4th Professional MBBS

Modular Curriculum

2026

Nishtar Medical University, Multan

SECTION I: PREAMBLE

Message from the Vice Chancellor

It gives me immense pleasure to welcome you to Nishtar Medical University. Nishtar Medical University is a premier, historical, and prestigious institution established in 1951-52. It holds a unique position among public sector universities as the first and currently the only medical university in South Punjab. It serves as an interface between healthcare provision and medical education. Its allied hospitals meet the healthcare needs of South Punjab and adjoining areas of Sindh, Baluchistan, and Khyber Pakhtunkhwa.

My aim is to develop Nishtar Medical University as a state-of-the-art medical university capable of nurturing undergraduate and postgraduate students through quality teaching and training. The university should promote research culture, ethical orientation, professionalism, leadership, and lifelong learning. The faculty of Nishtar Medical University remains committed to high standards of teaching, training, research, and service delivery.

Prof. Dr. Mehnaz Khakwani
Vice Chancellor, Nishtar Medical University

Message from the Principal NMC

Medical education is changing globally, and Nishtar Medical College is committed to academic excellence and student-centered learning in line with WFME and PM&DC expectations. The integrated modular curriculum reflects our commitment to producing graduates who are scientifically sound, clinically competent, critical thinkers, and empathetic professionals.

This prestigious institution aims to provide a learning environment that connects foundational science with early clinical exposure. This approach helps students translate theoretical knowledge into patient care from the early years of training.

Prof. Dr. Rashad Qamar Rao

Principal, Nishtar Medical College

Message from Dean Basic Medical Sciences

On behalf of the Faculty of Basic Medical Sciences, Nishtar Medical University, Multan, I am pleased to acknowledge the dedicated efforts of the faculty members and subject experts who have contributed to the revision of the curriculum for the 1st Year MBBS program. The revised curriculum has been prepared after careful deliberation in the meetings of the Board of Studies of all the department, incorporating the latest developments in medical education, national health priorities, and the evolving needs of pediatric care.

I extend my sincere gratitude to all members of the Board of Studies for their valuable input, constructive suggestions, and commitment to ensuring that this curriculum meets the highest standards of academic excellence and clinical relevance. Their collaborative spirit and professional dedication have been instrumental in finalizing this document.

This revised curriculum is presented with the expectation that it will serve as a comprehensive guide for students, equipping our graduates with the knowledge, skills, and professional values required to address the healthcare needs of children and contribute positively to the medical profession.

Prof. Dr. Asghar Javaid
Dean of Basic Medical Sciences

List of Contributors		
S#	**Name**	**Designation and Department**
PATHOLOGY		
1	Prof. Dr. Asghar Javaid	Dean, Basic Medical Sciences & Chairperson /HOD
2	Prof. Dr.Syeda Sabahat Haider Zaidi	Professor of Pathology
3	Dr. Qurrat Ul Ain	Asst. Prof of Pathology
COMMUNITY MEDICINE		
1	Prof.Dr. Asia Aziz	Chairperson, Community Medicine
2	Dr. Sana Shuakat Saddiqui	Asst. Prof of Community Medicine
OPHTHALMOLOGY		
1	Prof. Dr. Rashid Qamar Rao	Principal, Chairperson/ HOD Ophthalmology
2	Dr. Mehak Fatima	Senior Registrar,Ophthalmology
ENT DEPARTMENT		
1	Prof.Dr. M Aamir Nadeem	Chairperson/ HOD ENT Department
2	Dr. M. Sharif Shahid	Assistant Prof.
ANATOMY		
1	Dr. Ponam Mirani	HOD Anatomy Department
PHYSIOLOGY		
1	Prof Dr. Shamyla Hamid	HOD Physiology Department
BIOCHEMISTRY		
1	Dr. Bakhtawar Farooq	HOD Biochemistry Department

Institutional Identity and Program Objectives

The MBBS program adopts the vision and mission of Nishtar Medical University to guide its educational framework.

Vision Statement:

We envision healthy mankind enlightened by most accomplished health professionals.

Mission Statement:

Develop a patient oriented medical university that produces health professionals thriving for ethics, knowledge, skill and research.

PATHOLOGY DEPARTMENT

MISSION

Train health professionals equipped with passion and proficiency by achieving excellence in health professional education, dedicated academic research and expertise in latest diagnostic techniques.

COMMUNITY MEDICINE DEPARTMENT

MISSION

To foster a culture of academic excellence by providing comprehensive education in public health and community medicine. We are committed to advancing evidence-based preventive practices and driving innovative research to address real-world health challenges. Our goal is to develop socially responsible, culturally sensitive, and professional physicians equipped to serve and lead in diverse community health settings.

OTORHINOLARYNGOLOGY DEPARTMENT

MISSION

To train competent, ethical and compassionate physicians through evidence-based education, patient-centered care, clinical research, and lifelong learning-serving the healthcare needs of our society and advancing the standards of medicine in Pakistan.

OPHTHALMOLOGY DEPARTMENT

Mission

Our mission is to educate the next generation of eye professionals while striving to improve eye health in the region by providing trusted, high-quality eye care for the indigent inner city population, innovating and making discoveries.

Program Scope (MBBS):

The MBBS program prepares graduates with medical knowledge, clinical skills, ethics, and public health orientation. The program scope extends beyond treatment of illness to disease prevention, health advocacy, research, and response to local and global health determinants.

Program Outcomes (MBBS):

1. Apply foundational knowledge to clinical reasoning and medical decision-making.
2. Demonstrate ethical and professional behaviour in academic and clinical settings.
3. Engage in lifelong learning and scientific inquiry in the medical field.
4. Communicate effectively and function as a team member in interdisciplinary healthcare settings.
5. Recognize the biological and clinical foundations of common health problems with relevance to community health needs.

Curricular Basis

Educational Foundation:

The NMU curriculum uses Constructivist and Behaviorist approaches with selected elements of Cognitivism. Students build knowledge on prior understanding and apply it to purposeful learning activities that require decision-making, problem-solving, and clinical judgment.

Curricular Structure:

The curriculum follows an Integrated Modular System. It targets early integration from nesting to correlation, representing Level 7 of Harden's Integration Ladder. Foundational disciplines are retained for subject mastery, while teaching is organized around body systems and clinical themes.

Spiral Integration:

Core concepts are introduced at a basic level in early years and revisited later with increasing depth, complexity, and clinical application across the five-year continuum.

MBBS Program Competencies:

The program outcomes are mapped to the PM&DC 7-Star Doctor attributes to ensure regulatory graduate competencies are addressed.

PM&DC 7-Star Doctor Attribute	NMU Program Outcomes (MBBS)
1. Knowledgeable	Recognize the biological and clinical foundations of common health problems with relevance to community health needs.
2. Skillful	Apply foundational knowledge to clinical reasoning and medical decision-making.
3. Professional	Demonstrate ethical and professional behaviour in academic and clinical settings.
4. Scholar and Researcher	Engage in lifelong learning and scientific inquiry in the medical field.
5. Critical Thinker	Apply foundational knowledge to clinical reasoning and medical decision-making.
6. Leader and Role Model	Communicate effectively and function as a team member in interdisciplinary healthcare settings.
7. Community Health Promoter	Recognize the biological and clinical foundations of common health problems with relevance to community health needs.

Standardized Policies

- **Internal Assessment and Examination Policy:** The assessment structure comprises 20% Internal Assessment and 80% University Examination.
- **Attendance Policy:** A minimum of 75% attendance is mandatory for eligibility to appear in the examination.
- **Research, Anti-Plagiarism, and Mentorship Frameworks:** Undergraduate Research Ethics, Anti-Plagiarism, and Student Mentorship/Counselling are governed by the institutional NMU policy manual, prepared in accordance with HEC and PM&DC guidelines.

Dissemination of curriculum & Study Guide:

Comprehensive student study guides outlining learning objectives, teaching strategies, and assessment formats for all modules are officially published and distributed to enrolled students through the official Nishtar Medical University website at the start of the academic year.

Proposed Educational Strategies

To successfully deliver the integrated modular curriculum, the instructional methodology shifts from traditional passive teaching to active, student-centered learning. The selection of these educational strategies is highly dynamic and subject to contextual requirements, logistical feasibility, and the specific cognitive or psychomotor demands of each module.

- **Large Group Interactive Sessions (LGIS):** Traditional didactic lectures are replaced with interactive sessions. Faculty utilize questioning, think-pair-share techniques, and clinical case introductions to maintain engagement and promote higher-order thinking in large cohorts.
- **Case-Based Learning (CBL) & Problem-Based Learning (PBL):** Small group formats where students are presented with standardized clinical scenarios (e.g., a patient presenting with shortness of breath). These scenarios serve as the anchor for learning the underlying basic sciences, fostering clinical reasoning and problem-solving skills early in the curriculum.
- **Small Group Discussions (SGD):** Facilitated by faculty, these sessions allow 15–20 students to collaborate, discuss complex topics, and clarify concepts, thereby enhancing communication and teamwork.
- **Early Clinical Exposure (ECE):** Introduced from Year 1, students visit hospital wards, clinics, or community health centers. This provides immediate context for their basic science education and introduces them to the realities of patient care, empathy, and health systems.
- **Skill Lab & Practical Sessions:** Safe, simulated environments where students practice basic psychomotor and clinical skills (e.g., vital signs, spirometry, basic life support) using mannequins and standardized patients before interacting with real patients.
- **Self-Directed Learning (SDL):** Dedicated, timetabled hours provided to students to independently research, read, and reflect on specific topics. This strategy is critical for developing the lifelong learning skills required of a modern physician.

- **Clinical attachments** form a major teaching block in later years. Students rotate through wards, OPDs, emergency departments, and ICUs. They observe admissions, follow patient progress, and learn bedside examination from consultants and residents.
- **Ward rounds** are structured learning sessions. Students present patients, discuss differentials, and receive feedback on history and examination. This develops clinical reasoning and communication under supervision.
- **Outpatient department (OPD) exposure** allows students to see common diseases. They learn triage, follow-up care, and chronic disease management. Students observe doctor–patient interaction in real time.
- **Emergency department exposure** teaches acute care priorities. Students observe initial assessment, resuscitation steps, and rapid decision-making in trauma and medical emergencies.
- **Community medicine field visits** take students outside hospitals. They visit primary health centers, rural health units, schools, and vaccination programs. They observe public health delivery, disease prevention, and health education activities.
- **Research and audit projects** are included in many universities. Students learn study design, data collection, analysis, and presentation. This builds evidence-based thinking and critical appraisal skills.
- **Faculty clinical learning sessions** and **bedside teaching sessions** focus on direct patient interaction. Teachers demonstrate examination techniques, then students practice under supervision on real patients.
- **Tutorials, demonstrations,** and **grand rounds** support deeper learning. Complex cases are discussed across specialties, linking pathology, imaging, and management in a single session.
- **Observations in operation theatres**. Students observe live surgeries in general surgery, gynecology, ENT, orthopedics, and other specialties. They learn aseptic techniques, surgical anatomy, instrument handling, and team roles in the OT. Some rotations include scrub-in observation, where students stand inside the sterile field under supervision. This builds early familiarity with surgical environments and decision-making flow.

Implementation of the Curriculum

The successful execution of an integrated curriculum requires robust governance, interdisciplinary collaboration, and strategic resource management.

- **Curriculum Governance:** The overarching implementation is governed by the Curriculum Committee and the Department of Medical Education (DME). The DME acts as the central coordinating body, ensuring that disciplinary silos are broken down and that teaching is aligned with the defined macro and micro-maps.
- **Module Management Teams:** For every block/module, a Module Director (or Focal Person) is appointed, supported by an interdisciplinary team comprising both basic science and clinical faculty. This team collaboratively designs the timetable, selects the clinical themes, and writes integrated assessments.
- **Centralized Timetabling:** The timetable is managed centrally to ensure a seamless narrative flow. Subjects are sequenced logically (e.g., normal anatomy followed immediately by relevant physiology and biochemistry, culminating in clinical correlation) rather than being taught in isolation.
- **Faculty Development:** Continuous pedagogical training is mandatory. Faculty are actively encouraged and supported to complete certifications in Health Professions Education (CHPE).

Regular institutional workshops are conducted on interactive teaching methodologies, CBL facilitation, and the drafting of high-quality, clinically oriented MCQs and SEQs.

- **Infrastructure & Resource Allocation:** The institution commits to maintaining and upgrading essential infrastructure, including Wi-Fi-enabled campus spaces for SDL, fully equipped simulation laboratories, and small group tutorial rooms to support the active learning framework.

