies, its Management, and complications.

### **Skills / Psychomotor Domain:**

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

- Demonstrate the ability to perform the disease specific relevant examination
- Respond to common medical emergencies
- Palpate the thyroid gland to assess for size, consistency, and the presence of nodules.
- Check for the presence of cervical lymphadenopathy.
- Take history and Assess the patient's overall body composition and distribution of fat such as in Cushing's syndrome or hypothyroidism.
- Take history and perform physical examination of a child with hypothyroidism/cretinism.
- Identify the red flags in a diabetic patient and appropriately refer to specialty care when required.
- Counsel a newly diagnosed patient with Diabetes Melitus.
- Examine and stage a diabetic foot ulcer.

- Perform urine examination via dipstick technique for pregnancy, glucose, urine, and bacteria.
- Perform a Clinical breast examination by all techniques including “radial wagon wheel” and “spoke” method.

**Attitude / Affective Domain:**

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

- Respect oneself and one's peers, both when providing and receiving comments.
- To show patients compassion and understanding.
- Develop your ability to communicate while keeping a sense of duty to your patients.
- Showcase appropriate laboratory procedures.
- Relate to patient and careers vulnerability
- Demonstrate ethical self-management
- Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
- Counsel a morbidly obese patient regarding the complications and lifestyle management.

**Outcomes of Endocrine and Reproduction-IV Module**

- Knowledgeable
- Skillful
- Community Health Promoter
- Problem-solver
- Professional
- Researcher
- Leader and Role Model

**THEMES FOR ENDOCRINE AND REPRODUCTION-IV MODULE**

S.NO	Themes
1	Tall/Short Stature
2	Neck Swelling and Muscle cramps
3	Excessive Thirst & Urination
4	Moon Face
5	Pregnancy and Breast Lump

**SPECIFIC LEARNING OBJECTIVES THEME WISE**

THEME-1: TALL/SHORT STATURE					
Subject	Topic	Topic Objectives	Teaching Hours	Mode of Teaching	Assessment Tools
Medicine	Anterior gland	Discuss the diagnostic approach and management of a patient with tall stature.	1 hour	LGD	MCQ, SEQ
	Posterior pituitary gland	Discuss the approach consideration of a patient with polydipsia		LGD	MCQ, SEQ

		Explain the diagnostic approach and treatment of a patient with Diabetes insipidus.		CBD	MCQ, SEQ
<b>Pediatrics</b>	Short stature	Discuss the diagnostic approach and management of a child with short stature.	1 hour	SGD	MCQ, SEQ

### THEME-2: NECK SWELLING AND MUSCLE CRAMPS

<b>Medicine</b>	Thyroid gland disorders	Discuss the diagnostic approach, management, and complications of a patient with suspected hyperthyroidism.	1 hour	SGD	MCQ, SEQ
		Discuss the diagnostic approach, management, and complications of a patient with suspected hyperthyroidism.			
	Parathyroid gland	Discuss the diagnostic approach, management, and complications of a patient with tetany.			
		Take history and perform physical examination of a patient with goitre.			
		Counsel a patient with goitre.		Skill Session	MCQ OSCE
<b>Surgery</b>	Thyroid nodule	Explain the diagnostic approach, management, and complications of multinodular goitre.	1 hour	LGD	MCQ, SEQ
		Explain the diagnostic approach, and management of a patient with solitary thyroid nodule.			
		Perform thyroid examination			
<b>Pediatrics</b>	Thyroid disorders	Explain the neonatal screening for hypothyroidism	1 hour	Lecture	MCQ OSCE
		Explain the diagnostic approach and management of a child with suspected Cretinism			
		Discuss the complications of Cretinism			
		Take history and perform physical examination of a child with hypothyroidism/cretinism.			

### THEME-3: EXCESSIVE THIRST AND URINATION

<b>Medicine</b>	Diabetes Mellitus	Explain the diagnostic approach, screening and management of a patient with suspected Diabetes Mellitus.	1 hour	SGD	MCQ OSCE
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		Elaborate the pharmacological and non-pharmacological management strategies in the management of type-1 and type- 2 DM.			
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		Elaborate the acute and chronic complications of DM and their management			
		Discuss the diagnostic approach, management, and complications of hyperglycaemic syndromes in Diabetic patients.			
		Explain the diagnosis, management and complications of a diabetic patient presenting with hypoglycaemias.			
		Take history and perform physical examination of a patient with Type 2 DM.		Skill session	MCQ OSCE
		Counsel a newly diagnosed patient with DM.			
<b>Family medicine</b>	Diabetes mellitus-general practice management	Explain the management strategies of a diabetic patient in general practice including the psychosocial impact of disease on patient and their families.	1 hour	SGD	MCQ, SEQ
		Describe the strategies for prevention of diabetes mellitus and its complications.			
		Identify the red flags in a diabetic patient and appropriately refer to speciality care when required.			
<b>Surgery</b>	Diabetic foot ulcers	Discuss the classification, investigations, management, and complications of diabetic foot ulcers	1 hour	LGD	MCQ, SEQ
		Examine and stage a diabetic foot ulcer	2 hours	Skill session	MCQ OSCE
<b>Nephrology</b>	Diabetic nephropathy	Explain the pathogenesis, clinical features, complications, short and long-term management of Diabetic Nephropathy	1 hour	LGD	MCQ
<b>Pediatrics</b>	Type-1 DM	Explain the diagnostic approach, screening, and management of a Child with suspected Type-1 Diabetes Mellitus	1 hour	Lecture	MCQ OSCE
		Take history and perform physical examination of a patient with Type 2 DM			
		Counsel a newly diagnosed patient and parents with type 1 DM			

THEME-4: MOON FACE AND OBESITY					
Medicine	Cushing's syndrome	Discuss the diagnosis, management, and complications of a patient with suspected Cushing's syndrome.	1 hour	Lecture	MCQ OSCE
		Explain the Dexamethasone suppression test in terms of its indications and interpretation.			
		Explain the protocol of steroids withdrawal in a patient with steroids abuse.			
		Take history and perform physical examination of a patient with Cushing's syndrome.			
Medicine	Addison's disease	Discuss the diagnosis, management, and complications of a patient with suspected Addison's disease (both primary and secondary).	1 hour	LGD	MCQ
		Explain the concept of steroids replacement in terms of its indications and precautions.			
Medicine	Obesity	Discuss the etiology, complications, medical and surgical approaches to the management of obesity.	1 hour	Lecture	MCQ OSCE
		Take history and perform physical examination			
		of a patient with morbid obesity.			

THEME-5: PREGNANCY AND BREAST LUMP					
Gynaecology and Obstetrics	Obstetrics history and examination	Take an obstetric history and perform abdominal, pelvic, and obstetric examination of a pregnant lady.	1 hour	Skills sessions	MCQ OSCE
		Measure and interpret blood pressure in a pregnant lady			
		Examine the breast of a full-term pregnant female			



		Perform urine examination via dipstick technique for pregnancy, glucose, urine, and bacteria	1 hour		
	Antenatal care	Define and explain the aims of antenatal care	2 hour	SGD	MCQ, SEQ
		Discuss the components of antenatal care			
		Explain different types of screening tests during antenatal care			
		Discuss the maternal and neonatal complications associated with increased BMI in pregnancy			
		Identify high risk women of developing pre-eclampsia, preterm birth, fetal growth restriction, and vitamin D deficiency			
		Perform and record proper antenatal check-ups			
		Counsel a pregnant lady about the complications of pregnancy			
	Assessment fetal wellbeing	Explain the methods of assessment of fetal wellbeing	2 hour	SGD	MCQ, SEQ
		Explain the types and diagnosis of fetal abnormalities		LGD	MCQ, SEQ
	Prenatal diagnosis	Explain the reasons, classification, and methods of prenatal diagnosis	1 hour	SGD	MCQ, SEQ
	Antenatal maternal and obstetric complications	Discuss musculoskeletal, gastroenterological, and hematological problems associated with pregnancy.	2 hour	CBD	MCQ, SEQ
		Discuss the risk factors and management of venous thromboembolism in pregnancy.			
		Explain the causes, complications, and management of polyhydramnios and oligohydramnios.			
		Discuss the etiology, complications and management of fetal malpresentations.			
		Explain the approach and management of a			
		pregnant lady with antepartum bleeding.			
		Discuss the etiology, prevalence, management, and prevention of Rh isoimmunization.			
	Preterm labor PROM PPROM	Discuss the etiology, complications, and management of preterm labor.	2 hour	SGD	MCQ, SEQ
<b>Family medicine/ Obstetrics</b>	Hypertensive disorders in pregnancy	Classify hypertension in pregnancy and disorders of hypertension in pregnancy.	1 hour	LGD	MCQ, SEQ

		Discuss the diagnostic approach, management, complications and prevention of Pre-eclampsia and Eclampsia	1 hour	LGD	MCQ, SEQ
<b>Family medicine/ Obstetrics</b>	Diabetes mellitus and pregnancy	Explain the management of a pregnant lady with gestational DM and overt DM	1 hour	CBD	MCQ
<b>Obstetrics</b>	Perinatal infections	Classify prenatal infections.	1 hour	LGD	MCQ
		Explain the screening and preventive strategies of common perinatal infections.	1 hour	LGD	MCQ
	Labour	Explain the management of normal labour at different stages	2 hours	SGD	MCQ OSCE
		Explain the management of abnormal labour at different stages			
		Discuss the indications and complications of analgesia and anaesthesia in labour.			
		Discuss the management of labour at special circumstances like uterine scar, fetal malposition's, and multiple pregnancies,			
		Explain the types, indications, and complications of operative deliveries.			
		Discuss the indications and complications of Caesarian section			
		Observe normal labour and assisted deliveries.			
	Management of labor in special circumstances	Discuss the management of labor at special circumstances like uterine scar, fetal malpositions, fetal death, multiple pregnancies, and post-date pregnancies	2 hour	SGD	MCQ OSCE
		Explain the types, indications, and complications of operative deliveries.			
		Discuss the indications and complications of Caesarian section.			
		Observe normal labor and assisted deliveries.			
	Obstetric emergencies	Classify obstetric emergencies. Discuss the management of sepsis in pregnancy	1 hour	Lecture	MCQ OSCE
		Explain the management and complications of placental diseases in a pregnant woman.	1 hour	Lecture	MCQ OSCE
		Observe a normal delivery	2 hour	Skills session	MCQ OSCE
	Postpartum bleeding	Discuss the etiology, diagnostic and management approach to a patient with postpartum hemorrhage.	2 hour	SGD	MCQ