Curriculum Evaluation & Continuous Quality Improvement (CQI)

Curriculum evaluation is not a terminal event but a continuous, iterative process designed to identify gaps, reduce redundancies, and ensure the educational program remains responsive to evolving healthcare needs and PM&DC regulations.

- **Multi-Source Feedback Mechanisms:**
    - **Student Feedback:** Anonymous, standardized evaluation forms are administered at the conclusion of every module to assess the clarity of objectives, the effectiveness of teaching strategies, and the fairness of assessments.
    - **Faculty Feedback:** Instructors provide structured feedback regarding logistical challenges, student engagement levels, and the effectiveness of horizontal/vertical integration.
- **Assessment Analytics (Psychometrics):** The Department of Medical Education collaborates with the Examination Department to conduct post-hoc analyses of all major internal and university examinations. Metrics such as the Difficulty Index (p-value) and Discrimination Index (Point Biserial) are utilized to evaluate the reliability and validity of the curriculum's assessment tools.
- **Annual Curriculum Review:** At the end of each academic year, the Curriculum Committee convenes to review all collected data (feedback, assessment outcomes, and external examiner reports). Modifications are formally proposed, debated, and implemented for the subsequent academic cycle.
- **Alignment with WFME Standards:** The evaluation process strictly monitors the program's compliance with PM&DC and World Federation for Medical Education (WFME) standards, ensuring that graduates meet national requirements and are eligible for international postgraduate opportunities.

Glossary of Terms

Term	Operational Definition
Block	A major temporal division of the academic year containing one or more related modules, such as a block containing CVS and Respiration modules.
Module	A self-contained thematic unit of study integrating basic and clinical sciences around a body system or major theme, such as Blood and Immunity.
Spiral	A curricular design in which longitudinal themes are introduced at a basic level in early years and revisited with increasing complexity in later clinical years.
Theme	The central clinical, physiological, or conceptual focus organizing a segment of study.
Anchor	A primary clinical discipline, condition, or problem that grounds basic science learning.

Linker	A clinical scenario or topic used to connect multiple disciplines within an integrated teaching session.

Section 2: Curriculum Mapping

The MBBS curriculum is organized through a spiral model across five academic years.

The first two years represent **Spiral I**, where students develop core understanding of basic sciences through integrated system-based modules. Early clinical exposure, research, professionalism, communication, and leadership run throughout these years. Islamiat, Pakistan Studies, and Fehm-ul-Quran are also included as longitudinal components in Year 1 and Year 2.

The third and fourth years represent **Spiral II**, where students move toward paraclinical sciences, special pathology, and pre-clinical rotations. Basic science concepts are revisited with greater clinical relevance. Clinical clerkship, research, and PCL continue as year-long longitudinal themes.

The final year represents **Spiral III**, where learning is centered on supervised clinical clerkships and patient management. Students rotate separately through Medicine, Paediatrics, Surgery and Allied, and Gynaecology and Obstetrics.

This map shows that the curriculum progresses from foundational knowledge to applied clinical practice. It also highlights that longitudinal themes are not separate blocks. They continue across the academic year and support the development of knowledge, skills, professionalism, communication, leadership, and research orientation.

NISHTAR MEDICAL UNIVERSITY MULTAN

MBBS Curriculum Map

Phase / Spiral Level	MBBS Year	Block			
Spiral I: Basic Sciences & Early Clinical Exposure	**Year 1**	**Block I:** Foundation & MSK-I	**Block II:** MSK-II & Blood and Immunity		**Block III:** CVS & Respiration
		Clinical Clerkship, Research, PCL: Professionalism, Communication & Leadership			
		Islamiat, Pakistan Studies, Fahm-ul-Quran			
	Year 2	**Block IV:** Neuroscience-I & Neuroscience-II	**Block V:** Special Senses & Endocrine		**Block VI:** Genitourinary & GIT
		Clinical Clerkship, Research, PCL: Professionalism, Communication & Leadership			
		Islamiat, Pakistan Studies, Fehm-ul-Quran			
Spiral II: Paraclinical Sciences & Pre-Clinical Rotations	**Year 3**	**Block VII:** Fundamentals, Infectious Diseases & Chemotherapy	**Block VIII:** Cardiovascular, Blood & Inflammation, Respiratory & Endocrinology		**Block IX:** CNS & GIT, Skin & Neoplasia
		Clinical Clerkship, Research, PCL: Professionalism, Communication & Leadership			
	Year 4	**Block X:** Hematopoeitic & lymphoid, Infectious disease epidemiology, Breast & genetics, Population dynamics & nutrition + Eye-I, ENT-I	**Block XI:** lung & renal system + Environmental & occupational health, Hepatobiliary system & GIT Tumors, Biostatistics & Research+ Eye-II, ENT-II		**Block XII:** Reproductive system & Endocrine tumors, Study designs & medical ethics, musculoskeletal system, skin & CNS tumors, health system & noncommunicable diseases + Eye-III & ENT-III
		Clinical Clerkship, Research, PCL: Professionalism, Communication & Leadership			
Spiral III: Clinical Clerkships	**Year 5**	**Clerkship Rotation:** Medicine & Allied	**Clerkship Rotation:** Paediatrics	**Clerkship Rotation:** Surgery & Allied	**Clerkship Rotation:** Gynaecology & Obstetrics

Spiral Progression Matrix (Theme Based)

This framework illustrates the vertical linkage of the designated clinical themes across the curriculum. By keeping the progression generic to the domains of learning, it ensures comprehensive coverage of all relevant conditions within a system rather than prematurely narrowing the educational scope to a few specific diseases. Core concepts introduced at a foundational level in Spiral I are sequentially revisited in Spiral II (Paraclinical) and mastered in Spiral III (Clinical Clerkships).

This iterative, spiral approach aligns with modern adult learning theories by gradually increasing both the cognitive load and the clinical responsibility. In Spiral I, students build a robust mental scaffolding of normal human biology. As they progress into Spiral II, they utilize this established framework to analyze pathological deviations, pharmacological interventions, forensic implications, and broader public health impacts. Finally, in Spiral III, this accumulated theoretical knowledge is translated into advanced psychomotor skills, diagnostic reasoning, and ethical patient management directly at the bedside.

By continuously revisiting these overarching themes in a layered, progressive manner, the curriculum reinforces long-term memory retention, actively breaks down traditional disciplinary silos, and ensures a safe, competent transition from the classroom to independent clinical practice.

Integrated Module/Themes	Spiral I (Years 1 & 2)	Spiral II (Years 3 & 4)	Spiral III (Year 5)
Haematology / Blood & Immunity Anaemia / Pallor, Bleeding & Thrombotic Disorders, Infection, Transfusion Reaction	Normal gross structure, histology, embryology, physiological functions, and biochemical basis of the hematopoietic and immune systems.	Pathological mechanisms, pharmacological interventions, and public health/preventive aspects of blood and immune disorders.	Clinical assessment, diagnostic reasoning, and therapeutic management of hematological and immunological conditions in medical clerkships.
Musculoskeletal Joint Pain, Backache, Bone Aches, Muscle Weakness, Skin Rash / Itching	Normal structure, histology, embryological development, and biomechanical/biochemical foundations of the musculoskeletal and integumentary systems.	Pathophysiology of musculoskeletal and dermatological diseases, related pharmacology, forensic traumatology, and medicolegal aspects.	Clinical evaluation, diagnostic imaging interpretation, and surgical/medical management in orthopedics, dermatology, and rehabilitation.
Cardiovascular Chest Pain, Palpitations, Shortness of Breath, BP (High/Low), Leg Pain/ Oedema	Normal gross/microscopic anatomy, developmental embryology, physiological hemodynamics, and biochemical markers of the cardiovascular system.	Pathological alterations, systemic cardiovascular pharmacology, and public health epidemiology of cardiovascular diseases.	Patient evaluation, diagnostic reasoning, and comprehensive medical and surgical management of cardiovascular conditions in clinical rotations.
Respiratory Chest Wall Injury Shortness of Breath Cough & Haemoptysis Chest Pain	Normal structure, histology, embryology, pulmonary physiology, and biochemical basis of the respiratory system.	Pathophysiological mechanisms of respiratory diseases, respiratory pharmacology, and community medicine/environmental health aspects.	Clinical assessment, diagnostic reasoning, and medical/surgical patient management in pulmonology and intensive care clerkships.
Neurosciences Headache, Numbness/Tingling Paraplegia, Hemiplegia Syncope, Coma & Head Injury Seizures, Tremors	Normal neuroanatomy, histology, neurodevelopment, neurophysiology, and biochemical basis of the central and peripheral nervous systems.	Neuropathology, neuro-pharmacology, forensic psychiatry, and public health impacts of neurological and psychiatric disorders.	Clinical neurological examination, diagnostic reasoning, and therapeutic management in neurology, neurosurgery, and psychiatry clerkships.

Integrated Module/Themes	Spiral I (Years 1 & 2)	Spiral II (Years 3 & 4)	Spiral III (Year 5)
Disturbed Mood/Sleep			
GIT & Hepatology Difficulty/Pain in Swallowing, Vomiting Pain Abdomen Diarrhoea & Constipation Jaundice Distension Bleeding per Rectum	Normal structure, histology, embryological development, gastrointestinal physiology, and biochemical metabolism.	Pathological mechanisms, gastrointestinal pharmacology, and public health/preventive aspects of GI and hepatobiliary diseases.	Clinical assessment, diagnostic reasoning, and comprehensive medical and surgical management in gastroenterology and general surgery clerkships.
Renal & Genitourinary Dysuria, Flank Pain Urine Output variations Incontinence Facial Swelling & Oedema	Normal structure, histology, embryology, renal physiology, and biochemical basis of the excretory and genitourinary systems.	Renal and genitourinary pathology, relevant pharmacology, and public health/preventive aspects of renal diseases.	Clinical evaluation, diagnostic reasoning, and therapeutic management in nephrology and urology clerkships.
Endocrine & Reproductive Tall/Short Stature Goitre Excessive Thirst/Urination Weight Gain Pregnancy & Child Birth Infertility&Contraception, Scanty/Heavy Menses	Normal structure, histology, embryology, physiological regulation, and biochemical basis of the endocrine and reproductive systems.	Pathophysiology of endocrine and reproductive disorders, relevant pharmacology, and community medicine (maternal and population health).	Clinical assessment, diagnostic reasoning, and medical/surgical management in endocrinology, obstetrics, and gynecology clerkships.
PCL (Professionalism, Communication, Leadership)	Normal baseline of medical ethics, basic communication models, and fundamental principles of professionalism.	Application of bioethics in research, handling medicolegal scenarios, and communication in complex situations (e.g., breaking bad news).	Leadership in clinical teams, ethical decision-making in patient management, and advanced professional communication in clerkships.

4th PROFESSIONAL MBBS MODULAR CURRICULUM STUDY GUIDE-2026 NISHTAR MEDICAL UNIVERSITY MULTAN

1. PREAMBLE

This curriculum meets the standards of PMDC, and our students on completion of the program will develop the required competencies as defined worldwide for a graduate doctor. The curriculum framework, for MBBS year IV has been developed by the faculty of constituent / affiliated colleges in collaboration with Academic Directoraie of NMU.

2. CURRICULUM PERSPECTIVE

This curriculum has been developed considering constructivist and behaviorist approaches with elements of the cognitivist approach.

It allows students to construct their own knowledge based on prior learning and apply it in purposeful activities requiring clinical decision-making, problem solving, and professional judgment.

3. CURRICULAR ORGANIZATION AND STRUCTURE

Year IV focuses on clinical application of disease processes, management principles, and integration of knowledge gained in earlier years.

The total academic year will have 39 weeks of teaching.

There will be 06 modules in 3 blocks.

The duration of each Block 10, 11& 12 will be 11weeks each respectively.

Additional content that does not directly fit the central theme of modules may be included in relevant modules.

The assessment framework ensures that clinical competence and application of knowledge are emphasize

The content and intended learning outcomes are mandatory to be taught at the required level, as end-year professional assessment will be based on them.

1. Competencies

The focus of this curriculum is on the roles of a general physician as identified in by PMDC.These are skillful, knowledgeable, community health promoter, critical thinker, professional and role model, researcher,and leader.Generic competencies addressed in year IV are

a. Medical Knowledge
b. Procedural skills
c. Community Health Promoter
d. Clinical skills
e. Problem solving
f. Communication skills
g. Empathy
h. Professionalism
i. Research

2. Outcomes

By the end of this year, students will be able to

Recognize the etiology, pathogenesis, and pathophysiological basis of major diseases affecting different organ systems.

Recognize the role of pathology in diagnosis, prognosis, and management of diseases.

Interpret routine laboratory investigations, histopathology findings relevant to systemic diseases.

Apply knowledge of pathology in solving clinical scenarios and case-based problems.