	Puerperium	Classify puerperal disorders and their management			
<b>Psychiatry</b>	Psychiatric disorders	Classify different psychiatric disorders in pregnancy and puerperium.	1 hour	Lecture	MCQ OSCE
	Pregnancy and puerperium	Discuss the management of puerperal psychosis and depression			
		Counsel a patient and her family with postpartum psychosis/depression.			
<b>Pediatrics</b>	The neonate	Discuss the types and management of common problems of preterm and term babies	1 hour	Lecture	MCQ OSCE
		Discuss the principles of neonatal care			
		Observe the care of a neonate in nursery			
		Take history and perform physical examination of a neonate			
<b>Surgery</b>	Breast diseases	Discuss approach to a patient with breast lump emphasizing on diagnostic work-up of different breast pathologies (complexity of benign and malignant breast diseases) including imaging and procedures.	1 hour		
		Discuss the diagnostic approach and management of a patient with nipple discharge.	1 hour	Lecture	MCQ OSCE
		Perform a Clinical breast examination by all techniques including “radial wagon wheel” and “spoke” method	1 hour		
		Counsel a patient with breast cancer about the diagnosis, management, and screening of her family members.	1 hour		
<b>Obstetrics</b>	Ectopic Pregnancy	Define ectopic pregnancy. Enumerate the risk factors of ectopic pregnancy. Recognize the clinical presentation for ruptured ectopic pregnancy. Identify the role of ultrasound and serum beta HCG in detecting un ruptured ectopic pregnancy. Discuss the management options for ruptured as well as un ruptured pregnancy.	2 hours	SGD	MCQ, SEQ
	Abortion and its Management	Define Abortion Classify its different types on basis of signs and symptoms Distinguish between different types of abortion List the causes of recurrent abortion Evaluate relevant investigations and	2 hours	SGD	MCQ, SEQ

		management plan. Discuss post abortal care.			
	Multiple Gestation	Define multiple pregnancy. Classify types of multiple pregnancy. Enumerate the risk factors of multiple pregnancy. Describe the diagnostic evaluation for multiple pregnancy. Discuss the clinical manifestation Enlist the complications of multiple	2 hours	SGD	MCQ, SEQ
	Malpresentation	Define malpresentation. Classify the types of breech at term. Enumerate the risk factors of breech presentation at term. Discuss the significance of external cephalic version at term. Enlist the complications of breech vaginal delivery at term	2 hours	SGD	MCQ, SEQ
	Prenatal Screening	Define prenatal screening. Enlist serum markers for prenatal Diagnosis Describe role of ultrasound to screen chromosomal and structural anomalies. Describe CVS and Amniocentesis as prenatal diagnostic test	2 hours	SGD	MCQ, SEQ
	Postpartum care	Define Post Partum Care. Recognize the components of Post Partum Care Identify the common problems during Post Partum Care (Sepsis, Anaemia, Post Partum Haemorrhage). Counsel for breast feeding and contraception.	2 hours	SGD	MCQ, SEQ
	Ante Partum Hemorrhage	Define Ante Partum Hemorrhage. Classify Ante Partum Hemorrhage. List causes of Ante Partum Hemorrhage. Enumerate the risk factors of Abruptio Placenta Suggest the appropriate investigations to exclude any complication. Formulate the management plan of Abruptio Placenta.	2 hours	SGD	MCQ, SEQ

	Pregnancy Induced Hypertension Eclampsia	Define pregnancy induced hypertension. Classify PIH according to severity. Discuss the pathogenesis of PIH. Recognize the clinical manifestation pre eclampsia and eclampsia. Identify the complications due to PIH (Eclampsia and HELLP syndrome) Suggest the appropriate investigations to establish the diagnosis. Anticipate the complications of PIH and eclampsia. Formulate management plan for fetomaternal surveillance during antenatal period, intrapartum period and postpartum period. Discuss protocol for management of eclampsia.	2 hours	SGD	MCQ, SEQ
	Thyroid Disorder in Pregnancy	Explain the physiological role of Thyroid hormone in fetal development during pregnancy. Classify the disorders according to the manifestations of clinical features. Describe the clinical significance of screening pregnant women for thyroid disorders in first trimester. Discuss the effects of hypothyroidism and hyperthyroidism during pregnancy	1 hour	Lecture	MCQ, SEQ
<b>RADIOLOGY</b>	Ultrasound for fetal wellbieng	Describe the indications for antenatal ultrasounds Discuss the components during fetal ultrasound chekups (fetal position, placental position, any fetal abnormalities, number of fetuses, fluid volumes)	2 hour	Lecture	MCQ, SEQ

### CLINICAL ROTATION

S. No	Learning Objectives	Learning Modalities
1.	Obtain History Perform Clinical examination	Patient Demo
2.	Observe NVD	Clinical rotation
3.	Observe surgical procedures	Clinical rotation
4.	Measure and interpret blood pressure	Patient Demo

5.	Examine the breast of a full- term pregnant female	Patient Demo
6.	Perform and record proper antenatal check-ups	Clinical rotation
7.	Observe the care of a neonate in nursery	Patient Demo
8.	Take history and perform physical examination of a neonate	Patient Demo

## CLINICAL SCIENCES SUBJECTS

### ENDOCRINE AND REPRODUCTION – IV MODULE

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>CRITICAL CARE</b>  Pregnancy	Post-partum hemorrhage Septic abortion Eclampsia & HELLP syndrome Management of obstetrical patients in a post-operative setting	1 1 1 1	Lecture Lecture Lecture Lecture
2.	<b>FAMILY MEDICINE</b>  Women's health	Menstrual Disorders Menopause Breasts Lumps Contraception LUTS	1 1 1 1 1	Lecture Lecture Lecture Lecture Lecture

## CLINICAL ROTATION SCHEDULE

### MORNING CLINICAL ROTATIONS

Duration	9 weeks		11 weeks		8 weeks	8 weeks
	6 weeks	3wks	8 weeks	3 weeks		
Disciplines	Medicine	Medicine & Allied	Surgery	Surgery & Allied	Gynae/Obs	Paeds
Total hours*	78	39	104	39	104	104

\* 2.6 clinical teaching hours per day

### EVENING CLINICAL ROTATIONS

Duration	6 weeks		14 weeks		8 weeks	8 weeks
	3 weeks	3wks	11 weeks	3 weeks		
Disciplines	Medicine	Medicine & Allied	Surgery	Surgery & Allied	Gynae/Obs	Paeds
Total hours*	45	45	165	45	120	120

\* 3 clinical teaching hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

### TEACHING HOURS ALLOCATION

There will be 74 hours allotted in total. The hours shall be divided into 5 different themes. The necessity for students to set aside more time for self-directed learning and clinical learning is emphasized, although at the expense of repetition. We anticipate that the students will be well-versed in this significant module. This module covers a number of common and significant subjects.

S. No	Subject	Hours
1	Gynae / Obstetrics	40
2	Pediatrics	4
3	Medicine	7
4	Psychiatry	1
5	Family Medicine	9
6	Surgery	7
7	Radiology	2
8	Critical Care	4
	<b>Total hours</b>	<b>74</b>

### EXAMINATION AND METHODS OF ASSESSMENT

#### 11.1 EXAMINATION RULES AND REGULATIONS

1. Student must report to examination hall/venue, in time for smooth conduction of the exams.
2. No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
3. No students will be allowed to sit in exam without College ID Card, and Lab Coat
4. Students must sit according to their roll numbers mentioned on the seats.
5. Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) – Sharing is prohibited
6. Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
7. Students must not possess any written material or communicate with their fellow students
8. Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
9. **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

## ASSESSMENT

### **Internal: Total 10% (20 marks)**

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

## METHODS OF ASSESSMENT

### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

### **Short Essay Questions (SEQs):**



- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

### **ASSIGNMENTS**

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

### **WEEKLY TESTS**

- The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the

class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

- The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.
- It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.
- Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

### POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD
- Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class
- PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable

## ASSESSMENT BLUEPRINT

### ENDOCRINE AND REPRODUCTION - IV MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

## RECOMMENDED BOOKS

<i>SUBJECT</i>	<i>RESOURCES</i>
<b>PAEDIATRICS</b>	<ul style="list-style-type: none"> <li>• Nelson textbook of pediatrics</li> <li>• Textbook of Pediatrics, Pakistan Pediatrics Association</li> <li>• Basis of Pediatrics, Pervez Akbar khan, Ninth edition</li> <li>• Current pediatrics</li> <li>• OP Ghai Essential of Pediatrics Textbook</li> </ul>
<b>SURGERY</b>	<ul style="list-style-type: none"> <li>• Bailey &amp; Love's Short Practice of Surgery 27th edition (a new edition is expected shortly. Keep a look out for the new one</li> <li>• Demonstration of Physical Signs in Clinical Surgery, by Hamilton Bailey. 19th edition or newer. Text Book</li> <li>• Browse's Introduction to Symptoms and Signs of Surgical Disease. Text Book</li> <li>• Ackerman's Surgical Pathology. Latest Edition</li> </ul>

<p><b>GENERAL MEDICINE</b></p>	<ul style="list-style-type: none"> <li>• Hutchison's Clinical Methods, 23<sup>rd</sup> Edition</li> <li>• MacLeod's clinical examination 13th edition</li> <li>• Davidson's Principles and Practice of Medicine</li> <li>• Kumar and Clark's Clinical Medicine</li> <li>• HCAI guidelines CDC</li> </ul>
<p><b>GYNAECOLOGY AND OBSTETRICS</b></p>	<ol style="list-style-type: none"> <li>1. Obstetrics by Ten Teachers 20<sup>th</sup> Edition</li> <li>2. Gynaecology by Ten Teachers 23<sup>rd</sup> Edition</li> </ol>



**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you? Y  N
- B. The course contents met with your expectations  
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned  
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with  
l. Too few examples 5. Adequate examples
- E. The level of the course was  
l. Too low 5. Too high
- F. The course contents compared with your expectations  
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices  
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?  
l. Not at all 5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand  
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used  
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate  
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful  
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes  No

F. Please give overall rating of the course

90% - 100% (    )

60% - 70% (    )

80% - 90% (    )

50% - 60% (    )

70% - 80% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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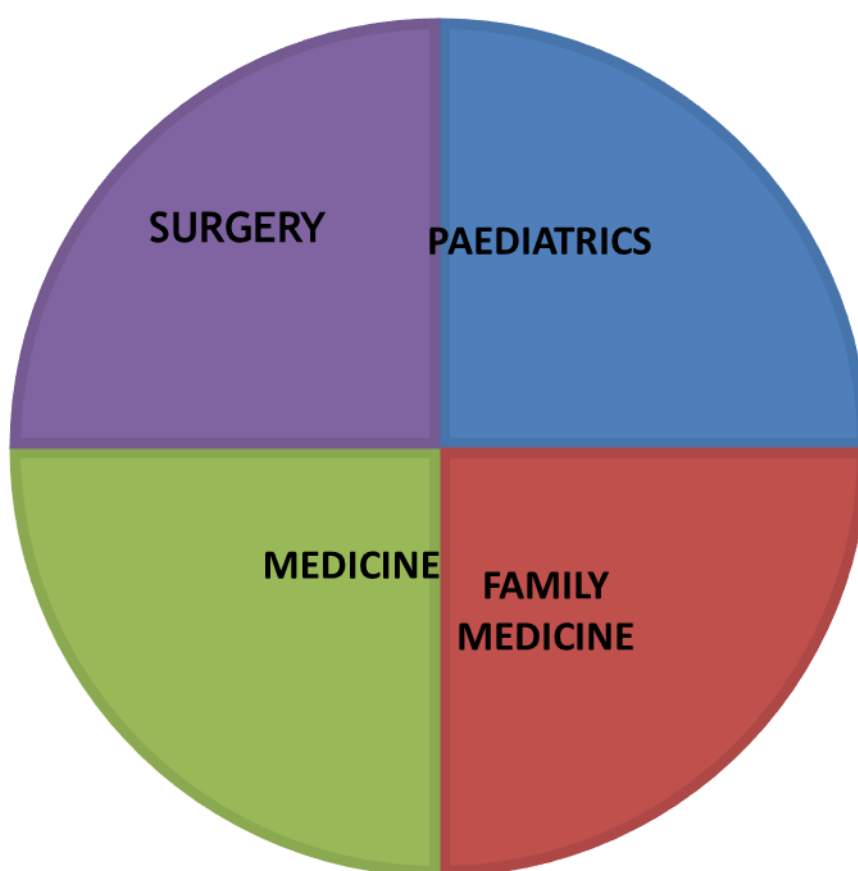


## CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Foundation-II, Blood-III, Cardiorespiratory -III, Endocrine and Reproduction-IV, Renal-III, Git and Liver-IV, Multisystem, Musculoskeletal-II and Neuroscience -III modules which links basic science knowledge to clinical problems.

### INTEGRATING DISCIPLINES OF CARDIORESPIRATORY-III MODULE



### . MODULE OVERVIEW

#### CARDIORESPIRATORY - III MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Final professional
<b>Duration</b>	4 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies</b>	To develop medical professionals who are well - versed, adept, and have the



<b>covered</b>	right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning , Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

### CARDIORESPIRATORY - III MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### Module objectives:

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

#### Achievement of objectives:

- Focuses on information pertaining to examination policy, rules and regulations.

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
  - Small Group Discussion
  - Case- Based Learning (CBL)
  - Clinical Experiences
  - Clinical Rotations
  - Skills session
  - Self-Directed Study
- **INTERACTIVE LECTURES:**  
Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

Welcome to the Cardiorespiratory Module. Students will develop a deep understanding of cardio-respiratory pathophysiology, knowledge of the mechanisms that maintain homeostasis in these systems, and the ability to relate cardiovascular and respiratory diseases to underlying pathophysiological pathways. Students will identify key cardio-respiratory diseases and create a 'health campaign', including texts targeting the broader community, healthcare consumers (i.e. patients and carers), and healthcare professionals - with a view to summarizing and broadcasting a holistic analysis of the impact of cardio-respiratory disease on individuals, as well as local and global communities. Students will also critically consider experimental design and interpretation of scientific and medical evidence in cardio-respiratory contexts

## RATIONAL

A cardiorespiratory module is designed to provide students with a comprehensive understanding of the cardiovascular and respiratory systems. This module plays a crucial role in shaping future physicians who are adept at diagnosing, treating, and managing conditions related to the heart and lungs. This module ensures that medical students gain a robust foundation in understanding, diagnosing, and managing conditions related to the cardiovascular and respiratory systems. This knowledge is essential for their future roles as competent and compassionate physicians

## LEARNING OBJECTIVES

### Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Discuss the management of a patient with chest pain
2. Explain the management of patients with different types of ischemic heart diseases
3. Explain the management of patients with different types of arrhythmias
4. Discuss the management of traumatic chest injuries as a primary care physician
5. Explain the management of a patient with heart failure
6. Explain the management of patients with different types of Obstructive lung diseases
7. Discuss the management of pleural and pericardial diseases
8. Explain the diagnostic criteria and management of Bacterial endocarditis and Rheumatic fever and their complications
9. Explain the clinical features and management of cyanotic and acyanotic congenital and Valvular heart diseases
10. Discuss the management of cardiomyopathies and myocarditis
11. Explain the diagnostic workup and management of patients with different types of Pneumonias
12. Explain the management approach of a patient with Hypertension
13. Discuss the diagnostic approach and management of DVT and its prevention

### Skills / Psychomotor Domain:

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

- Demonstrate the ability to perform the disease specific relevant examination
- Respond to common medical emergencies
- Master the skill of first aid
- Perform BLS
- Apply the best evidenced practices for local health problems
- Performing comprehensive cardiovascular and respiratory examinations, including inspection, palpation, percussion, and auscultation.
- Development of skills in interpreting heart and lung sounds
- Understanding and interpretation of diagnostic tests such as electrocardiography (ECG), echocardiography, pulmonary function tests, and imaging modalities (X-rays, CT scans, MRI) relevant to cardiology and pulmonology.
- Recognition and management of acute cardiopulmonary emergencies, including myocardial infarction, cardiac arrhythmias, pulmonary embolism, and acute respiratory distress syndrome (ARDS).
- Understanding the collaborative nature of managing cardiopulmonary diseases, involving collaboration with other specialties such as radiology, pathology, and cardiothoracic surgery

### Attitude / Affective Domain:

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

- Respect oneself and one's peers, both when providing and receiving comments.
- To show patients compassion and understanding.
- Develop your ability to communicate while keeping a sense of duty to your patients.
- Showcase appropriate laboratory procedures.
- Relate to patient and caregivers vulnerability
- Demonstrate ethical self-management
- Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.

#### Outcomes of Cardiorespiratory Module

- Knowledgeable
- Skillful
- Community Health Promoter
- Problem-solver
- Professional
- Researcher
- Leader and Role Model

### THEMES FOR CARDIORESPIRATORY-III MODULE

S.NO	Themes	Duration
1	Chest pain and palpitation	1 week
2	Shortness of breath	1 week
3	Fever and cough	1 week
4	Painful legs and hypertension	1 week

### SPECIFIC LEARNING OBJECTIVES THEME WISE

THEME 1: CHEST PAIN AND PALPITATIONS						
Subject	Topic	Hours	Mode of teaching	Learning domain	Learning objectives	Assessment tools
Medicine	Approach to a patient with chest pain	1	LGD	Cognitive	Discuss the diagnostic workup and management approach for a patient with chest pain	MCQ, SEQ
		1	SGD/SDL	Psychomotor	Take history and perform physical examination of patient with chest pain	OSCE, SEQ
	Ischemic	1	LGD	Cognitive	Classify IHD	MCQ, SEQ

	heart diseases			Cognitive	Explain the management approach to a patient with stable angina pectoris	
		1	LGD	Cognitive	Explain the management approach to a patient with unstable angina pectoris	MCQ, SEQ
			LGD	Cognitive	Explain the management approach to a patient with acute MI.	MCQ, SEQ
			LGD	Cognitive	Discuss the risk stratification strategies in post-MI patients	MCQ, SEQ
	Disorders of Rhythm	1	LGD	Cognitive	Classify arrhythmias and heart block and discuss their ECG abnormalities	MCQ, SEQ
			LGD	Cognitive	Explain the diagnostic and management approach to a patient with irregularly irregular pulse	MCQ, SEQ
		1	LGD	Cognitive	Discuss the management approach to a patient with SVT	MCQ, SEQ

			LGD	Cognitive	Discuss the management approach to a patient with Ventricular tachycardia	MCQ, SEQ
			LGD	Cognitive	Explain the management of a patient with different types of heart blocks	MCQ, SEQ
		1	Role play	Affective domain	Counsel a patient with recent onset acute MI	OSCE
Cardiology	Cardiac intervention techniques	1	LGD	Cognitive	Explain the different types, methods, and indications of cardiac interventions in cardiology practices	MCQ, SEQ

Pediatrics	Supra-ventricular tachycardia	1	LGD	Cognitive	Discuss the clinical presentation and the diagnostic workup needed for Supra-ventricular tachycardia in Pediatric patients	MCQ, SEQ
			Role play	Affective domain	Counsel a parent of a neonate, infant and child with Supra-ventricular tachycardia	OSCE
Surgery	Chest trauma Hemothorax	1	LGD	Cognitive	Discuss the diagnostic workup for Chest trauma	MCQ, SEQ
			LGD	Cognitive	Discuss the management options for a patient with Chest trauma	MCQ, SEQ
		2	SGD/SDL	Psychomotor	Perform ABC in a case presenting with chest trauma	OSCE
			SGD/SDL	Psychomotor	Observe chest intubation of a patient presenting with chest trauma	OSCE
Radiology	Chest X-ray (Heart)	1	Lecture	Cognitive	Identify the cardiac diseases in the chest radiograph (cardiomegaly, ventricular hypertrophy)	OSCE

### THEME 2: SHORTNESS OF BREATH

<b>Medicine (CVS)</b>	Congestive cardiac failure	1	LGD	Cognitive	Explain the types, etiology, clinical features, investigations, prognosis, and management of a patient with CCF.	MCQ, SEQ
		1	LGD	Cognitive	Classify cardio-myopathies	MCQ, SEQ
			LGD	Cognitive	Explain the etiology, clinical features, and management of a patient with myocarditis	MCQ, SEQ
	Pericarditis and pericardial effusion	1	LGD	Cognitive	Explain the etiology, clinical features, and management of a patient with pericarditis and pericardial effusion	MCQ, SEQ

<b>Medicine (Respiratory)</b>	Bronchial asthma (Wheezy chest)	1	LGD	Cognitive	Explain the diagnostic and management approach for a patient with chronic wheezy chest	MCQ, SEQ
			LGD	Cognitive	Differentiate between bronchial asthma and cardiac asthma	MCQ, SEQ
	COPD	1	LGD	Cognitive	Explain the diagnostic and management approach for a patient with COPD	MCQ, SEQ
			SGD/SDL	Cognitive	Interpret Pulmonary Function test results	OSCE
			SGD/SDL	Cognitive	Interpret a report of Arterial blood gases	OSCE
	Interstitial lung disease (ILD)	1	LGD	Cognitive	Discuss the types, etiology, clinical and radiological presentation, Investigations, and management of a patient with ILD	MCQ, SEQ
	Pleural effusion	1	LGD	Cognitive	Explain the diagnostic and management strategies in a patient with pleural effusion	MCQ, SEQ
			SGD/SDL	Psychomotor	Assist in pleural fluid aspiration	OSCE
	Pneumothorax	1	LGD	Cognitive	Explain the diagnostic and management strategies in a patient with pneumothorax	MCQ, SEQ
	Pulmonary embolism	1	LGD	Cognitive	Discuss the risk factors diagnostic criteria, complications, and treatment of a patient with suspected	MCQ, SEQ
				pulmonary embolism	MCQ, SEQ	
<b>Pulmonology</b>	Respiratory Failure	1	LGD	Cognitive	Explain the types, etiology, and pathogenesis of Respiratory Failure	MCQ, SEQ
			LGD	Cognitive	Discuss the diagnostic workup and management for Respiratory Failure	MCQ, SEQ