Interpret measurement of all health problems/issues affecting people at individual and conununity levels right from birth to death by adopting statistic, research and ethical approaches.

Design and recommend measures for prevention , protection and education about the identified problems.

Analyze and present collected data regarding the health issues and health services.

Develop a research proposal for a given topic.

3.Aim

- This curriculum also aims to improve different skills of the future doctors including communication, leadership & management and research skills and inculcate ethical values and professionalism

Table-I: Academic Calendar Year IV

Blocks	X (13+1=14weeks)			XI (10+1=11weeks)			XII (10+1=11weeks)		
36wks	8	5	1	5	5	1	5	5	1
Modules	Hematopoietic lymphoid system, Infectious disease epidimology,Eye 1A,ENT1A	Breast & Genetics, Population Dynamics & nutrition, Eye 1B,ENT1B	**EOB**	Lung diseases & Renal system, Environmental & occupational health, Eye 2A,ENT2A	Hepatobillary system & GIT tumors, Biostatistics & Research methodology, Eye 2B, ENT 2B		Reproductive system & Endocrine tumors, Study designs & medical Ethics, Eye 3A,ENT 3A	Musculoskeletal system ,Skin &CNS Tumors, Health system & non communicable diseases, Eye 3B,ENT 3B	**EOB**
Modules	**IXX**	**XX**		**XXI**	**XXII**		**XXIII**	**XXIV**	

**EOB=End of Block assessment*

Tools of Assessment

- MCQs
- SEQs
- OSPE
- VIVA/ OSVE
- PRACTICAL

TOTALMARKS

- 1000

Criteria for Assessment:

- Total marks for 4th Prof.Exam will be 900.
- * Internal assessment: 100 Marks

TABLE OF SPECIFICATION 4th Year MBBS

The Table of Specifications provided will be used for the three papers of the 4th professional examination.

TABLE–II

Papers	Marks (marks)	Theory (marks)	Viva&OSPE (marks)	Total Marks (marks+I.A)
Paper-I(Block-10)	300	150	150	1000 (900+100)
Paper-II(Block-11)	300	150	150	
Paper-III(Block-12)	300	150	150	

***I.A=Internalassessment**

TABLE–III (Marks distribution subjects & blocks wise)

BLOCK- X

	Community Medicine	Special pathology	ENT	EYE	Anatomy	Physio	Biochem	Total
MCQ (1 Mark each)	20	20	10	10	05	05	05	75
SEQs (5 Marks each)	5x5=25	4x5=20	3x5=15	3x5=15				75
Written (MCQs + SEQs)	20+25=45	20+20=40	10+15=25	10+15=25				150
OSPE (5 Marks for unobserved)	3x5=15 Unobserved / 1x5=5 Observed = 20	3x5=15 Unobserved / 1x5=5 Observed = 20	3x5=15 UnObserved = 15	3x5=15 UnObserved = 15				70
VIVA	09+09+02=20	09+09+02=20	09+09+02=20	10+10=20				80
OSPE+ viva	20+20=40	20+20=40	15+20	15+20				150
Internal Assessment	10	10	7	7				34
Subject vise Marks	95	90	67	67	05	05	05	334

Table-IV	BLOCK- XI							
	Community Medicine	Special pathology	ENT	EYE	Anatomy	Physio	Biochem	Total
MCQ (1 Mark(each)	20	20	10	10	05	05	05	75
SEQs (5 Marks each)	5x5=25	4x5=20	3x5=15	3x5=15				75
Written (MCQs + SEQs)	20+25=45	20+20=40	10+15=25	10+15=25				150
OSPE (5 Marks for unobserved)	3x5=15 Unobserved / 1x5=5 Observed = 20	3x5=15 Unobserved / 1x5=5 Observed = 20	3x5=15 Un-observed = 15	3x5=15 Un-observed = 15				70
VIVA	09+09+02=20	09+09+02=20	09+09+02=20	10+10= 20				80
OSPE+ viva	20+20=40	20+20=40	15+20	15+20				150
Internal Assessment	10	10	6.5	6.5				33
Subject vise Marks	95	90	66.5	66.5	05	05	05	333

Table-V BLOCK- XII								
	Community Medicine	Special pathology	ENT	EYE	Anatomy	Physio	Biochem	Total
MCQ (1 Mark(each)	20	20	10	10	05	05	05	75
SEQs (5 Marks each)	5x5=25	4x5=20	3x5=15	3x5=15				75
Written (MCQs + SEQs)	20+25=45	20+20=40	10+15=25	10+15=25				150
OSPE (5 Marks for unobserved)	3x5=15 Unobserved; 1x5=5 Observed; 20	3x5=15 Unobserved; 1x5=5 Observed; 20	3x5=15 UnObserved; 15	3x5=15 UnObserved; 15				70
VIVA	09+09+02=20	09+09+02=20	09+09+02=20	10+10=20				80
OSPE+ viva	20+20=40	20+20=40	15+20	15+20				150
Internal Assessment	10	10	6.5	6.5				33
Subject vise Marks	95	90	66.5	66.5	05	05	05	333

Table-VI

Subjects	PAPER-I (Block-10)		PAPER-II (Block-11)		PAPER-III (Block-12)		Total subject vise		Total Marks
	Marks	Internal assessment 10%	Marks	Internal assessment 10%	Marks	Internal assessment 10%	Marks	Internal assessment 10%	
	300	34 marks	300	33 marks	300	33 marks	900	100	1000
Special Pathology	80	10	80	10	80	10	240	30	270
Community Medicine	85	10	85	10	85	10	255	30	285
ENT	60	7	60	6.5	60	6.5	180	20	200
EYE	60	7	60	6.5	60	6.5	180	20	200
Anatomy	05	0	05	0	05	0	15	0	15
Physiology	05	0	05	0	05	0	15	0	15
Biochemistry	05	0	05	0	05	0	15	0	15

Syllabus

BLOCK-X (11 Weeks)
Module IXX
4th Year MBBS
Module Duration: 06 weeks
Hematopoietic lymphoid system, Infectious disease epidimology,Eye 1A,ENT1A

Special Pathology

Unit	Cognitive learning Topic Assessed via MCQs, SEQs	Learning Outcome	Small Group Discussion Topics Assessed via MCQS/OSPE/OSVE,SEQs	Learning Outcome	Self-Learning Assessed via MCQS
Hematopoietic& Lymphoid System					
WBCs & Lymphoid disorders	Leukopenia (Neutropenia, Lymphopenia) Leukocytosis (Neutrophilia, Lymphocytosis, Eosinophilia, Monocytosis)	• Define leukopenia and its types • Describe causes and pathophysiology • Identify clinical features • Interpret CBC findings • Define leukocytosis and its types • List causes • Explain underlying pathophysiology • Interpret CBC and differential count	CBC interpretation and case discussion on leukopenia	• Identify type of leukopenia • Correlate clinical scenario with lab data	• leukopenia •neutropenia • Viral lymphopenia
			Peripheral smear analysis of leukocytosis	• Identify type of leukocytosis on smear • Correlate with clinical presentation	• Reactive vs pathological leukocytosis • Stress, infection, inflammation causes
	AML ALL	• Define AML and classify subtypes • Describe pathogenesis and risk factors • Recognize clinical features • Outline diagnostic approach • Define ALL and its subtypes • Describe pathogenesis and risk factors • Recognize clinical and lab features • Outline diagnostic workup	Peripheral smear and bone marrow in AML	• Identify myeloblasts and Auer rods • Suggest appropriate diagnostic tests	• AML cytogenetics • Prognostic factors
			Peripheral smear and bone marrow in ALL	• Identify lymphoblasts • Differentiate from AML • Indicate immunophenotyping	• Cytogenetic abnormalities • Prognostic scoring • CNS involvement
	Myeloproliferative neoplasm -CML	• Describe classification of MPN WHO	CBC and peripheral smear	• Identify myeloid left shift, basophilia • Correlate findings with phase	• BCR-ABL gene • Philadelphia

		-pathogenesis OF ET,PRV,PM ,clinical features and bone morphology,brief management CML linical presentation,pathogenesis,bone and cbc morphology and phases • Recognize lab features (CBC, smear)	in,ET,PRV,PMF and CML		Chromosome • Prognostic scoring
	CLL	• Define CLL and pathophysiology • Recognize clinical/lab features	Peripheral smear and lymphocyte morphology	• Identify smudge cells • Interpret lymphocytosis • Suggest flow cytometry	• Immunophenotyping • Prognostic markers
	Multiple Myeloma (MM)	• Define MM • Describe pathogenesis and risk factors • Recognize clinical/lab features including M protein • Outline diagnostic workup	Bone marrow examination and serum protein electrophoresis	• Identify plasma cells • Recognize paraprotein patterns • Correlate with clinical features	• CRAB criteria • Prognostic markers
	Hodgkin Lymphoma (HL)	• Define HL • Describe pathogenesis and histological types • Recognize clinical features • Outline diagnostic approach	Lymph node biopsy interpretation in HL	• Identify Reed-Sternberg cells • Correlate histology with clinical findings	• Staging of HL • Immunohistochemistry markers
	Non-Hodgkin Lymphoma (NHL)	• Define NHL and classify common types • Recognize clinical/lab features • Outline diagnostic evaluation	Lymph node biopsy and morphology in NHL	• Identify small vs large cell morphology • Suggest immunophenotyping and flow cytometry	• Common subtypes • Extranodal involvement • Prognostic factors
	MDS	Define MDS WHO classification,clinical presentation Explain pathogenesis Describe dysplastic changes seen in erythroid,myeloid and megakaryocytic lineages,cytogenetic chan	MDS	Identify abnormal peripheral blood findings suggestive of MDS, Recognize dysplastic features in different hematopoietic lineages,interpret basic lab data	• MDS classification ,Cytogenetic abnormalities,Ring sideroblasts, ,Concept of blast percentage in MDS Spleen – Pathology of White Cell Disorders Congestive

					splenomegaly • Hypersplenism • Infiltrative disorders
RBCs &Platlatets disorders	Classification of anemias, Iron deficiency anemia	Define anaemia classify it Describe the pathophysiology of iron deficiency anaemia. Describe the clinical features of iron deficiency anaemia. List the laboratory investigations	Collection of blood Sample Interpret CBC Peripheral film & iron studies	Estimation of HB. TLC , DLC , ESR Reticulocyte count Interpret complete blood count (CBC) findings in patients with anaemia. Analyze red cell indices to identify microcytic anaemia. Identify characteristic features on peripheral blood smear in IDA Interpret iron studies (serum iron, ferritin, TIBC) in iron deficiency anaemia. Correlate clinical scenarios with laboratory findings	Microcytic Anemia &Macrocytosicanaemia Dietary sources of iron causes & Risk factors of iron deficiency anaemia
	B & Alpha thalassemia	Define thalassaemia and classify it into α- and β-thalassaemia. Describe the genetic basis and inheritance pattern of thalassaemia. Describe normal globin chain synthesis and imbalance in thalassaemia. Explain complications of thalassaemia major (iron overload, skeletal deformities, infections)	CBC & Peripheral film &Hb electropheresis	Interpret CBC and red cell indices in thalassaemia. Identify peripheral blood smear features: Microcytosis and hypochromia Target cells Nucleated RBCs Interpret Hb electrophoresis / HPLC patterns in: β-thalassaemia trait and major	molecular genetics of α- and β-thalassaemia. prevalence and burden of thalassaemia in Pakistan. Explore antenatal screening and prenatal diagnosis Sickle cell anemia

				HbH disease Differentiate thalassaemia trait from iron deficiency anaemia on laboratory grounds.	
	Anemia of chronic disease, Aplastic anemia, Pure red cell aplasia	Describe normal hematopoiesis & marrow regulation Define aplastic anaemia, anaemia of chronic disease, and pure red cell aplasia. Explain the pathophysiology of aplastic anaemia, including immune-mediated marrow suppression.	CBC, peripheral smear& bone marrow findings	Differentiate aplastic anaemia, ACD, and PRCA based on: Peripheral film findings Reticulocyte count Bone marrow findings	Review causes of acquired aplastic anaemia (drugs, chemicals, viral infections). Compare iron deficiency anaemia vs anaemia of chronic disease. Causes of pure red cell aplasia
	Megaloblastic anemia	Define megaloblastic anaemia Describe the pathophysiology of megaloblastic anaemia (vitamin B12 and folate deficiency). Describe the clinical features of megaloblasticanaemia. List the laboratory investigations	CBC ,peripheral film &serum B12 & folate level	Interpret complete blood count (CBC) findings in patients with anaemia. Analyze red cell indices (MCV, MCH, MCHC) to identify macrocytic anaemia. Identify characteristic features on peripheral smear	1-Dietary sources of Vit B12 &Folate 2-Causes & Risk factors of Megaloblastic anaemia. 3-Complications of megaloblasticanaemia
	Immune and Non-immune hemolytic anemias	Define hemolytic anaemia and classify immune hemolytic disorders.	Case scenario: adult with anemia, jaundice, positive DAT Peripheral blood smear in	Apply clinical and laboratory findings to diagnose AIHA & non immune hemolytic anaemia. Identify peripheral smear features of	Secondary causes of AIHA (SLE, lymphoproliferative disorders, drugs)