			LGD	Cognitive	Discuss the types, indications, and approaches to Oxygen therapy	MCQ, SEQ
<b>Pediatrics</b>	Acyanotic heart disease	1	LGD	Cognitive	Discuss the clinical presentation and the diagnostic workup needed for Acyanotic heart disease in Pediatric patients	MCQ, SEQ
			LGD	Cognitive	Discuss the management of an infant and child with Acyanotic heart disease	MCQ, SEQ
	Ventricular Septal Defect (VSD)	1	LGD	Cognitive	Discuss the diagnostic workup and management for Ventricular Septal Defect.	MCQ, SEQ
	Atrial Septal Defect (ASD)		LGD	Cognitive	Discuss the diagnostic workup and management for Atrial Septal Defect	MCQ, SEQ
	Aortic stenosis	1	LGD	Cognitive	Discuss the diagnostic and management workup for Aortic stenosis	MCQ, SEQ
	Coarctation of aorta	1	LGD	Cognitive	Explain the etiology clinical presentation of Coarctation of aorta	MCQ, SEQ
			LGD	Cognitive	Discuss the diagnostic workup and management for Coarctation of aorta	MCQ, SEQ
	Cyanotic heart disease	1	LGD	Cognitive	Discuss the clinical presentation and the diagnostic workup needed for Cyanotic heart disease in	MCQ, SEQ

			<b>MIT</b>	<b>L-Domains</b>	<b>Pediatric patients</b>	
			LGD	Cognitive	Discuss the management of an infant and child with Cyanotic heart disease	MCQ, SEQ
			SGD	Psychomotor	Perform physical examination of a neonate and infant with Cyanotic heart disease	OSCE



			Role play	Affective domain	Counsel a parent of a neonate, infant and child with Cyanotic heart disease	OSCE
	Tetralogy of Fallot (TOF)	1	LGD	Cognitive	Explain the etiology and clinical presentation of Tetralogy of Fallot	MCQ, SEQ
			LGD	Cognitive	Discuss the diagnostic workup and management for Tetralogy of Fallot	MCQ, SEQ
	Transposition of Great Arteries (TGA)	1	LGD	Cognitive	Explain the etiology and clinical presentation of Transposition of Great Arteries	MCQ, SEQ
			LGD	Cognitive	Discuss the diagnostic workup and management for Transposition of Great Arteries	MCQ, SEQ
	Ebstein anomaly	1	LGD	Cognitive	Explain the etiology and clinical presentation of Ebstein anomaly	MCQ, SEQ
			LGD	Cognitive	Discuss the diagnostic workup and management for Ebstein anomaly	MCQ, SEQ
	Total Anomalous Pulmonary Venous Drainage or Connections (TAPVC)	1	LGD	Cognitive	Explain the etiology and clinical presentation of TAPVC	MCQ, SEQ
			LGD	Cognitive	Discuss the diagnostic workup and management for TAPVC	
	Truncus arteriosus	1	LGD	Cognitive	Explain the etiology and clinical presentation of Truncus arteriosus	MCQ, SEQ
			LGD		Discuss the diagnostic workup and management for Truncus arteriosus	

	Tricuspid atresia	1	LGD	Cognitive	Explain the etiology and clinical presentation of Tricuspid atresia	MCQ, SEQ
			LGD	Cognitive	Discuss the diagnostic workup and management for Tricuspid atresia	MCQ, SEQ
	Congestive Cardiac Failure (CCF)	1	LGD	Cognitive	Discuss the clinical presentation and the diagnostic workup and management needed for Congestive Cardiac Failure in Pediatric patients	MCQ, SEQ
			SGD/SDL	Psychomotor skills	Take history and perform physical examination of a neonate, infant and child with Congestive Cardiac Failure	OSCE
			Role play	Affective domain	Counsel the parents of a neonate, infant and child with Congestive Cardiac Failure	OSCE
	Cardiomyopathy	1	LGD	Cognitive	Discuss the management algorithm of an infant and child with Cardiomyopathy	MCQ, SEQ
	Cystic fibrosis	1	LGD	Cognitive	Explain the etiology and clinical presentation of Cystic fibrosis	MCQ, SEQ
			LGD	Cognitive	Discuss the diagnostic workup and management for Cystic fibrosis	MCQ, SEQ
<b>Family medicine</b>	IHD/CCF	1	LGD	Cognitive	Explain the management strategies of a patient with IHD and heart failure in general practice including the psychosocial impact of disease on patient and their families	MCQ, SEQ
		1	LGD	Cognitive	Describe the strategies for prevention of IHD and CCF	MCQ, SEQ
			LGD	Cognitive	Identify the red-flags in a patient with IHD/CCF and appropriately refer to specialty care when required	MCQ, SEQ

<b>Surgery</b>	Thoracos tomy and chest intubation	1	LGD	Cognitive	Explain the indications for Thoracostomy and chest intubation.	MCQ, SEQ
		2	SGD/SDL	Psychomotor	Observe the procedure of Thoracostomy and chest intubation	OSCE
		1	Role play	Affective	Counsel a patient for the procedure of Thoracostomy and chest intubation	OSCE

### THEME 3: FEVER AND COUGH

<b>Medicine</b>	Bacterial endocarditis	1	LGD	Cognitive	Explain the risk factors, etiology, clinical features, diagnostic criteria, management, and prevention of Bacterial endocarditis	MCQ, SEQ
	Pneumonias	1	LGD	Cognitive	Discuss the etiology and classification of pneumonias	MCQ, SEQ
			LGD	Cognitive	Explain the etiology, risk factors clinical features, diagnosis, and management of patients with different types of pneumonias.	MCQ, SEQ
		1	SGD/SDL	Psychomotor	Examine a patient with features of pneumonia	OSCE
	Pulmonary Tuberculosis	1	LGD	Cognitive	Explain the diagnostic workup, management, and complications of a suspected case of pulmonary TB	MCQ, SEQ
	Bronchiectasis	1	LGD	Cognitive	Develop a management algorithm for a patient with bronchiectasis	MCQ, SEQ
	Lung abscess	1	LGD	Cognitive	Explain the etiology, clinical and radiological features, complications, and management of a patient with lung abscess	MCQ, SEQ
	Lung tumors	1	LGD	Cognitive	Classify lung tumors	MCQ, SEQ

			LGD	Cognitive	Explain the diagnostic workup and management and complications of a patient with suspected Bronchogenic carcinoma	
		1	LGD	Cognitive	Explain the diagnostic workup and management and complications of a patient with suspected pleural mesothelioma	MCQ, SEQ
	Cardiovascular involvement in systemic diseases	1	LGD	Cognitive	Discuss the cardiovascular manifestations of systemic diseases, their clinical features, investigations, prognosis, and relevant management	MCQ, SEQ
	Pulmonary involvement in systemic diseases	1	LGD	Cognitive	Discuss the pulmonary manifestations of systemic diseases, their clinical features, investigations, prognosis, and relevant management	MCQ, SEQ
Pediatrics	Rheumatic fever	1	LGD	Cognitive	Discuss the clinical presentation and the diagnostic workup needed for Rheumatic fever in Pediatric patients	MCQ, SEQ
			LGD	Cognitive	Discuss the management of an infant and child with Rheumatic fever	MCQ, SEQ
		1	SGD	Psychomotor	Perform physical examination of a neonate, infant with Rheumatic fever	OSCE
		Role play	Affective domain	Counsel a parent of a neonate, infant and child with Rheumatic fever	OSCE	

	Acute Respiratory Infections (ARI)	1	LGD	Cognitive	Explain the clinical presentation and diagnostic workup needed for Acute Respiratory Infections	MCQ, SEQ
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			LGD	Cognitive	Discuss the management of an infant and child with Acute Respiratory Infections	MCQ, SEQ
			SGD	Psychomotor	Perform physical examination of a neonate, infant with Acute Respiratory Infections	OSCE
			Role play	Affective domain	Counsel a parent of a neonate, infant and child with Acute Respiratory Infections	OSCE
	Croup	1	LGD	Cognitive	Explain the clinical presentation and diagnostic workup needed for Croup	MCQ, SEQ
			LGD	Cognitive	Discuss the management of an infant and child with Croup	MCQ, SEQ
	Pneumonia	1	LGD	Cognitive	Explain the clinical presentation and diagnostic workup needed for Pneumonia	MCQ, SEQ
			LGD	Cognitive	Discuss the management of an infant and child with Pneumonia	MCQ, SEQ
Family medicine	Acute respiratory presentation in primary care management and Red flags	1	LGD	Cognitive	Explain the approach to a patient with cough or shortness of breath in a primary health care setting	MCQ, SEQ
			LGD	Cognitive	Discuss the differential diagnosis of a patient with cough or shortness of breath	MCQ, SEQ
			LGD	Cognitive	Discuss the investigations for a patient with cough or shortness of breath in a primary health care setting	MCQ, SEQ
			LGD	Cognitive	Identify common red-flags	MCQ, SEQ

			LGD	Cognitive	Identify patients that need urgent and proper referral for specialist care	MCQ, SEQ
Pediatrics	Rheumatic fever	1	LGD	Cognitive	Discuss the clinical presentation and the diagnostic workup needed for Rheumatic fever in Pediatric patients.	MCQ, SEQ
			LGD	Cognitive	Discuss the management of an infant and child with Rheumatic fever.	MCQ, SEQ
			SGD	Psychomotor	Perform physical examination of a neonate, infant with Rheumatic fever.	OSCE
			Role play	Affective domain	Counsel a parent of a neonate, infant and child with Rheumatic fever.	OSCE
	Infective endocarditis	1	LGD	Cognitive	Discuss the clinical presentation and the diagnostic workup needed for Infective endocarditis in Pediatric patients	MCQ, SEQ
			LGD	Cognitive	Discuss the management of an infant and child with Infective endocarditis	MCQ, SEQ
			SGD	Psychomotor	Perform physical examination of a neonate, infant with Infective endocarditis.	OSCE
			Role play	Affective domain	Counsel a parent of a neonate, infant and child with Infective endocarditis.	OSCE
	Myocarditis	1	LGD	Cognitive	Discuss the clinical presentation and the diagnostic workup needed for Myocarditis.	MCQ, SEQ
			LGD	Cognitive	Discuss the management of an infant and child with Myocarditis.	MCQ, SEQ
			SGD	Psychomotor	Perform physical examination of a neonate, infant with Myocarditis.	OSCE

			Role play	Affective domain	Counsel a parent of a neonate, infant and child with Myocarditis.	OSCE
Radiology	Chest X-ray (Lungs)	1	Lecture	Cognitive	Identify the lungs diseases in the chest X-ray (TB, Pneumonia, Pneumothorax, bronchitis, COPD)	OSCE

#### THEME 4: PAINFUL LEG AND BLOOD PRESSURE

Medicine	Deep vein thrombosis (DVT)	1	LGD	Cognitive	Discuss the diagnostic algorithm for an elderly patient with a sudden swollen and painful limb.	MCQ, SEQ
			LGD	Cognitive	Discuss the diagnosis and management strategies for a patient with DVT.	MCQ, SEQ
	Coarctation of Aorta	1	LGD	Cognitive	Explain the types, clinical features, investigations, complications, and management of Coarctation of the Aorta.	MCQ, SEQ
	Systemic Hypertension	1	LGD	Cognitive	Discuss the management approach to a patient who is newly diagnosed hypertensive	MCQ, SEQ
		1	SGD	Psychomotor	Take history from a hypertensive patient	OSCE
				Psychomotor	Perform a physical examination of a hypertensive patient	OSCE
		1	Role play	Affective domain	Counsel a newly diagnosed hypertensive patient	OSCE
Family medicine	Hypertension in general	1	LGD	Cognitive	Explain the management strategies of a hypertensive	MCQ, SEQ

	practice				patient in general practice including the psychosocial impact of disease on patient and their families	
		1	LGD	Cognitive	Describe the strategies for prevention of hypertension and its complications.	MCQ, SEQ
			LGD	Cognitive	Identify the red flags in a hypertensive patient and appropriately refer to specialty care when required	MCQ, SEQ

### CLINICAL ROTATION

S. No	Learning Objectives	Learning Modalities
1.	Introduction to Clinical examination: The General Physical (GPE)	Patients
2.	History taking and Examination of the Cardiovascular System	Patients
3.	History taking and Examination of the Respiratory System	Patients
4.	History taking and Examination of the Gastro-intestinal System	Patients
5.	History taking and Examination of the Nervous System	Patients
6.	History taking and Examination of the Nervous System	Patients
7.	History taking and Examination of the Musculoskeletal System	Patients

### CLINICAL SCIENCES SUBJECTS

#### CARDIORESPIRATORY – III Module

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	<b>ANAESTHESIA</b>  Airway Management	Understand and explain the anatomy of the human airway	1	Lecture
		Identify risk factors for potential difficult mask ventilation	1	Lecture
		Understand ASA algorithm for difficult airway management and be able to explain the primary decision point and options for management	1	Lecture



## CLINICAL ROTATION SCHEDULE

### MORNING CLINICAL ROTATIONS

Duration	9 weeks		11 weeks		8 weeks	8 weeks
	6 weeks	3wks	8 weeks	3 weeks		
Disciplines	Medicine	Medicine & Allied	Surgery	Surgery & Allied	Gynae/Obs	Paeds
Total hours*	78	39	104	39	104	104

\* 2.6 clinical teaching hours per day

### EVENING CLINICAL ROTATIONS

Duration	6 weeks		14 weeks		8 weeks	8 weeks
	3 weeks	3wks	11 weeks	3 weeks		
Disciplines	Medicine	Medicine & Allied	Surgery	Surgery & Allied	Gynae/Obs	Paeds
Total hours*	45	45	165	45	120	120

\* 3 clinical teaching hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

## TEACHING HOURS ALLOCATION

There will be 76 hours allotted in total. The hours shall be divided into 4 different themes. The necessity for students to set aside more time for self-directed learning and clinical learning is emphasized, although at the expense of repetition. We anticipate that the students will be well-versed in this significant module. This module covers a number of common and significant subjects.

S. No	Subject	Hours
1	Medicine	33
2	Paediatrics	23
3	Family medicine	5
4	Surgery	10
5	Radiology	2
6	Anesthesia	3
	<b>Total hours</b>	<b>76</b>

## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

1. Student must report to examination hall/venue, in time for smooth conduction of the exams.
2. No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
3. No students will be allowed to sit in exam without College ID Card, and Lab Coat
4. Students must sit according to their roll numbers mentioned on the seats.
5. Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
6. Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
7. Students must not possess any written material or communicate with their fellow students
8. Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
9. **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### ASSESSMENT

#### **Internal: Total 10% (20 marks)**

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

#### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

## METHODS OF ASSESSMENT

### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

### **Short Essay Questions (SEQs):**

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

## ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## WEEKLY TESTS

- The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.
- The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.
- It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.
- Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

## POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD
- Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class
- PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable

## ASSESSMENT BLUEPRINT

### CARDIORESPIRATORY-III MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

## RECOMMENDED BOOKS

<i>SUBJECT</i>	<i>RESOURCES</i>
<b>PAEDIATRICS</b>	<ul style="list-style-type: none"> <li>• Nelson textbook of pediatrics</li> <li>• Textbook of Pediatrics, Pakistan Pediatrics Association</li> <li>• Basis of Pediatrics, Pervez Akbar khan, Ninth edition</li> <li>• Current pediatrics</li> <li>• OP Ghai Essential of Pediatrics Textbook</li> </ul>
<b>SURGERY</b>	<ul style="list-style-type: none"> <li>• Bailey &amp; Love's Short Practice of Surgery 27th edition (a new edition is expected shortly. Keep a look out for the new one</li> <li>• Demonstration of Physical Signs in Clinical Surgery, by Hamilton Bailey. 19th edition or newer. Text Book</li> <li>• Browse's Introduction to Symptoms and Signs of Surgical Disease. Text Book</li> <li>• Ackerman's Surgical Pathology. Latest Edition</li> </ul>
<b>GENERAL MEDICINE</b>	<ul style="list-style-type: none"> <li>• Hutchison's Clinical Methods, 23<sup>rd</sup> Edition</li> <li>• MacLeod's clinical examination 13th edition</li> <li>• Davidson's Principles and Practice of Medicine</li> <li>• Kumar and Clark's Clinical Medicine</li> <li>• HCAI guidelines CDC</li> </ul>



**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you? Y  N
- B. The course contents met with your expectations  
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned  
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with  
l. Too few examples 5. Adequate examples
- E. The level of the course was  
l. Too low 5. Too high
- F. The course contents compared with your expectations  
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices  
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?  
l. Not at all 5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand  
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used  
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate  
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful  
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes  No

F. Please give overall rating of the course

90% - 100% (    )

60% - 70% (    )

80% - 90% (    )

50% - 60% (    )

70% - 80% (    )

below 50% (    )

Please comment on the strengths of the course and the way it was conducted.

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Please comment on the weaknesses of the course and the way it was conducted.

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Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

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Thank you!!

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**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**BLOOD-III MODULE**  
**FINAL PROFESSIONAL MBBS**

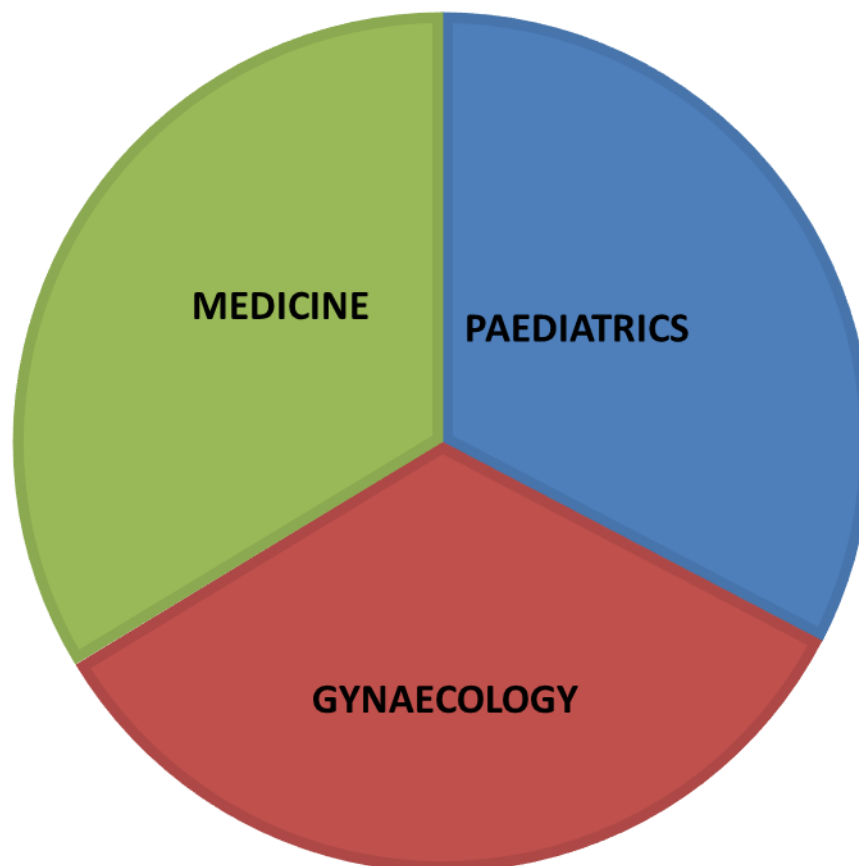


## **CURRICULUM FRAMEWORK**

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Foundation-II, Blood-III, Cardiorespiratory -III, Endocrine and Reproduction-IV, Renal-III, Git and Liver-IV, Multisystem, Musculoskeletal-II and Neuroscience -III modules which links basic science knowledge to clinical problems.

### **INTEGRATING DISCIPLINES OF BLOOD-III MODULE**



## MODULE OVERVIEW

### BLOOD-III MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Final professional
<b>Duration</b>	3 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

### BLOOD-III MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### Module objectives:

- ✚ Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- ✚ Highlights information on the contribution of continuous on the student's overall performance.
- ✚ Includes information on the assessment methods that will be held to determine every student's performance.

#### Achievement of objectives:

- Focuses on information pertaining to examination policy, rules and regulations.

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations
- Skills session
- Self-Directed Study

- **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

For MBBS Final year students, the Blood-III module concentrates on knowledge and skills required for diagnosis, and outlining the management plan of common hereditary, immunological, and neoplastic disorders of blood and its components. The module covers as well the principles and techniques of laboratory investigations essential for the diagnosis, and monitoring of the treatment of hematological disorders. In view of prevalence in Pakistan, adequate coverage is given to different types of anemia, thalassemia, and other related disorders. Moreover, the objectives include blood transfusion and blood donation practices to promote safe transfusion, and appropriate use of blood components

## RATIONALE

The Blood-III module learning objectives take into consideration previously acquired pertinent knowledge in Blood-II module of MBBS third year. The module integrates with related disciplines such as Medicine, Paediatrics and Gynaecology. It is expected that different learning experiences would help students build new knowledge, and enhance students' understanding and motivation to seek further knowledge. This includes taking histories, examining patients, and learning about sampling techniques, pertinent laboratory tests, their interpretations, treatment plans, and prognostic values of various hematological, immunological, and immuno-haematological disorders of adults and children.