		Explain mechanisms of antibody-mediated hemolysis. Differentiate warm and cold antibody AIHA. Describe the pathogenesis of alloimmune hemolytic anaemias. Explain the principles and interpretation of Coombs tests.Classify non-immune hemolytic anaemias. Explain mechanisms of red cell destruction without antibodies. Describe common hereditary non-immune hemolytic disorders. Discuss acquired causes of non-immune hemolysis	AIHA (spherocytes, polychromasia) Interpretation of DAT and IAT results Peripheral smear findings	immune & non immune hemolysis. Interpret direct and indirect Coombs test results. Interpret laboratory markers suggestive of hemolysis. Use DAT results to differentiate immune from non-immune causes.	Drug-induced immune hemolytic anaemia Complications of immune hemolytic anaemia .Genetic basis of hereditary hemolytic anaemias Preventive strategies and genetic counseling
	Hereditary disorders of red cell membrane and enzymes	Describe normal structure and function of the red cell membrane. Discuss the pathogenesis of hereditary spherocytosis and elliptocytosis. Outline the clinical and laboratory features of major membrane disorders. Describe the metabolic pathways essential for red cell survival. Discuss the pathogenesis of G6PD and PK deficiency.	Peripheral blood smear findings in HS and HE & Case based discussion of child with anemia, jaundice, splenomegaly	Identify spherocytes and elliptocytes on peripheral smear. Identify screening test results. Apply clinical and laboratory data to diagnose membrane disorders. Identify triggers of hemolysis in G6PD deficiency. Counsel patients regarding avoidance of precipitating factors.	WHO Classification of G6PD variants Triggers of hemolysis in G6PD deficiency. Counsel patients regarding avoidance of precipitating factor Molecular genetics of red cell membrane disorders

		Outline clinical and laboratory features of common enzyme deficiencies.			
	Sickle cell disease,	Define sickle cell disease and explain its genetic basis. Describe the molecular and pathophysiological mechanisms of sickling. Classify different forms of sickle cell disorders. Discuss the major clinical manifestations and complications. Outline diagnostic methods & counselling	Case scenario: child with anemia, pain crisis, and jaundice Peripheral blood smear findings: Screening tests & Confirmatory tests: Hemoglobin electrophoresis / HPLC	Interpret clinical scenarios suggestive of sickle cell disease. Identify characteristic peripheral smear features of SCD. Differentiate screening from confirmatory diagnostic tests. Distinguish sickle cell trait from sickle cell disease. Recognize precipitating factors and common complications	Infections in sickle cell disease and functional asplenia Sickle cell disease in pregnancy Neonatal screening and genetic counseling Newer therapies: Hydroxyurea Chronic transfusion therapy Stem cell transplantation Gene therapy (overview)
	Disorders of hemostasis,Hemophilia, Von Willebrand disease	Describe the normal process of hemostasis. Classify disorders of hemostasis based on the underlying defect. Explain the pathogenesis and inheritance of hemophilia and vWD. Compare clinical features of platelet vs coagulation factor disorders.	Case scenario: child with recurrent joint bleeding (Hemophilia) Case scenario: mucocutaneous bleeding in a young female (vWD) Interpretation of coagulation profile:	ply clinical features to suspect specific bleeding disorders. Interpret coagulation test results in hemophilia and vWD. Differentiate platelet disorders from coagulation factor deficiencies. Formulate a probable diagnosis	Severity classification of hemophiliaGenetic counseling and carrier detection

		Outline basic laboratory tests used in bleeding disorders.	Isolated prolonged APTT Normal PT with prolonged bleeding time	based on case scenarios.	
	,Thrombotic microangiopathies (TMAs),	Define thrombotic microangiopathy and explain its pathogenesis. Classify different types of TMAs. Describe the role of ADAMTS13 and complement system in TTP and aHUS. Correlate pathological mechanisms with clinical manifestations. Outline key laboratory features suggestive of TMA.	Case scenario Peripheral blood smear interpretation Interpretation of laboratory parameters: Platelet count LDH Bilirubin Coombs test (negative) Differentiation between: TTP vs HUS TMA vs DIC	Recognize clinical presentations suggestive of TMA. Identify schistocytes and features of MAHA on peripheral smear. Interpret laboratory findings supporting a diagnosis of TMA. Differentiate TTP, HUS, and DIC based on clinical and lab data.	Pregnancy-associated TMAs (HELLP, postpartum TTP) Drug-induced and transplant-associated TMA Role of plasma exchange in TTP
	Disseminated intravascular coagulation.	Define disseminated intravascular coagulation. Explain the underlying pathophysiological mechanisms of DIC. Differentiate acute from chronic DIC. Outline characteristic laboratory findings seen in DIC	Case scenario Interpretation of laboratory investigations: Platelet count PT and APTT Fibrinogen level D-dimer / FDPs Peripheral blood smear Use of scoring systems (ISTH DIC score)	Recognize clinical situations suggestive of DIC. Interpret coagulation profiles consistent with DIC. Identify peripheral smear features associated with DIC. Differentiate DIC from other microangiopathies Apply basic scoring criteria to support a diagnosis of DIC.	List common clinical conditions associated with DIC. Prognosis and complications of DIC

	Blood grouping		Principles of blood grouping ABO Blood Grouping Interpretation of results Rh (D) Blood Grouping Blood techniquies	Explain the principle of antigen–antibody reactions used in blood grouping. Perform and interpret ABO and Rh blood grouping. Differentiate forward and reverse grouping.	Pre-analytical and technical errors in blood grouping
	Transfusion reactions	Describe the types, immunological mechanisms, clinical features, laboratory findings, and management strategies of transfusion reactions. Differentiate between immune-mediated and non-immune-mediated reactions.	Acute hemolytic, non-hemolytic& Delayed Transfusion Reactions Laboratory Evaluation of Transfusion Reactions	Recognize clinical features of common transfusion reactions. Differentiate immune from non-immune transfusion reacti immediate management steps during a transfusion reaction. Interpret basic laboratory investigate	Differentiation between TRALI and TACO Role of leukoreduction& irradiation in preventing reactions

COMMUNITY MEDICINE

TOPIC	Learning Objectives (The student should be able to...)	Essential Topic	Supplementary Topic	Self-Directed Learning
Infectious Disease Epidemiology **Communicable Disease Control (1)**	Highlight the importance of community medicine Interpret terms used for infectious diseases (e.g., epidemic, endemic, zoonosis). Illustrate the Epidemic Curve. Comprehend the objectives and steps of investigating an epidemic. Recommend disease control measures. Identify and suggest methods of sterilization and disinfection. Apply levels of prevention and intervention measures.	Dynamics of Infections: Host, Agent, Environment; Modes of Transmission. Respiratory (TB, Measles) & Intestinal (Polio, Typhoid).	Draw and interpret Epidemic Curves (Point source, Propagated). Calculation of Mortality Rates and Ratios. Sterilization & Disinfection.	Introduction to Community Medicine and Public Health. Natural history of disease. Changing patterns of disease.
Emerging/Re-emerging & Hospital Infections	Differentiate between emerging and re-emerging diseases and their causes/control. Demonstrate an appropriate response to an epidemic. Analyze the factors causing Nosocomial Infections and their prevention. Apply principles of Hospital Waste Management.	Nosocomial Infections Prevention strategies. Anti-microbial Resistance (AMR).	-	Factors responsible for emerging and re-emerging infections.
Immunology and Vaccination	Describe pre-requisites of vaccination (e.g., cold chain, hazards, precautions). Justify the use of different types of vaccines. Define and explain the components of the Expanded Program on Immunization (EPI). Plan a vaccination schedule according to current protocols including PCV-13, the two-dose IPV schedule, and TCV.	Host defenses, Immunizing agents (active/passive), EPI schedule, Herd immunity, Cold chain, AEFI investigation.	**Field Visit: EPI Centre.** Recent EPI schedule updates. Cold chain equipment (Cold Box). Identification of rashes.	Recent advances in vaccines and cold chain technology. Plan a vaccination schedule including PCV-13, the two-dose IPV schedule, and TCV. Explain the rationale for the 9-month triple-injection visit.

EYE 1A

ENT 1A

BLOCK & MODULE	THEME (TOPIC)	LEARNING OUTCOMES	COURSE CONTENTS	ASSESSMENT METHODS	SELF DIRECTED LEARNING
BLOCK X MODULE A	**Furunculosis (Boil)**	• Define furunculosis • Recognize clinical features • Outline management	• Etiology (Staphylococcus) • Predisposing factors • Symptoms & signs • Complications • Medical & surgical treatment	MCQs SAQs OSCE Structured Viva	• Anatomy of External Ear • Physiology of Ear • Anatomy of vestibular system • Physiology of vestibular system • Pathology of vestibular system • Balance mechanism • Tumor of the External Ear • Wax (Cerumen Impaction) • Otomycosis • Foreign Body in Ear • Traumatic Tympanic Membrane Perforation Anatomy of Middle Ear
	Perichondritis	• Describe causes • Differentiate from cellulitis • Plan management	• Etiology (trauma, piercing) • Clinical features • Complications (cauliflower ear) • Antibiotics • Surgical drainage	MCQs SAQs OSCE Structured Viva	
	Otitis Externa	• Classify types • Identify organisms • Manage cases	• Acute diffuse OE • Chronic OE • Bacterial causes • Clinical features • Investigations • Aural toilet & topical therapy	MCQs SAQs OSCE Structured Viva	
	Malignant Otitis Externa	• Recognize high-risk patients • Understand pathophysiology • Outline management	• Definition • Risk factors (Diabetes) • Pseudomonas infection • CT/MRI • Long-term IV antibiotics	MCQs SAQs OSCE Structured Viva	
	Keratosis Obturans	• Differentiate from wax • Understand pathogenesis • Describe management	• Definition • Etiology • Clinical features • Radiology • Treatment	MCQs SAQs OSCE Structured Viva	

	Facial Nerve Anatomy & Paralysis	• Describe course of facial nerve • Identify causes of paralysis • Plan investigations • Outline management	• Intratemporal course • Causes: infective, traumatic, neoplastic • HRCT temporal bone • MRI • ENoG & EMG • Medical management (steroids) • Surgical decompression	MCQs SAQs OSCE Structured Viva	• Anatomy of Inner Ear • Causes of Hearing Loss • Deaf Child Causes • Deaf Child Assessment • Deaf Child Rehabilitation Types of Hearing Loss

BLOCK-X (11 Weeks)
Module XX
4th Year MBBS
Module Duration: 05 weeks
Breast & Genetics, Population Dynamics & nutrition, Eye 1B,ENT1B

Special Pathology

Unit	**Cognitive learning Topic Assessed via MCQs,**SEQs	**Learning Outcome**	**Small Group Discussion Topics Assessed via MCQs,OSPE,VIVA,**SEQs	**Learning Outcome**	**Self Learning Topics Assessed via MCQs,**SEQs
BREAST total	Normal Structure & Physiology	•Describe the gross and microscopic anatomy of the breast. •Explain normal hormonal influences on breast development and cyclical changes.	Benign lesions of breast	Identify and describe common benign lesions of breast	Benign breast disorders. Rick factors and genetics. Prognostic and predictive factors
	Inflammatory & Non-neoplastic Conditions	• Identify and describe common inflammatory conditions, including:	Breast carcinoma microscopic variants	Discuss the microscopic variants of breast carcinoma	Congenital disease of breast

		• Acute mastitis • Breast abscess • Explain the pathology and clinical relevance of: • Fibrocystic changes • Duct ectasia • Fat necrosis			
	Benign Breast Tumors	• Describe the pathology, clinical features, and prognosis of common benign lesions: • Fibroadenoma • Phyllodes tumor • Intraductal papilloma • Differentiate benign from malignant breast lesions based on: • Gross appearance • Histological features • Clinical behavior	Pathogenesis and risk factors of carcinoma	Discuss the risk factors, etiology and pathogenesis of breast carcinoma	Prognostic factors
	Malignant Breast Tumors Molecular classification of breast carcinoma	• Describe the etiology and risk factors for breast carcinoma. • Classify common types of breast carcinoma, including: • Ductal carcinoma in situ (DCIS) • Lobular carcinoma in situ (LCIS) • Invasive ductal carcinoma • Invasive lobular carcinoma • Recognize basic histopathological features of breast carcinoma.	Histological features including gross & microscopic findings of neoplastic breast lesions	Identify gross & microscopic features	Prognostic Factors
		• Classify breast carcinoma on the basis of (ER/PR, HER2)	Screening & Diagnosis	Explain routes of spread: • Local invasion	Major Prognostic and predictive Factors

				• Lymphatic spread Hematogenous spread • Histological grade • Hormone receptor status (ER/PR, HER2)	
	Diseases of male breast	• Discuss benign and malignant diseases of male breast • Clinical presentation (lump, pain, nipple discharge) • Radiological findings • Appreciate the role of pathology in treatment planning.	Etiology & morphology	Describe the Morphological features of male breast diseases	Gynaecomastia
	Prevention & Public Health RelevanceLect 2	•Discuss breast cancer awareness, screening programs, and early detection. • Recognize the importance of pathology in reducing morbidity and mortality.	Screening & Diagnosis	Explain routes of spread: • Local invasion • Lymphatic spread • Hematogenous spread • Identify major prognostic and predictive factors, such as: • Tumor size • Lymph node status • Histological grade • Hormone receptor status (ER/PR, HER2)	
Genetics total 6 lect	ntroduction to the genetics Types of mutations	● Define genetics and explain its importance in understanding disease mechanisms. ● Describe the main types of mutations and their molecular consequences.	Transmission pattern of single gene disorders. Molecular and biochemical basis of single gene disorders.	Explain the Mendelian patterns of inheritance for single-gene disorders. Describe the molecular and biochemical mechanisms underlying single-gene disorders.	Ehlers Danlos syndrome
	Disorders	Explain how mutations in	Cystic fibrosis	Describe the genetic defect in the CFTR	Phenylketonuria.

	associated with defects in structural proteins. Marfan syndrome.	structural protein genes cause connective tissue disorders. Describe the clinical and molecular features of Marfan syndrome.		gene and its molecular consequences Explain the pathogenesis of cystic fibrosis in relation to chloride transport. Recognize the clinical manifestations and diagnostic approaches for cystic fibrosis.	Galactose mia
	Disorders associated with defects in receptor proteins. Familial hypercholesterol emia.	Describe the genetic and biochemical basis of familial hypercholesterolem ia. Explain how receptor defects alter lipid metabolism and lead to atherosclerosis.	Mucopolysacch aridoses Glycogen Storage Diseases		Tay_sachs disease Niemann-Pick Disease
	Disorders associated with defects in enzymes. Lysosomal storage diseases. Gaucher's disease.	Explain how enzyme deficiencies lead to substrate accumulation and cellular injury. Classify lysosomal storage diseases with key examples. Describe the pathogenesis and clinical features of Gaucher's disease.	Multigenic Disorders Chromosomal disorders. → Normal karyotype. → Numerical abnormalities → Structural abnormalities	Overview with examples. Differentiate between numerical and structural chromosomal abnormalities Recognize a normal karyotype.	22q11.2 deletion syndromes .
	Genetic disorders Lec4involving autosomes. → Down's syndrome.	Explain the genetic basis and clinical manifestations of Down syndrome.	Disorders of sex chromosomes. Klinefelter syndrome. Turner syndrome.	Describe the karyotypic abnormalities in Klinefelter and Turner syndromes. Explain the pathogenesis and clinical feature of chromosome disorders.	Mitochond rial mutations.

	Single gene disorders with non-classic inheritance. Trinucleotide repeats mutations. Genomic imprinting.	Describe the mechanism and clinical examples of trinucleotide repeat expansion disorders. Explain the conceps of genomic imprinting and associated disorders.	Molecular analysis of genomic alterations. Polymorphic markers and molecular diagnosis. Epignetic alterations. RNA analysis.	Describe how polymorphic markers are used in molecular diagnosis. Explain common methods of genomic and RNA analysis in molecular pathology. Discuss the role of epigenetic modifications in gene expression and disease.	
	Diagnostic methods and indications for testing. PCR and detection of DNA sequence alterations.	Identify indications for genetic testing in inherited disorders. Explain the principles and applications of polymerase chain reaction (PCR). Describe methods for detecting specific DNA sequence alterations.			

COMMUNITY MEDICINE

Demography and Family Planning	Relate fertility and population growth to demographic principles. Calculate demographic equation and indicators. Interpret population pyramids and predict demographic trends. Explain Demographic Transition and Trap. Select appropriate family planning methods. Counsel individuals on contraceptive tools and methods.	Population dynamics (fertility, mortality, migration). Demographic cycle/transition. Census.	**House Hold Survey** Interpretation of population pyramids. **Field Visit: Family Planning centre** Counseling for contraceptive methods.	Abortion laws/ethics. Terminal methods of contraception.
RMCH & School Health	Comprehend the rationale of Reproductive Health and Safe Motherhood (antenatal, peri-natal, postnatal care). Determine factors contributing to high Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR) and formulate interventions. Plot and interpret growth charts. Assess the degree of dehydration. Educate mothers on breastfeeding, weaning, and EPI. Define Geriatrics and suggest preventive measures for common problems of old age. objectives and components of School Health Services (SHS). Identify common health problems and environment issues in schools. Provide First Aid and diagnose/refer common ailments. Inspect schools and advise modifications. Educate students for healthful behaviour.	Antenatal, Prenatal, and Intranatal care. KMC. Indicators of MCH Care. Integrated Management of Childhood Illness (IMCI).	Neonatal Care. Low Birth weight. Baby friendly hospitals initiative. Growth Chart interpretation. IMCI (diarrhea and RTI).	Care of Children. Infancy feeding. Congenital Anomalies. School health services. Rights of Child. Adolescent health. Geriatrics.
Nutrition and Deficiency Diseases	Define terminologies related to food and nutrition. Classify and comprehend the importance of food groups, minerals, and vitamins. Describe a balanced diet. Relate states which alter energy requirement. Identify major nutritional problems (PEM, IDD, Anemia,Double Burden of Malnutrition, Stunting and Wasting) and recommending measures. Plan and assess nutritional status using anthropometry. Calculate energy requirement and BMI to interpret obesity. Diagnose clinically nutritional problems (Marasmus, Kwashiorkor, IDD, Anemia). Advise on diet plans and lifestyle modifications.	Balanced Diet. Nutritional Problems in Public health. Protein Energy Malnutrition (PEM). Assessment of Nutritional status.	Social Aspects of nutrition. Food surveillance & Hygiene. Food pyramid. Anthropometric assessment.	Nutrients. Food Toxicants. Nutritional programs in Pakistan.

EYE 1

1st Block Content	Self - Learning Content
EYE1A: • Eye Lid • Lens EYE 2A: • Lacrimal System • Conjunctiva • Cornea • Episclera/sclera	• Nevus • Keratocanthoma • Xanthelasma • Keratoplasty • Vit. A deficiency • Corneal degenerations • Biometry • Types of IOLs

ENT 1B

Acute Otitis Media (AOM)	• Define AOM • Describe stages • Identify complications • Plan management	• Etiology • Predisposing factors • Stages of AOM • Clinical features • Complications • Medical treatment • Myringotomy	MCQs SAQs OSCE Structured Viva
Otitis Media with Effusion (OME)	• Define OME • Recognize features • Plan management	• Eustachian tube dysfunction • Otoscopic findings • Tympanometry • Grommet insertion	MCQs SAQs OSCE Structured Viva
Chronic Suppurative Otitis Media (CSOM)	• Classify types • Recognize presentation • Plan management	• Tubotympanic type • Atticoantral type • Pathology • Clinical features • Tympanoplasty • Mastoidectomy	MCQs SAQs OSCE Structured Viva
Complications of CSOM	• List extracranial & intracranial complications • Recognize warning signs • Plan emergency management	• Mastoiditis • Facial palsy • Labyrinthitis • Meningitis • Brain abscess • Lateral sinus thrombosis	MCQs SAQs OSCE Structured Viva

Otosclerosis	• Explain pathophysiology • Interpret audiogram • Outline treatment	• Fenestral & cochlear type • Clinical features • Audiometry (Carhart notch) • Stapedectomy/Stapedotomy	MCQs SAQs OSCE Structured Viva
Glomus Tumor (Paraganglioma)	• Describe origin • Recognize presentation • Plan management	• Glomus tympanicum • Glomus jugulare • Pulsatile tinnitus • Imaging • Surgery/Radiotherapy	MCQs SAQs OSCE Structured Viva
Meniere's Disease	• Define disease • Identify triad • Plan management	• Endolymphatic hydrops • Vertigo • Tinnitus • SNHL • Medical & surgical options	MCQs SAQs OSCE Structured Viva
Acoustic Neuroma	• Describe pathology • Recognize unilateral SNHL • Plan investigations & management	• Vestibular schwannoma • MRI diagnosis • Audiometry • Surgery/Radiotherapy	MCQs SAQs OSCE Structured Viva

BLOCK-XI(11Weeks)

Module XXI

4th Year MBBS

Module Duration: 06 weeks

Lung diseases & Renal system, Environmental & occupational health, Eye 2A,ENT2A

Unit	Cognitive learning Topic Assessed via MCQs,SEQs	Learning Outcome	Small Group Discussion Topics Assessed via MCQs,OSPE,VIVA,SEQs	Learning Outcome	Self Learning Topics Assessed via MCQs
Lung diseases	Diseases of the Upper Respiratory Tract	Describe anatomy and common disorders (rhinitis, sinusitis, laryngitis). Explain pathogenesis and clinical features			
	(COPD), Emphysema, Asthma	Define COPD and its components. Describe types Explain pathogenesis, morphology, and clinical feature	COPD – Clinicopathological Correlation	Analyze clinical scenarios. Correlate histopathology with disease progression	Lung Abcess
	Bronchiectasis, Bronchiolitis & Idiopathic pulmonary fibrosis	Define and explain causes, pathogenesis, and clinical features	Pneumonia – Case-Based Approach	Discuss clinical presentation and management	Cystic Fibrosis
	Pneumoconiosis & Sarcoidosis	Describe silicosis, asbestosis, and coal worker's pneumoconiosis. Explain pathogenesis and clinical features			Occupational Lung Diseases
	Pulmonary embolism & pulmonary hypertension	Explain pathogenesis, morphology, and clinical features	Pulmonary Hypertension – Case Discussion	Differentiate primary and secondary pulmonary hypertension	
	Pneumonia,Community-acquired, Hospital acquired & atypical	Classify pneumonia. Explain pathogenesis, morphology, and clinical features of pneumonia & tuberculosis	Tuberculosis – Case-Based Approach	Describe histological findings Correlate pathology with clinical presentation	

	pneumonia & Tuberculosis				
	Fungal infections ,Viral infections	Describe common infections. Explain pathogenesis and clinical features			SARS-CoV-2 Infection
	Diffuse alveolar hemorrhage syndromes (e.g., Goodpasture syndrome, Wegener granulomatosis)	Describe Goodpasture syndrome, Wegener granulomatosis. Explain pathogenesis and clinical features			
	Neoplastic Diseases of the Lung	Describe types of lung cancer. Explain risk factors, pathogenesis, and clinical features	Lung Cancer – Case Discussion	Identify high-risk patients and correlate histopathology with outcome	
	Pleural Diseases Respiratory Distress Syndrome	Describe pleural effusion, pneumothorax, and mesothelioma. Explain causes and clinical features Describe ARDS and RDS. Explain pathogenesis and clinical features			
Urinary System	Developmental Anomalies of Kidney	1. Describe renal developmental anomalies (agenesis, hypoplasia, horseshoe kidney, PKD).2. Explain embryological basis and clinical significance.			Polycytic kidney diseases
	Glomerular Diseases	1. Define nephritic and nephrotic syndromes.2. Describe pathogenesis and morphology of major glomerulonephritides (APSGN, MCD, FSGS, membranous GN)	Differentiate syndrome using labs & pathological findings.	Correlate pathology with clinical presentation.	Drug induced Interstial nephritis
	Tubulointerstitial Diseases	1. Explain causes and pathology of ATN and interstitial nephritis.2.			Rapidlpy progressive glomeurulonephri