## LEARNING OBJECTIVES

### 7.1 Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

- Explain the etiology, clinical features, diagnostic workup, and management of a patient with Anemia.
- Explain the etiology, clinical features, diagnostic workup, and management of a patient with anemia of pregnancy.
- Explain the etiology, clinical features, diagnostic workup, and management of a patient with Leukopenia.
- Explain the etiology, clinical features, diagnostic workup, and management of a patient with Leukocytosis.
- Explain the management and complications of a patient with hematological malignancies.
- Discuss the diagnostic workup of a patient with splenomegaly.
- Explain the etiology, clinical features, diagnostic workup, and management of a patient with bleeding and clotting disorders.
- Explain the etiology, clinical features, diagnostic workup, and management of a patient with anemia of pregnancy

### Skills / Psychomotor Domain:

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

- Take a history from a patient with anemias
- Perform physical examination of a neonate, infant and child with anemia

- Take a history of a child/infant with leukopenia / aplastic anemia
- Take history and perform physical examination of a patient with leukocytosis
- Perform general physical and systemic examination keeping in mind the hematological problem for a specific Pediatric age group
- Perform hematological examination
- Take history and perform physical examination of a patient with anemia in pregnancy
- Take history and perform physical examination of a child with history of bleeding disorder

#### Attitude / Affective Domain:

It involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

- Respect oneself and one's peers, both when providing and receiving comments.
- To show patients compassion and understanding.
- Develop your ability to communicate while keeping a sense of duty to your patients.
- Showcase appropriate laboratory procedures.
- Relate to patient and caregivers vulnerability
- Demonstrate ethical self-management
- Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
- Display compassion with patient and colleagues
- Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease
- Counsel a patient with newly diagnosed hematological malignancy
- Counsel a parent with a child with ALL.
- Counsel a pregnant patient with anemia.
- Counsel a parent of a neonate, infant and child with Thalassemia major

#### Outcomes of Blood-III Module

- Knowledgeable
- Skillful
- Community Health Promoter
- Problem-solver
- Professional
- Researcher
- Leader and Role Model

### THEMES FOR BLOOD-III MODULE

S.NO	Themes	Duration
1	Pallor	1 week
2	Fever	1 week
3	Bleeding	1 week

**SPECIFIC LEARNING OBJECTIVES THEME WISE**

<b>THEME 1: PALLOR</b>					
<b>Subject</b>	<b>Topic</b>	<b>Hours</b>	<b>S. No</b>	<b>Domain of learning</b>	<b>Learning objectives</b>
<b>Pediatrics</b>	Anemia	1	1	Cognitive	Evaluate a neonate, infant and child with anemia (congenital/acquired).
			2	Cognitive	Explain the diagnostic workup needed for different age group in Pediatric patients with anemias of inadequate production and hemolytic anaemia.
			3	Cognitive	Classify anemias based on history, physical examination and relevant investigations considering different age groups
		1	4	Cognitive	Manage an infant and child with iron deficiency anemia and megaloblastic anemia
			5	Cognitive	Manage a neonate and infant with hereditary anemias
		2	6	Cognitive	Manage a child with hemolytic anemias: <ul style="list-style-type: none"> <li>• Thalassemia</li> <li>• Sickle cell anemia</li> <li>• Hereditary spherocytosis</li> <li>• G6PD deficiency</li> </ul>
			7	Cognitive	Manage a child with anemia resulting from bone marrow failure (Aplastic anemia)
			8	Psychomotor skills	Perform physical examination of a neonate, infant and child with anemia
			9	Psychomotor skills	Perform general physical and systemic examination keeping in mind the hematological problem for a specific Pediatric age group
			10	Affective domain	Counsel a parent of a neonate, infant and child with Thalassemia major
<b>Medicine</b>	Anemias	1	11	Cognitive	Evaluate a patient with anemia
			12	Cognitive	Explain the diagnostic workup of a patient with anemias
			13	Cognitive	Classify anemias based on history, physical examination and relevant investigations

		1	14	Cognitive	Manage a patient with iron deficiency anemia
			15	Cognitive	Manage a patient with hereditary anemias
			16	Cognitive	Manage a patient with hemolytic anemias (hereditary and acquired)
			17	Cognitive	Manage a patient with anemia resulting from bone marrow failure
			18	Psychomotor skills	Take a history from a patient with anemias
			19	Psychomotor skills	Perform physical examination of a patient with anemia
			20	Psychomotor skills	Perform hematological examination
			21	Affective domain	Counsel a patient with different types of anemias
<b>Gynaecology</b>	Anemia in pregnancy	1	22	Cognitive	List the various causes of anemia in pregnancy.
			23	Cognitive	Describe Feto-maternal complications of anemia in pregnancy.
		1	24	Cognitive	Interpret the blood picture of a pregnant patient with anemia
			25	Cognitive	Outline diagnostic workup and management plan of a patient with anemia in pregnancy.
		1	26	Psychomotor	Take history and perform physical examination of a patient with anemia in pregnancy.
			27	Affective	Counsel a pregnant patient with anemia.

### THEME-2: FEVER

Subject	Topic	Hours	S. No	Domain of learning	Learning objectives
<b>Pediatrics</b>	Leukopenia	1	28	Cognitive	Evaluate a report of peripheral blood film
			29	Cognitive	Explain the diagnostic approach to a child with Leukopenia
			30	Psychomotor	Take a history of a child/infant with leukopenia / aplastic anemia
	Leukemias	1	31	Cognitive	Explain the diagnostic approach to a child with leukocytosis
			32	Cognitive	Classify Leukemias
			33	Cognitive	Explain the diagnostic approach to a patient with suspected leukemia
			34	Cognitive	Explain the management of a child with acute Leukemias



			35	Psychomotor	Take history and perform physical examination of a patient with leukocytosis
			36	Affective	Counsel a parent with a child with ALL.
	Splenomegaly	1	37	Cognitive	Classify the causes of splenomegaly in Paediatric age group
			38	Cognitive	Explain the diagnostic approach to a child with splenomegaly
<b>Medicine</b>	Leukopenia	1	39	Cognitive	Evaluate a peripheral blood film
			40	Cognitive	Explain the diagnostic approach to a patient with Leukopenia
			41	Psychomotor	Take a history from a patient with leukopenia and aplastic anemia
	Leukemias	2	42	Cognitive	Explain the diagnostic approach to a patient with leukocytosis
			43	Cognitive	Classify Leukemias
			44	Cognitive	Explain the management of a patient with acute Leukemias
			45	Cognitive	Explain the management of a patient with chronic Leukemias
			46	Psychomotor	Take history and perform physical examination of a patient with leukocytosis
	Splenomegaly	2	47	Cognitive	Classify the causes of splenomegaly
			48	Cognitive	Explain the diagnostic approach to a patient with splenomegaly
	Lymphadenopathy		49	Cognitive	Classify the causes of generalized lymphadenopathy
			50	Cognitive	Explain the diagnostic approach to a patient with generalized lymphadenopathy
			51	Cognitive	Classify lymphomas
			52	Cognitive	Explain the management of a patient with Lymphoma (Hodgkin's and non-Hodgkin's)
			53	Cognitive	Explain tumor lysis syndrome and its management
			54	Cognitive	Explain the common adverse effects of chemotherapeutic agents used in hematological malignancies and their management and prevention.
			55	Affective	Counsel a patient with newly diagnosed hematological malignancy

**THEME-3: BLEEDING**

Subject	Topic	Hours	S. No	Domain of learning	Learning objectives
Pediatrics	Definition of terms	1	56	Cognitive	Define Petechiae, purpura, ecchymosis
	Bleeding and clotting disorders		57	Cognitive	Explain the diagnostic approach to a child/infant with bleeding disorder
			58	Cognitive	Classify clotting disorders and explain their etiologies
			59	Cognitive	Explain the coagulation screen
			60	Cognitive	Interpret the common hematological parameters in a child with bleeding disorder (Platelets count, BT, CT, PT, APTT,
				Fibrinogen levels, FDPs)	
		2	61	Cognitive	Explain the management of Von Willebrand disease
			62	Cognitive	Explain the management of a child with Hemophilia A
			63	Cognitive	Explain the management of a child with Idiopathic Thrombocytopenic Purpura
			64	Cognitive	Explain the dosage and administration of factor VIII in a child/infant in different situations like accidents, fall of deciduous teeth, surgery etc.
			65	Psychomotor	Take history and perform physical examination of a child with history of bleeding disorder
Medicine	Bleeding and clotting disorders	2	66	Cognitive	Explain the diagnostic approach to a patient with bleeding disorder
			67	Cognitive	Classify hypercoagulable states and their management and prevention of thrombosis

### CLINICAL SCIENCES SUBJECTS

BLOOD III MODULE				
S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	Anaesthesia Preoperative Laboratory Testing	Identify the indications for preoperative laboratory testing	1	Lecture

	Identify the indications for preoperative chest x-rays	1	Lecture
	Identify the indications for preoperative EKGs.	1	Lecture

## CLINICAL ROTATION SCHEDULE

### MORNING CLINICAL ROTATIONS

Duration	9 weeks		11 weeks		8 weeks	8 weeks
	6 weeks	3wks	8 weeks	3 weeks		
Disciplines	Medicine	Medicine & Allied	Surgery	Surgery & Allied	Gynae/Obs	Paeds
Total hours*	78	39	104	39	104	104

\* 2.6 clinical teaching hours per day

### EVENING CLINICAL ROTATIONS

Duration	6 weeks		14 weeks		8 weeks	8 weeks
	3 weeks	3wks	11 weeks	3 weeks		
Disciplines	Medicine	Medicine & Allied	Surgery	Surgery & Allied	Gynae/Obs	Paeds
Total hours*	45	45	165	45	120	120

\* 3 clinical teaching hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

## TEACHING HOURS ALLOCATION

There will be 25 hours allotted in total. The hours shall be divided into 3 different themes. The necessity for students to set aside more time for self-directed learning and clinical learning is emphasized, although at the expense of repetition. We anticipate that the students will be well-versed in this significant module. This module covers a number of common and significant subjects.

S. No	Subject	Hours
1	Paediatrics	10
2	Medicine	9
3	Gynaecology	3
4	Anesthesia	3
	<b>Total hours</b>	<b>25</b>

## EXAMINATION AND METHODS OF ASSESSMENT

### EXAMINATION RULES AND REGULATIONS

1. Student must report to examination hall/venue, in time for smooth conduction of the exams.
2. No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
3. No students will be allowed to sit in exam without College ID Card, and Lab Coat
4. Students must sit according to their roll numbers mentioned on the seats.
5. Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
6. Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
7. Students must not possess any written material or communicate with their fellow students
8. Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
9. **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### ASSESSMENT

#### **Internal: Total 10% (20 marks)**

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- **NOTE: at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

#### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

## METHODS OF ASSESSMENT

### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

### **Short Essay Questions (SEQs):**

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

## ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## WEEKLY TESTS

- The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.
- The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.
- It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.
- Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

## POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD
- Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class
- PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable

## ASSESSMENT BLUEPRINT

### BLOOD-III MODULE

Assessment is based on Table of Specification (TOS)

	ASSESMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	PRA OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

## RECOMMENDED BOOKS

<i>SUBJECT</i>	<i>RESOURCES</i>
<b>PAEDIATRICS</b>	<ul style="list-style-type: none"> <li>• Nelson textbook of pediatrics</li> <li>• Textbook of Pediatrics, Pakistan Pediatrics Association</li> <li>• Basis of Pediatrics, Pervez Akbar khan, Ninth edition</li> <li>• Current pediatrics</li> <li>• OP Ghai Essential of Pediatrics Textbook</li> </ul>
<b>GYNAECOLOGY</b>	<ul style="list-style-type: none"> <li>• Obstetrics by Ten Teachers 20<sup>TH</sup> Edition</li> <li>• Gynaecology by Ten Teachers 23<sup>rd</sup> Edition</li> </ul>
<b>GENERAL MEDICINE</b>	<ul style="list-style-type: none"> <li>• Hutchison's Clinical Methods, 23<sup>rd</sup> Edition</li> <li>• MacLeod's clinical examination 13th edition</li> <li>• Davidson's Principles and Practice of Medicine</li> <li>• Kumar and Clark's Clinical Medicine</li> <li>• HCAI guidelines CDC</li> </ul>





**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you? Y  N
- B. The course contents met with your expectations  
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned  
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with  
l. Too few examples 5. Adequate examples
- E. The level of the course was  
l. Too low 5. Too high
- F. The course contents compared with your expectations  
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices  
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?  
l. Not at all 5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand  
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used  
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate  
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful  
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes  No

**RENAL-III MODULE**

**FINAL PROFESSIONAL MBBS**

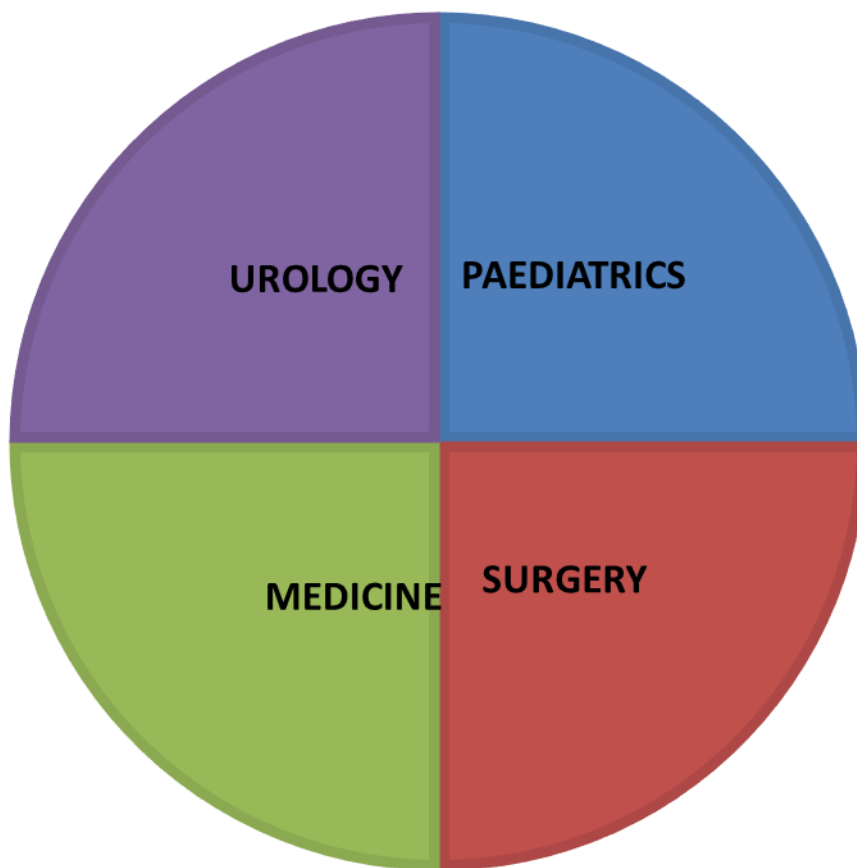


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### INTEGRATING DISCIPLINES OF RENAL-III MODULE



## MODULE OVERVIEW




### RENAL-III MODULE DETAILS

<b>Course</b>	MBBS
<b>Year</b>	Final professional
<b>Duration</b>	6 weeks
<b>Learning Outcomes</b>	The competent Medical Practitioner
<b>Competencies covered</b>	To develop medical professionals who are well - versed, adept, and have the right mindset.
<b>Module Assessment</b>	End module formative assessment
<b>Teaching Methods</b>	Interactive Lectures, Demonstrations, Case Based Learning, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
<b>Assessment Methods</b>	MCQs, SEQs, OSPE, VIVA

### RENAL-III MODULE COMMITTEE

Sr. No	Names	Department	Designation
<b>MODULE COORDINATOR</b>			
1.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU
<b>COMMITTEE MEMBERS</b>			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

#### Module objectives:

-  Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
-  Highlights information on the contribution of continuous on the student's overall performance.
-  Includes information on the assessment methods that will be held to determine every student's performance.

#### Achievement of objectives:

- Focuses on information pertaining to examination policy, rules and regulations.

## LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations
- Skills session
- Self-Directed Study

- **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

- **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

- **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

## INTRODUCTION

The Renal III Module stands as a culmination of the in-depth exploration of renal physiology, pathology, and clinical applications in the final year MBBS. Building upon the foundational knowledge acquired in earlier years, this module serves as a focused and comprehensive study of the intricate renal system, playing a pivotal role in the maintenance of homeostasis and overall health. The module's curriculum is designed to bridge the gap between theoretical knowledge and clinical application. Students engage in case-based learning, clinical scenarios, and hands-on experiences that simulate real-world challenges encountered in nephrology. Through this immersive approach, medical graduates develop the skills necessary for the diagnosis, management, and treatment of renal disorders. This Module aligns with the overarching goal of producing well-rounded and competent medical professionals. It fosters critical thinking, diagnostic reasoning, and effective communication skills essential for collaborating within interdisciplinary healthcare teams. The emphasis on evidence-based practice equips students with the tools to stay abreast of evolving medical knowledge and technologies in the field of nephrology

### RATIONAL

The Renal III Module recognizes the clinical relevance of nephrology and renal medicine, ensuring that graduating medical students possess a thorough understanding of renal disorders, diagnostic methods, and treatment modalities. Renal disorders often present complex diagnostic and therapeutic challenges. The module is designed to enhance clinical decision-making skills by immersing students in case-based learning, exposing them to a diverse range of renal cases encountered in clinical practice. This prepares them to approach renal problems with a comprehensive and systematic mindset. By understanding the impact of renal disorders on patients' lives, students learn to consider not only the physiological aspects but also the psychosocial and ethical dimensions of renal medicine

## LEARNING OBJECTIVES

### Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

- Discuss the diagnostic approach and management of an adult and a child with suspected glomerular disease.
- Discuss the diagnostic approach and management of an adult and a child with acute and chronic renal disease.
- Discuss the management of a patient with nephrocalcinosis.
- Discuss the etiology, clinical features, and management of common electrolyte abnormalities.
- Explain the diagnosis and management of a patient with hematuria and UTIs.
- Explain the common diseases of the urogenital system.
- Take history and perform a physical examination of urogenital system.
- Counsel a patient with acute and chronic renal failure.

### Skills / Psychomotor Domain:

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

- Gathering a detailed patient history, including symptoms related to renal function
- Conducting a thorough examination, with a focus on the abdomen, back, and genitourinary system
- Determining the size and position of the kidneys.
- Listening for renal artery bruits or other abnormal sounds.
- Properly placing a catheter for urine drainage
- Effectively communicating with patients about their renal condition, treatment plans, and lifestyle modifications
- Understanding and interpreting imaging studies such as renal ultrasound, CT scans, and MRIs
- Analyzing and interpreting results of renal function tests, electrolyte panels, and urinalysis
- Conducting a thorough examination, with a focus on the abdomen, back, and genitourinary system
- Observing and understanding various renal surgeries or interventions, such as nephrectomy or kidney transplant.
- Developing critical thinking skills for diagnosing renal disorders and formulating appropriate management plan.

#### **Attitude / Affective Domain:**

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

- Respect oneself and one's peers, both when providing and receiving comments.
- To show patients compassion and understanding.
- Develop your ability to communicate while keeping a sense of duty to your patients.
- Showcase appropriate laboratory procedures.
- Relate to patient and careers vulnerability
- Demonstrate ethical self-management
- Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.

#### **Outcomes of Renal-III Module**

- Knowledgeable
- Skillful
- Community Health Promoter
- Problem-solver
- Professional
- Researcher
- Leader and Role Model

## THEMES FOR RENAL-III MODULE

S.NO	Themes	Duration
1	Facial swelling	1 week
2	Scanty Urine	1 week
3	Loin pain and dysuria	1 week
4	Pain and swelling of external genitalia	1 week

## SPECIFIC LEARNING OBJECTIVES THEME WISE

### THEME 1: FACIAL SWELLING

Subject	Topic	Hours	S. No	Domain of learning	Learning objective
Medicine/ Nephrology	Investigations of renal diseases	1	1	Cognitive	Discuss the biochemical, radiological, hematological, and other specialized investigations and their interpretations in renal diseases.
	Approach to a facial swelling		2	Cognitive	Discuss the diagnostic workup and management approach for a patient with facial swelling of renal origin
			3	Psychomotor	Take history and perform physical examination of patient with facial swelling
	Minimal change disease	1	4	Cognitive	Explain the diagnostic workup and management and complications of a patient with Minimal change disease.
	Post streptococcal Glomerulonephritis		5	Cognitive	Explain the diagnostic workup and management and complications of a patient with Post Streptococcal Glomerulonephritis.
	IgA Nephropathy		6	Cognitive	Explain the diagnostic workup and management and complications of a patient with IgA Nephropathy.
	Chronic glomerulonephritis	1	7	Cognitive	Explain the diagnostic workup and management and complications of a patient with Chronic glomerulonephritis
Pediatrics	Nephrotic Syndrome	1	8	Cognitive	Discuss the clinical presentation, the diagnostic workup and management for suspected GN and Nephrotic Syndrome in Pediatric patients.
			9	Psychomotor	Take a history from a patient with Nephrotic Syndrome.
			10	Psychomotor	Perform physical examination of a patient with suspected GN and Nephrotic Syndrome.
			11	Affective	Effectively counsel a child and his/her parents with nephrotic syndrome.