		Describe acute and chronic pyelonephritis.			tis complications of acute &chronic pyelonephritis
	Renal Vascular Disorders	1. Describe benign and malignant nephrosclerosis.	Case based discussion	Correlate nephrosclerosis with CKD Correlate vascular pathology with hypertension and renal damage.	
	Renal Failure	Differentiate AKI and CKD.2. Explain pathophysiology and morphological changes in renal failure.	Renal profile		
	Renal Tumors	Classify renal tumors.2. Describe morphology and clinical features of RCC and Wilms tumor.	Gross features Histopaathological features Renal cell carcinoma	Points of identification corelate the morphological (macroscopic & microscopic) findings	Risk factors of renal cell carcinoma
	Infections of lower urinary tract	Define lower urinary tract infections (UTIs) and classify them into: Urethritis Cystitis Prostatitis (lower tract component) Explain the pathogenesis of lower UTIs: Recognize clinical features of: Acute cystitis Urethritis Complicated vs uncomplicated UTI	Clinical approach to a patient with dysuria and frequency & laboratory investigations:	Identify key clinical features that differentiate: Lower UTI (cystitis) Urethritis Upper UTI ,non infectious causes Recognize red flag features requiring urgent evaluation: Perform and interpret relevant physical examination findings	Describe the epidemiology and risk factors of lower UTIs Identify common causative organisms: Preventive strategies for UTI
	Tumors of lower urinary tract	Define tumors of the lower urinary tract Classify lower urinary tract tumors into: Explain pathogenesis of:	Lab investigations & histopathological findings of urothelial carcinoma,sq cell carcinoma	Outline diagnostic investigations:Describe basic histopathology: Urothelial carcinoma Squamous cell carcinoma	Bladder tumour staging (TNM) Occupational risk factors for bladder cancer

		Urothelial carcinoma Squamous cell carcinoma of bladder Discuss complications and prognosis:			

COMMUNITY MEDICINE

TOPIC	Learning Objectives (The student should be able to...)	Essential Topic	Supplementary Topic	Self-Directed Learning
Environment and Health	Relate the environment to health and disease (Air, Water, Waste, Climate, Housing, Noise, Radiation). Calculate the amount of chlorine/disinfectants required to disinfect water/reservoirs. Outline modifications to specific environments to prevent and control diseases. Identify and employ personal protective measures against environmental hazards. Relate environmental factors to hospital infections.	Air and Water purification. Surveillance of drinking water quality. Radiations. Hospital Waste management. Climate Resilience. Heatstroke Management	**Field Visit: Waste Management Site.** Water Sampling. Hardness of water. Chlorination calculations. Ventilation. Solid waste Disposal (septic tank, sanitary well). Medical entomology. Climate and global concerns, Effects of extremes of temperature	Light. Noise. Meteorological environment. Housing.
Occupational Health	Differentiate and explain the concepts of Occupational Health, Occupational Hygiene, and Ergonomics. Identify factors in a patient's history indicating a work-related illness. Identify occupational hazards and suggest relevant control measures. Counsel workers on preventive measures (e.g., Personal Protective Equipment).	Occupational hazards. Occupational disease (Pneumoconiosis). Prevention strategies. **Field Visit: Factory.**	Occupational Cancer/Dermatitis. Hazards of agriculture workers. Protection of health workers.	Accidents in industry. Sickness absenteeism.

Communicable Disease Control (2)	Comprehend modes of transmission, Suggest strategies for disease control and prevention for specific diseases. Classify and relate arthropods/parasites to disease transmission. Recommend preventive measures for vector control and parasitic diseases. Interpret common health problems of travelers. Advise travelers on prevention and relevant vaccinations. Differentiate between signs and symptoms of different snake-bites. Recommend and educate on preventive measures against snake bites.Snake-bite management.	Common endemic communicable diseases: Arthropod-borne, Zoonosis, Surface, Reproductive tract infections. Parasitology.	Entomology (medical importance, transmission, prevention/control). Travel-related diseases. Personal Hygiene. **Snake bite:** Types of snakes according to their toxins, symptoms and management	Unsafe Injection Practices (hazards and prevention).

EYE 2A

ENT2A

BLOCK / MODULE	Theme (Topic)	Learning Outcomes	Course Contents	Assessment Methods	Self-Directed Learning
BLOCK XI MODULE A	Congenital lesions of larynx	• Understand types of Congenital lesions • Clinical presented • Basic evaluation management plan	• Laryngeomalacia v.c paralysis laryngeal web • Subglottic stenosis • Subglottic haemassion	MCQs SAQs OSCE Structured Viva	• Anatomy of Larynx • Laryngotracheal trauma • Voice and speech disorder • Tracheostomy • Reinke's edema • Contact ulcer • Leukoplakia • Alternate procedure for airway management • Dysphagia • Laser surgery in ENT Radiotherapy & chemotherapy for head and neck
	Laryngeal Paralysis	• Describe causes • Recognize presentation • Plan investigations & management	• Unilateral & bilateral paralysis • Causes (surgical, neoplastic, neurological) • Laryngoscopy findings • Voice assessment • Management options	MCQs SAQs OSCE Structured Viva	
	Benign Tumors of Larynx	• Recognize benign lesions • Differentiate from malignancy • Plan treatment	• Vocal nodules • Vocal polyp • Intubation granuloma • Laryngocele • Juvenile papillomatosis	MCQs SAQs OSCE Structured Viva	
	Acute & Chronic Infections of Larynx	• Identify infections • Recognize airway emergencies • Plan management	• Acute laryngitis • Chronic laryngitis • Acute epiglottitis • Croup • Tuberculous laryngitis	MCQs SAQs OSCE Structured Viva	
	Carcinoma of Larynx	• Describe risk factors • Classify according to site • Outline staging & management	• Supraglottic cancer • Glottic cancer • Subglottic cancer • TNM staging • Investigations • Surgery, radiotherapy, chemotherapy	MCQs SAQs OSCE Structured Viva	
	Foreign Body in Airway	• Recognize obstruction signs • Outline emergency management	• Types of foreign bodies • Clinical presentation • Heimlich maneuver	MCQs SAQs OSCE Structured Viva	

		• Plan definitive treatment	• Rigid bronchoscopy • Complications		

BLOCK XI(11Weeks)

Module XXII

4th Year MBBS Module Duration: 05 Weeks

Hepatobillary system & GIT tumors, Biostatistics & Research methodology, Eye 2B, ENT 2B,

Unit	**Cognitive learning Topic Assessed via MCQs,**SEQs	**Learning Outcome**	**Small Group Discussion Topics Assessed via MCQs,OSPE,VIVA,**SEQs	**Learning Outcome**	**Self learning Topic Assessed via MCQs ,**SEQs	
Hepatobillary System	General Features of Liver Diseases	Describe normal structure and functions of the liver. Explain patterns of liver injury (hepatocellular, cholestatic, mixed). Interpret basic liver function tests. Correlate clinical features with pathological changes.	Viral Hepatitis – Clinicopathological Correlation Hepatic profile	Analyze clinical scenarios of viral hepatitis. Interpret serological markers. Correlate histological findings with disease progression.	hereditary metabolic liver disorders	
	Liver Failure and Cirrhosis	Define acute and chronic liver failure. Describe etiopathogenesis of cirrhosis. Explain morphological changes in cirrhotic liver. Discuss complications including portal hypertension.	Cirrhosis & Portal Hypertension	Discuss clinical presentation of cirrhosis. Identify complications using case scenarios. Correlate gross and microscopic pathology with symptoms.		drug-induced liver injury (dili)
	Liver Infections (Viral Hepatitis)	Classify viral hepatitis. Explain pathogenesis and morphology of hepatitis A–E. Differentiate acute and chronic hepatitis. Correlate histopathology with clinical features.	Autoimmune Liver Diseases	Differentiate autoimmune hepatitis from cholangiopathies. Interpret autoantibody profiles. Discuss prognosis and complications.	neonatal and congenital cholestatic disorders	

	Metabolic Liver Diseases	Describe alcoholic and non-alcoholic fatty liver disease. Explain pathogenesis of Wilson disease and hemochromatosis. Identify histopathological features of metabolic liver disorders.	Hepatocellular Carcinoma – Case Discussion	Identify high-risk patients for HCC. Interpret imaging and tumor markers (AFP). Correlate histopathology with clinical outcome.	gallbladder carcinoma – risk factors & prevention
	Bilirubin Metabolism & Cholestatic Disorders	Explain bilirubin metabolism and types of jaundice. Describe causes and pathology of cholestasis. Discuss autoimmune cholangiopathies (PBC, PSC).	Gallbladder Diseases – Case-Based Approach	Differentiate inflammatory from neoplastic gallbladder diseases. Identify red-flag features of malignancy Discuss pathological basis of complications.	
	Hepatocellular Carcinoma	Describe etiological factors and risk factors for HCC. Explain molecular pathogenesis of HCC. Identify gross and microscopic features of HCC. Discuss clinical presentation, spread, and prognosis.			
	Gallbladder – Non-Neoplastic & Neoplastic Lesions	Describe acute and chronic cholecystitis. Explain pathogenesis and complications of gallstones. Identify benign and malignant neoplasms of gallbladder. Correlate pathology with clinical features.			
Oral cavity & GIT Tumors t	Introduction of GIT tumors	Classify GIT tumors based on:Site,Benign vs malignant & Tissue of origin Describe the Role of genetic Enlist Differential diagnosis TNM Staging	Pathophysiology of GIT tumours	Describe the etiologyv& pathogenesis of GIT tumours	Classification of GIT tumour

	Leukoplakia and oral carcinoma	Define leukoplakia and oral carcinoma Describe epidemiology, risk factors, etiology and pathogenesis Describe histopathological features and prognosis	Morphological features of oral carcinoma	Describe the histopathological features of oral carcinoma	Prognostic factors & etiology
	Tumors of salivary glands	Describe the histology of salivary glands Describe histopathological features and prognosis		Describe the histopathological features	TNM staging & factors affecting prognosis
	Carcinoma esophagus	Describe epidemiology, risk factors, etiology and pathogenesis Describe histopathological features and prognosis	Morphological features of carcinoma esophagus	Describe the gross & microscopic features	Role of genetic mutations and environmental factor Factors affecting prognosis
	Gastric carcinoma	Describe epidemiology, risk factors, etiology and pathogenesis Describe histopathological features and prognosis	diagnostic approach of Gastric carcinoma	To understand the diagnostic approach of Gastric carcinoma	etiology & prognostic factors
	Carcinoid tumor	Describe epidemiology, risk factors, etiology and pathogenesis Describe histopathological features and prognosis	Morphological features and prognosis of carcinoid tumour	Describe morphological features & prognostic factors	
	Colorectal carcinoma	Describe epidemiology, risk factors, etiology and pathogenesis Identify the premalignant lesions Describe histopathological features and prognosis	Morphological features & genetic mutations		Prognostic factors

Community Medicine

Biostatistics and HMIS	Identify various types of data and methods of data presentation. Differentiate measures of central tendency (Mean, Median, Mode) and dispersion (Range, Standard Deviation, Standard Error). Interpret various data distributions (Normal, Skewed). Classify and explain sampling techniques. Formulate null and alternate hypotheses and apply steps of hypothesis testing. Interpret the P-value. Apply relevant statistical programs for data analysis. Identify existing sources of health-related statistics in Pakistan (Census, Vital Registration). Comprehend components and uses of HMIS. Interpret a questionnaire for service assessment. Analyze reasons for HMIS failure in Pakistan and suggest improvements.	Elementary statistical methods. Sampling. Measures of Central tendency & Dispersion. Normal Distribution Curve. Tests of Significance. **HMIS** :Characteristics, elements, components, and uses of HMIS.	Hands-on practice of calculations (SD, SE, Test of significance). Hypothesis testing.	Health Information and data sources. Application of the T-test, Chi-square, and P-value interpretation will be done using the students' own research data in the SPSS lab
Research Project	Apply biostatistics and epidemiological techniques to a community health project. Formulate a research question, develop tools for data collection, and prepare and present a research report. Apply ethical principles to the research process.	Research methodology theory. Ethics in research. Informed Consent.	**Practical:** Selection of topic. Synopsis writing. Data entry and analysis using SPSS.	Literature review techniques. Drafting a research article.
Screening for Disease	Apply the concept and importance of screening. Describe the qualities of a good screening test. Calculate and interpret Sensitivity, Specificity, Positive Predictive Value (PPV), and Negative Predictive Value (NPV), Yield, and Accuracy. Identify favorable disease characteristics for screening. Comprehend ethical concerns and misinterpretations in screening programs.	Evaluation of a screening test (Sensitivity, Specificity, PPV, NPV).	Concepts and Criteria for screening.	Practical use and misinterpretations of screening.

EYE 2

2nd Block Content	Self - Learning Content
EYE2A: • Glaucoma • Optic Nerve EYE2B: • Leukocoria • Uvea • Vitreo Retina	• Secondary Glaucoma • Pseudo exfoliation Glaucoma • PDS • NVG • Night blindness • Red eye

ENT 2B

BLOCK / MODULE	Theme (Topic)	Learning Outcomes	Course Contents	Assessment Methods	Self-Directed Learning
BLOCK XI MODULE B	Adenoids & Adenoid Hypertrophy	• Describe anatomy of adenoids • Identify causes of hypertrophy • Recognize signs & symptoms • Plan investigations & management	• Anatomy of adenoids • Causes of hypertrophy • Clinical features • Investigations (X-ray nasopharynx, endoscopy) • Medical management • Adenoidectomy	MCQs SAQs OSCE Structured Viva	• Anatomy of Pharynx • Salivary glands • Diseases of oral cavity • Neoplastic & nonneoplastic lesion of salivary gland • Acute and chronic pharyngitis • GERD • Carcinoma oropharynx • Hypo pharyngeal carcinoma • Pharyngeal pouch • snoring and sleep apnoea
	Acute & Chronic Tonsillitis	• Identify causes • Recognize clinical features • Plan investigations • Outline management	• Etiology • Clinical features • Investigations • Complications • Medical treatment • Tonsillectomy indications	MCQs SAQs OSCE Structured Viva	
	Head & Neck Space Infections	• Identify deep neck space infections • Recognize complications	• Parotid abscess • Ludwig angina • Peritonsillar abscess • Diphtheria	MCQs SAQs OSCE Structured Viva	

		• Plan investigations & treatment	• Retropharyngeal abscess (acute & chronic) • Parapharyngeal abscess • Causes • Clinical features • Investigations • Management		
	Foreign Body Esophagus	• Recognize obstruction signs • Outline emergency management • Plan definitive treatment	• Types of foreign bodies • Clinical presentation • Rigid esophagoscopy • Complications	MCQs SAQs OSCE Structured Viva	
	Carcinoma of Nasopharynx	• Describe etiology • Recognize clinical presentation • Understand staging • Plan investigations & management	• Etiology (EBV association) • Clinical features • TNM staging • Investigations (endoscopy, biopsy, CT/MRI) • Radiotherapy & chemotherapy	MCQs SAQs OSCE Structured Viva	
	Angiofibroma	• Describe pathology • Recognize presentation • Plan investigations & management	• Juvenile nasopharyngeal angiofibroma • Clinical features (epistaxis, nasal obstruction) • Imaging (CT/MRI) • Surgical management	MCQs SAQs OSCE Structured Viva	

BLOCK XII (11 Weeks)

Module XXIII

4th Year MBBS

Module Duration: 06 weeks

Reproductive system & Endocrine tumors, Study designs & medical Ethics, Eye 3A,ENT 3A

Unit	**Cognitive learning Topic Assessed via MCQs,**SEQs	**Learning Outcome**	**Small Group Discussion Topics Assessed via MCQs,OSPE,VIVA,**SEQs	**Learning Outcome**	**Self Learning Topics Assessed via MCQs**
Male genital system total	Congenital Anomalies of the Penis and Testes	Define congenital anomalies of the penis and testes and classify them based on embryological defects. Describe the embryological basis of common anomalies Describe the principles of management			
	Inflammatory Disorders of Testis and Male Genital Tract	Define and classify Explain the pathogenesis Etiological agents ,preventive and therapeutic strategies	Morphological features of inflammatory lesion	Identify and describe the gross morphological features Describe the microscopic features Recognise morphological patterns of specific inflammatory conditions	Differentiate between acute and chronic inflammatory conditions of the testis.
	Sexually Transmitted Diseases (STDs)	Define sexually transmitted diseases and classify them based on causative organisms: Explain the pathogenesis Identify laboratory diagnostic methods used for STDs.			

		complications of untreated STDs			
	Testicular Tumors	Define testicular tumors and classify epidemiology and risk factors	Testicular Tumors histopathology & tumour markers	Differentiate between seminomatous and non-seminomatous germ cell tumors based on: Gross appearance Histopathology Tumor markers Explain the patterns of spread and staging of testicular tumors.	Staging of Testicular tumour
	Benign Prostatic Hyperplasia	Define BPH and which part of the prostate is most commonly affected? Discuss the pathophysiology of BPH and role of androgens. What are the typical clinical features Recognize key clinical features: LUTS (Lower Urinary Tract Symptoms) – frequency, urgency, nocturia, weak stream, incomplete emptying	Case based Dission Diagnostic approach & morphological features	Stepwise diagnostic evaluation Interpret findings in a case context to differentiate BPH from other prostatic pathologies (e.g., prostate cancer). Describe gross and microscopic features of BPH:	Complications of Benign prostatic hyperplasia
	Prostate Adenocarcinoma	Define prostatic adenocarcinoma and explain its epidemiology. Describe risk factors including age, family history, genetics, diet, and hormonal influence. Identify the zone of origin (peripheral zone) of prostatic adenocarcinoma. Explain the pathogenesis and role of androgens.	Diagnostic evaluation & histological features of prostatic adenocarcinoma	Identify patterns of local spread and distant metastasis Describe gross pathology Describe microscopic features	Risk factors & tumour bmarkers of prostatic adenocarcinoma

Female genital system	Benign and malignant tumors of vulva	Define conditions, describe morphology, pathophysiology & clinical features	Microscopy and HPV related cancer of vulva & vagina	Identify microscopic features	
	Infections of vagina & cervix	Define conditions, describe changes, explain clinical relevance			
	Benign and malignant Tumors of Cervix	Define lesion, describe morphology, correlate with outcome Classify lesions, describe grading, explain screening value Describe Pathophysiology of HPV related to cancer.	Screening and early detection: Pap smear, HPV testing Histological types: squamous cell carcinoma vs adenocarcinoma & IHC	Recognize clinical presentation of cervical tumors Describe histopathological differences of cervical malignancies Understand screening protocols and preventive strategies	
	Benign disorders of Uterus, Adenomyosis, Endometriosis, Abnormal utrine bleeding & Endometrial Hyperplasia	Define conditions, describe pathology, relate to AUB. Classify AUB Describe pathophysiology of endometrial hyperplasia	Histological features of benign disorder of uterus	explain histology, differentiate from carcinoma	Differenciate between benign & malignant disorder of uterus
			Endometrial Hyperplasia Simple vs complex, with or without atypia Diagnostic methods	Identif y histological features of endometrial hyperplasia	
	CA endometrium	Describe risk factors, pathophysiology, and histological types of endometrial carcinoma. Recognize clinical features including postmenopausal bleeding and abnormal discharge.	Gross & Microscopy of Ca endometrium IHC markers	Identify Gross and microscopic features & IHC	
			Ovarian Tumor	Classify ovarian tumors based on histology	

			Classification & tumour markers:	Correlate tumor markers with specific ovarian tumors	
			Germ Cell Tumors of Ovary Types,Laboratory markers and their interpretation Teratoma mature & immature microscopic &lab findings	Identify histological features of germ cell tumors Interpret tumor markers for diagnosis and follow-up Correlate clinical presentation with pathology	
	Choriocarcinoma & Gestational trophoblastic Neoplasia	Describe the origin and pathophysiology of choriocarcinoma. Describe clinical features Outline management strategies Classify GTN types: invasive mole, choriocarcinoma, placental site trophoblastic tumor. Explain risk factors, pathophysiology, and progression from molar pregnancy. Describe clinical features	Histological features & lab findings of choriocarcinoma and molar pregnancy	Identify Gross & microscopic feature	
	Toxemia of Pregnancy , Subfertility, ectopic pregnancy	Define preeclampsia and eclampsia and differentiate between them. Identify risk factors and pathophysiology of hypertensive disorders in pregnancy & their management principle Explain the pathophysiology and common sites of ectopic implantation.	Leomyoma and leomyosarcoma & Spindle cell tumours of uncertain malignant potential	Identify Gross,microscopic features and IHC marker Describe Pathophysiology	Different types of leomyoma,leomyo sarcoma
Endocrine Tumors	Pituitary adenoma & carcinoma	Define pituitary adenoma & Carcinoma	Histological findings of pituitary adenoma & carcinoma	Identify gross & microscopic features	Differentiate adenoma & carcinoma

		Classify pituitary adenomas Describe pathogenesis			
	Parathyroid adenoma & carcinoma	Define Parathyroid Adenoma & carcinoma Describe pathogenesis	Case scenario of parathyroid carcinoma Histological findings of adenoma & carcinoma	Correlate pathology with clinical features Identify Gross & microscopic features	Differentiate adenoma & carcinoma
	Follicular adenoma & carcinoma	Define Follicular Adenoma & carcinoma Describe pathogenesis	Case scenario of follicular carcinoma Histological findings of adenoma & carcinoma	Correlate pathology with clinical features Identify Gross & microscopic features	Differentiate adenoma & carcinoma
	Papillary carcinoma	Define Papillary carcinoma Describe pathogenesis prognostic factors	Case scenario of papillary carcinoma Histological findings	Correlate pathology with clinical features Identify nuclear features	Risk factors & Differential diagnosis
	Medullary Carcinoma & Anaplastic carcinoma	Define medullary & Anaplastic carcinoma Describe cell of origin & genetics Explain aggressive behavior of anaplastic carcinoma	Morphological features of medullary & anaplastic carcinoma	Identify Gross & microscopic features	Molecular genetic & targeted therapy of endocrine tumors
	Adrenal adenoma & carcinoma		Case scenario Histological findings of adenoma & carcinoma	Correlate pathology with clinical features Identify Gross & microscopic features	
	Pheochromocytoma		Case scenario Morphological findings of pheochromocytoma	Correlate pathology with clinical features Identify morphological features	

Community Medicine

TOPIC	Learning Objectives (The student should be able to...)	Essential Topic	Supplementary Topic	Self-Directed Learning
Concept of Health and Disease	Summarize determinants and dimensions of health. Evaluate and select the most appropriate health indicators. Illustrate and describe theories of disease causation. Relate the concept of natural history of disease and the iceberg phenomenon. Differentiate disease control, elimination, and eradication. Interpret levels of prevention and intervention measures with applied examples.	Definition, Dimensions, and Determinants of Health. Indicators of Health. Theories of Disease Causation. Iceberg Phenomenon.	Levels of Prevention and Intervention measures with applied examples.	History of medicine. Changing concepts of health.
General Epidemiology & Study Designs	Apply concepts and aims of Epidemiology to clinical medicine. Calculate and interpret epidemiological rate ratios and proportions for morbidity/mortality, fertility, and migration. Describe and differentiate between study designs (Descriptive, Analytical, Experimental). Identify and minimize types of bias. Relate association and causation.	Incidence and Prevalence. Analytical epidemiology. Investigation of an epidemic. Descriptive epidemiology. Association and causation. Study designs in detail.	Hands-on calculations of epidemiological rates, ratios, and proportions.	Aims and Uses of epidemiology.
Medical Ethics	Analyze ethical issues and dilemmas in medical teaching and service delivery. Demonstrate professional conduct, including maintaining confidentiality and practicing non-maleficence and autonomy.	Importance of medical ethics. Principles of ethics. Violation of medical ethics.	Professional conduct and doctor-patient relationship scenarios.	Ethics in specialized clinical situations.