## THEME-2: SCANTY URINE

Subject	Topic	Hours	S. No	Domain of learning	Learning objectives
<b>Medicine/Nephrology</b>	Electrolyte disorders	1	12	Cognitive	Explain the etiology, clinical features, diagnosis, and treatment of Hyper and Hyponatremia.
			13	Cognitive	Explain the etiology, clinical features, diagnosis, and treatment of hyper and hypokalemia.
		1	14	Cognitive	Explain the etiology, clinical features, diagnosis, and treatment of hyper and hypophosphatemia.
			15	Cognitive	Explain the etiology, clinical features, diagnosis, and treatment of hyper and hypomagnesemia.
	Blood Ph abnormalities	16	Cognitive	Explain the etiology, clinical features, diagnosis and treatment of Metabolic acidosis and alkalosis and its associated compensations.	
		17	Cognitive	Explain the etiology, clinical features, diagnosis and treatment of respiratory acidosis and alkalosis and its associated compensation.	
		Scanty Urine	1	18	Cognitive
Uremia		19		Cognitive	Discuss the pathophysiological mechanisms, clinical manifestations, investigations, and management of a patient with Uremia.
Chronic Kidney Injury		1	20	Cognitive	Explain the diagnostic workup and management and complications of a patient with Chronic Kidney Injury
<b>Pediatrics</b>	Acute Kidney Injury (AKI)	1	21	Cognitive	Discuss the clinical presentation, the diagnostic workup and management for Acute Kidney Injury in Pediatric patients.
	Chronic Renal Failure (CKD)	1	22	Cognitive	Discuss the clinical presentation, the diagnostic workup and management for Chronic Renal Failure in Pediatric patients.
Radiology	X-ray KUB and Ultrasound	2	23	Cognitive	Identify the Renal diseases in Ultrasound and plain and contrast radiographs (Nephrolithiasis, ureteric stone, hydronephrosis, renal cortical thickness)

## THEME-3: LOIN PAIN AND DYSURIA

Subject	Topic	Hours	S. No	Domain of learning	Learning objectives
<b>Medicine/Nephrology</b>	Approach to blood in	0.5	23	Psychomotor	Take a history from a patient presenting with blood in the urine.

	urine (haematuria)		24	Psychomotor	Perform a physical examination of a patient with blood in the urine.
			25	Cognitive	Discuss the diagnostic workup and management approach for a patient blood in urine.
	Loin pain and dysuria	0.5	26	Cognitive	Discuss the diagnostic workup and management approach for a patient with loin pain and dysuria.
	Acute pyelonephritis	1	27		Discuss the diagnostic workup and management approach for a patient with acute pyelonephritis.
	Acute and chronic prostatitis	1	28	Cognitive	Discuss the diagnostic workup and management approach for a patient with acute and chronic prostatitis
<b>Surgery</b>	Nephrolithiasis	1	29	Cognitive	Explain the etiology, risk factors, types, approach, investigations, treatment, and prevention Nephrolithiasis
		1	30	Psychomotor	Take a history from a patient presenting with acute Flank and loin pain.
		1	31	Psychomotor	Perform a physical examination of a patient with acute Flank, and loin pain.
			32	Affective	Counsel a patient presenting with nephrolithiasis.
	Dysuria	1	33	Cognitive	Discuss the diagnostic workup for Dysuria.
			34	Cognitive	Discuss the management options for a patient with Dysuria
	Hematuria	1	35	Cognitive	Discuss the diagnostic workup for Hematuria.
			36	Cognitive	Discuss the management options for a patient with Hematuria.

#### THEME-4: PAIN AND SWELLING OF EXTERNAL GENITALIA

Subject	Topic	Hours	S. No	Domain of learning	Learning objectives
<b>Surgery</b>	Testicular torsion	1	37	Cognitive	Discuss the diagnostic workup for Testicular torsion
			38	Cognitive	Discuss the management options for a patient with Testicular torsion.
	Hydrocele	1	39	Cognitive	Discuss the diagnostic workup for Hydrocele.
			40	Cognitive	Discuss the management options for a patient with Hydrocele.
	Testicular tumors	1	41	Cognitive	Explain the diagnostic workup and management and complications of a patient with suspected Testicular tumors.
	Epididymo-orchitis	1	42	Cognitive	Discuss the diagnostic workup for Epididymo-orchitis.
			43	Cognitive	Discuss the management options for a patient with Epididymo-orchitis.

<b>Pediatric surgery</b>	Hypospadias	1	44	Cognitive	Discuss the types, complications, and management of a child with Hypospadias.
<b>Urology</b>	Male infertility	1	45	Cognitive	Discuss the diagnostic approach and management options for a male patient with infertility.
<b>Medicine/ Nephrology</b>	Sexually transmitted infections	1	46	Cognitive	Classify STDs and enlist their treatment options.
			47	Cognitive	Discuss the management approach of a patient with a new onset lesion on the genitalia.

### CLINICAL SCIENCES SUBJECTS

Renal III				
S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	Urology  Urological trauma, urinary retention and malignancy	Etiology, investigations and management of Renal Trauma	1	Lecture
		Etiology, investigations and management of Ureteric Trauma	1	Lecture
		Etiology, investigations and management of Bladder and urethra Trauma	1	Lecture
		Common urological skills (catheterization, suprapubic cystostomy)	1	Lecture
		Acute retention of Urine	1	Lecture
		Chronic retention of urine	1	Lecture
		Urinary incontinence	1	Lecture
		Benign prostatic Hyperplasia	1	Lecture
		Prostatic Carcinoma (etiology, investigation, management)	1	Lecture
		Basic understanding of common urological surgical procedures (nephrectomy, nephrolithiasis, TURP, prostatectomy, PCNL)	1	Lecture
2.	Family Medicine	Lower urinary Tract Symptoms	1	Lecture
		Haematuria	1	Lecture
	Men's Health	Erectile Dysfunction	1	Lecture
		Pre- Marital Screening	1	Lecture

### CLINICAL ROTATION SCHEDULE

#### MORNING CLINICAL ROTATIONS

Duration	9 weeks		11 weeks		8 weeks	8 weeks
	6 weeks	3wks	8 weeks	3 weeks		
Disciplines	Medicine	Medicine & Allied	Surgery	Surgery & Allied	Gynae/Obs	Paeds
Total hours*	78	39	104	39	104	104

\* 2.6 clinical teaching hours per day

### EVENING CLINICAL ROTATIONS

Duration	6 weeks		14 weeks		8 weeks	8 weeks
	3 weeks	3wks	11 weeks	3 weeks		
Disciplines	Medicine	Medicine & Allied	Surgery	Surgery & Allied	Gynae/Obs	Paeds
Total hours*	45	45	165	45	120	120

\* 3 clinical teaching hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

### TEACHING HOURS ALLOCATION

There will be 42 hours allotted in total. The hours shall be divided into 4 different themes. The necessity for students to set aside more time for self-directed learning and clinical learning is emphasized, although at the expense of repetition. We anticipate that the students will be well-versed in this significant module. This module covers a number of common and significant subjects.

S. No	Subject	Hours
1	Medicine	11
2	Surgery	10
3	Pediatrics	4
4	Radiology	2
5	Urology	11
6	Family Medicine	4
	<b>Total hours</b>	<b>42</b>

### EXAMINATION AND METHODS OF ASSESSMENT

#### EXAMINATION RULES AND REGULATIONS

1. Student must report to examination hall/venue, in time for smooth conduction of the exams.
2. No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
3. No students will be allowed to sit in exam without College ID Card, and Lab Coat
4. Students must sit according to their roll numbers mentioned on the seats.

5. Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) –Sharing is prohibited
6. Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
7. Students must not possess any written material or communicate with their fellow students
8. Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
9. **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

### **ASSESSMENT**

#### **Internal: Total 10% (20 marks)**

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
- **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
- **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:
- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

#### **University Annual Exam: Total 90%**

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

### **METHODS OF ASSESSMENT**

#### **Multiple Choice Questions**

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.

- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

#### **Short Essay Questions (SEQs):**

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

#### **OSPE / OSCE**

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
- Interactive Stations:
  - In this station, examiner ask questions related to the task within the allocated time.
- Observed Stations:
  - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
- Unobserved (static) Stations:
  - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
- Rest station
  - It is a station where there is no task given and in this time student can organize his/her thoughts

#### **ASSIGNMENTS**

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## WEEKLY TESTS

- The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.
- The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.
- It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.
- Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

## POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD
- Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class
- PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

## GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B

60-62	2.7	<b>B-</b>
56-59	2.3	<b>C+</b>
50-55	2.0	<b>C</b>
<50 Non gradable	0	<b>N</b>

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable

## ASSESSMENT BLUEPRINT

### RENAL-III MODULE

Assessment is based on Table of Specification (TOS)

	ASSESSMENT	TOOLS	MARKS
<b>MODULE EXAM</b>	<b>THEORY</b>	MCQ's	100
		SEQ's	100
	<b>OSPE</b>	OSPE Static	50
		OSPE Interactive	50
		<b>Total</b>	<b>300</b>

## RECOMMENDED BOOKS

<b>SUBJECT</b>	<b>RESOURCES</b>
<b>PAEDIATRICS</b>	<ul style="list-style-type: none"> <li>• Nelson textbook of pediatrics</li> <li>• Textbook of Pediatrics, Pakistan Pediatrics Association</li> <li>• Basis of Pediatrics, Pervez Akbar khan, Ninth edition</li> <li>• Current pediatrics</li> <li>• OP Ghai Essential of Pediatrics Textbook</li> </ul>
<b>SURGERY</b>	<ul style="list-style-type: none"> <li>• Bailey &amp; Love's Short Practice of Surgery 27th edition (a new edition is expected shortly. Keep a look out for the new one</li> <li>• Demonstration of Physical Signs in Clinical Surgery, by Hamilton Bailey. 19th edition or newer. Text Book</li> <li>• Browse's Introduction to Symptoms and Signs of Surgical Disease. Text Book</li> <li>• Ackerman's Surgical Pathology. Latest Edition</li> </ul>
<b>GENERAL MEDICINE</b>	<ul style="list-style-type: none"> <li>• Hutchison's Clinical Methods, 23<sup>rd</sup> Edition</li> <li>• MacLeod's clinical examination 13th edition</li> <li>• Davidson's Principles and Practice of Medicine</li> <li>• Kumar and Clark's Clinical Medicine</li> <li>• HCAI guidelines CDC</li> </ul>





**IBN-E-SINA UNIVERSITY MIRPURKHAS**  
**FACULTY OF BASIC MEDICAL SCIENCES**



**Course Feedback Form**

Course Title: \_\_\_\_\_

Semester/Module \_\_\_\_\_ Dates: \_\_\_\_\_

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

**THE DESIGN OF THE MODLUE**

- A. Were objectives of the course clear to you? Y  N
- B. The course contents met with your expectations  
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned  
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with  
l. Too few examples 5. Adequate examples
- E. The level of the course was  
l. Too low 5. Too high
- F. The course contents compared with your expectations  
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices  
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?  
l. Not at all 5. Very strongly

**THE CONDUCT OF THE MODLUE**

- A. The lectures were clear and easy to understand  
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used  
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate  
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful  
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes  No