EYE3A

ENT3A

BLOCK / MODULE	THEME (TOPIC)	LEARNING OUTCOMES	COURSE CONTENTS	ASSESSMENT METHODS	SELF DIRECTED LEARNING
	Diseases of External Nose & Vestibule	• Identify common infections • Recognize complications • Plan management	• Cellulitis • Furuncle (boil) • Tumors of vestibule • Clinical features • Management	MCQs SAQs OSCE Structured Viva	
	Diseases of Nasal Septum	• Recognize septal disorders • Identify complications • Plan management	• Deviated nasal septum (DNS) • Septal hematoma • Septal abscess • Septal perforation • Management principles	MCQs SAQs OSCE Structured Viva	
	Granulomatous Diseases of Nose	• Identify granulomatous conditions • Plan investigations • Outline treatment	• Rhinoscleroma • Rhinosporidiosis • Wegener's granulomatosis • Clinical features • Management	MCQs SAQs OSCE Structured Viva	
	Foreign Body, Rhinolith	• Recognize presentation • Plan management	• Foreign body nose • Rhinolith • Clinical features • Removal techniques	MCQs SAQs OSCE Structured Viva	

	BLOCK XII(12 Weeks) **Module XXIV** **4th Year MBBS** **Module Duration: 05weeks**

	Musculoskeletal system ,Skin &CNS Tumors, Health system & non communicable diseases, Eye 3B,ENT3B				
Unit	**Cognitive learning Topic Assessed via MCQs,**SEQs	**Learning Outcome**	**Small Group Discussion Topics Assessed via MCQs,OSPE,VIVA,**SEQs	**Learning Outcome**	**Self Learning Topic Assessed via MCQs,**
Musculoskeletal system ,bones& joints	Normal Bone Structure, Cells & Bone Remodeling	Describe normal bone structure and function. Differentiate woven vs. lamellar bone. Explain bone remodeling and roles of bone cells.	Diagram-based discussion of remodeling	Identify woven vs. lamellar bone on histology. Interpretation of bone lesions.	RANK/RANKL/OPG pathway (overview), role of PTH & Vitamin D in bone, bone markers (ALP)
	Osteomyelitis (Acute & Chronic)	Define osteomyelitis. Describe pathogenesis and morphology. Differentiate acute vs chronic osteomyelitis. Enlist complications	Case-based discussion (fever + bone pain, chronic discharging sinus).	Interpret clinical/lab findings and correlate with pathology.	Brodie abscess, diabetic foot osteomyelitis, TB osteomyelitis
	Metabolic Bone Diseases (Rickets/Osteomalacia, Osteoporosis)	Differentiate rickets vs. osteomalacia. Explain osteoporosis pathogenesis and risk factors. Correlate bone weakness with fractures.	Clinical scenarios (elderly fracture, child with bowed legs).	Apply knowledge to diagnosis and prevention strategies	Secondary hyperparathyroidism
	Hyperparathyroidism & Renal Osteodystrophy	Explain bone changes due to hyperparathyroidism. Describe renal osteodystrophy patterns.	Clinical scenario of CKD patient with bone pain	Correlate labs (Ca^{2+}/PO^{4+}/PTH) with bone pathology.	FGF-23 and phosphate metabolism
	Osteonecrosis (Avascular Necrosis)	Define osteonecrosis. List causes and Describe pathogenesis	Case-based discussion (hip pain in steroid user).	Identify risk factors and interpret pathology basis.	Legg-Calvé-Perthes disease
	Joint Disorders – Osteoarthritis & Rheumatoid Arthritis	Differentiate OA vs. RA. Describe pannus formation and joint destruction in RA	Case-based discussion (small joint pain vs. weight-bearing joint pain).	Apply clinical-pathological correlation.	Autoantibodies in RA (RF, anti-CCP), role of cytokines (TNF). Compare OA vs. RA table

	Crystal-Induced Arthritis (Gout & Pseudo gout)	Explain gout pathogenesis and morphology. Differentiate gout vs. pseudo gout.	Case vignette (podagra), synovial fluid discussion.	Interpret lab findings and pathology basis.	Drugs causing Hyperuricemia polarized microscopy crystals
	Bone Tumors (Bone-forming and Cartilage-forming Tumors)	Classify bone-forming and cartilage-forming tumors.Describe pathogenesis of osteogenic and chondrogenic tumors.Describe gross and microscopic features of common bone tumors.Correlate pathological features with clinical presentation and prognosis.	Osteosarcoma and Chondrosarcoma (Slide-based)	Identify histopathological features of osteosarcoma and chondrosarcoma.Differentiate between osteogenic and chondrogenic tumors on microscopy.Interpret histopathology slides in small groups.Correlate morphology with tumor behavior	Differentiate between osteogenic and chondrogenic tumors
	Bone Tumors of Unknown Origin	Describe tumors of unknown origin involving bone. Explain pathological features of Ewing sarcoma and related tumors. Describe radiological and histopathological correlation. Correlate pathology with clinical behavior.			
	Soft Tissue Tumors	Classify soft tissue tumors based on tissue of origin. Describe pathological features of adipose, fibrous, smooth muscle and skeletal muscle tumors.	Soft Tissue Tumors – case Discussion & histological findings	Identify microscopic features of common soft tissue tumors. Differentiate benign from malignant soft tissue tumors on slides. Interpret histopathological findings. Correlate morphology with clinical outcome	Differentiate benign and malignant soft tissue tumors.
Skin	Acute inflammatory dermatoses	Describe etiology,morphology,pathogenesis and clinical features of (1)Urticaria (2)Eczematous dermatitis along with	Squamous cell carcinoma (Predisposing factors-Morphology-Clinical features and Prognosis)	The student should be able to Correlate Clinical presentation with morphology of skin malignancies	primary skin lesions: macule,papule,nodule,plaque, vesical,bulla,putul

		its types (3)Erythema multiform		Differentiate SCC and BCC based on risk factors,morphology and prognosis	es,scale secondary skin changes: Excoriation,lichen ification
	Chronic inflammatory dermatoses	Describe clinical and histopathological features of (1)Psoriasis (2) Lichen Planus (3) Lichen Simplex Chronicus	Basal cell carcinoma (Risk factors-Morphology-Clinical features and prognosis)	Correlate Clinical presentation with morphology of skin malignancies Differentiate SCC and BCC based on risk factors,morphology and prognosis	Infectious dermatosis: Bacterial Infections,Fungal Infections,Warts types and their common sites
	Blistering disorders	Differentiate Pemphigous,Bullous Pemphigoid and Dermatitis Herpetiformis based on the level of blisters and pathogenesis	Melanocytic lesions (Nevocellular nevi-Dysplastic nevi)	Distinguish benign nevi from dysplastic nevi	Histopathological terms: Hyperkeratosis, parakeratosis, acanthosis dyskeratosis, acantholysis, Papillomatosis,lentiginous pattern,spongiosis
			Malignant melanoma (Classification-Common sites-Clinical features and morphological features)	Describe classification and prognostic features of malignant melanoma	Premalignant epithelial tumors: Seborrheic Keratosis, Actinic Keratosis
CNS Tumors	Gliomas	Classify gliomas based on cell of origin and WHO grading. Describe general pathogenesis and growth patterns of gliomas	Astrocytoma Glioblastoma (Slide-based)	Identify microscopic Features on slides. Differentiate Lowgrade Astrocytoma from glioblastoma Correlate • histology with clinical outcome	

	Astrocytic tumors	Describe diffuse And infiltrating astrocytoma Explain gemistocytic astrocytoma Describe glioblastoma and correlate morphology with prognosis. Describe pilocytic astrocytoma and PXA	Oligodendroglioma	Identify microscopic features Differenciate from astrocytoma	WHO Classification of CNS Tumors
	Ependymal Tumors	Describe ependymoma and variants. Explain pathological features of anaplastic and myxopapillary ependymoma	Ependymoma	Identify perivascular psuedorosette Correlate tumor location with symptoms	Rare CNS Tumors
			Medulloblastoma	Intrpret histopathological slide Describe CSF spread & prognosis	Embryonal CNS tumors
			Peripheral nerve sheath tumors	Describe schwannoma, neurofibroma,MPNST Differentiate schwannoma, neurofibroma,MPNST on slide	
			Meningioma	Describe meningioma & major histological types	

COMMUNITY MEDICINE

Non-Communicable Diseases (NCDs)	Classify the epidemiology of NCDs and determine their risk factors. Formulate and suggest preventive measures (including diet and lifestyle modification) for NCDs in individuals and at-risk populations. Estimate the burden of NCDs in the community.	Cardiovascular Disease, Hypertension, Coronary heart disease, Diabetes, Obesity.	**Field Visit: Physiotherapy Department** Cancer, Stroke, Rheumatic fever/Heart Disease. Calculations in Obesity. Blindness screening.	Genetic disorders. Preventive and social measures for NCDs.
Mental Health & Drug Abuse	Define and categorize mental health. Recognize characteristics of a mentally healthy person and warning signs. Identify common mental health problems and recommend prevention. Relate Drug Abuse, Alcoholism, Addiction, Dependence, and Smoking (causes, health impact) and suggest control strategies across levels of prevention.	Common mental illnesses. Learning difficulties (Autism). Prevention of mental disorders.	Alcoholism and drug dependence. Smoking.	Types of mental illness. Causes of mental ill health.
Injuries & Disaster Management	Categorize different types of accidents. Define and explain the epidemiology and control of accidents. Formulate a health education program on accident prevention and safety measures for a local setting. Define, classify, and differentiate between different disasters (natural and man-made). List the duties of a disaster health team and relate the role of a medical officer. Manage a disaster utilizing principles of disaster management (POSDCORB), response, and mitigation. Apply the National Disaster	Classification of disasters. Effects of disasters. Disaster Management cycle. POSDCORB.	Epidemiology and control of accidents. First aid in emergencies.	National Disaster Management guidelines.

	Management and Preparedness guidelines			
Health System & International Health	Define health care and the health care system. Distinguish between the various levels of health care. Analyze the roles of Federal and Provincial governments and the District Health System post-devolution. Describe the referral mechanism.	-Health Management -Health system in Pakistan, role of federal and provincial governments -Pillars of health system -National Health Vision	- International health agencies -Role of WHO in health -MGDs and SGDs -NGOs	-
Health planning & Leadership	Explain the planning cycle Explain the functions of a manager and apply management techniques to resource management. Identify causes of health care delivery failure and recommend improvements. Relate the functions of international health agencies (WHO, USAID, UNICEF, UNFPA) and their collaboration with public/private sectors to the achievement of Sustainable Development Goals (SDGs).	Health Planning. Planning Cycle. Management techniques. Leadership and Motivation. Professionalism.	-	Physician as a manager. Management of resources.

	Explain the concept of leadership and community mobilization in healthcare.			
Primary Health Care (PHC)	Define the Concept of Health Care and the Concept of Primary Health Care (PHC). Differentiate and describe the Levels of Health Care (Primary, Secondary, Tertiary). Explain the current status and challenges of Primary Health Care in Pakistan. Compare and contrast the Selective vs. Comprehensive approach to PHC. Enumerate and explain the Elements and Principles of Primary Health Care. Define and relate the concept of "Health for All" to the Alma-Ata Declaration. Identify major Constraints in PHC implementation. Analyse local Health Status and Health Problems to justify PHC interventions. Describe the importance and mechanisms of achieving Community Partnership in health initiatives.	-Levels of healthcare-Primary Health Care -Health For All (Alma Ata) -Components of PHC -Selective vs Comprehensive appraoch -Constraints in PHC **Field Visit: BHU/RHC.**	Health Care Delivery. Health status and problems. Selective vs Comprehensive PHC.	Community partnership and mobilization.

EYE 3

3rd Block Content	Self - Learning Content
EYE3A: • Strabismus • Errors of Refraction EYE3B: • Orbit • Ocular Injuries • Ocular Pharmacology	• Cover test • Maddox Rod • Maddox Wing • Worth four dot test • Extra ocular movements • Laser • Pharmacology • Night blindness

ENT 3B

	Allergic & Vasomotor Rhinitis	**• Differentiate allergic & non-allergic rhinitis • Plan investigations & treatment**	**• Etiology • Clinical features • Investigations • Medical management • Immunotherapy**	**MCQs SAQs OSCE Structured Viva**	
	Nasal Polyps	• Classify polyps • Identify clinical differences • Plan investigations & management	• Ethmoidal polyp • Antrochoanal polyp • Etiology • Endoscopy • Medical & surgical treatment	MCQs SAQs OSCE Structured Viva	
	Epistaxis	• Identify causes • Understand vascular anatomy • Plan emergency management	• Etiology • Little's area & anastomosis • Investigations • Anterior & posterior packing • Surgical management	MCQs SAQs OSCE Structured Viva	
	Acute & Chronic Sinusitis	• Classify sinusitis • Identify complications • Plan management	• Acute sinusitis • Chronic sinusitis • Fungal rhinosinusitis • Investigations • Medical management • Functional Endoscopic Sinus Surgery (FESS)	MCQs SAQs OSCE Structured Viva	• Anatomy of Paranasal Sinuses (PNS)

	Complications of Sinusitis	• Classify complications • Recognize emergency signs • Plan management	• Local complications • Orbital complications • Intracranial complications • Investigations • Treatment	MCQs SAQs OSCE Structured Viva	
	CSF Rhinorrhea	• Identify causes • Differentiate from other nasal discharge • Plan investigations & management	• Etiology (traumatic/spontaneous) • Beta-2 transferrin test • CT/MRI • Medical & surgical repair	MCQs SAQs OSCE Structured Viva	

LIST OF SPECIAL PATHOLOGY PRACTICLES

TOPIC
WBC:
Leukemia (AML, ALL, CML, CLL)
Multiple myeloma, Lymphoma (Hodgkin), Non Hodgkin Lymphoma
RBC1
1.D/D of Micro cytic , Hypochromic Anemia(IDA,Thalassemia, sickle cell Anemia)
Macrocytic Anemia (Megaloblastic , MDS)
RBC2
Hemolytic anemia , coombs test. Membranopathy, HS, enzympathy , G6PD Deficiency
RBC 3 Malaria parasite,dengue, ict, hep b, c, hiv
ITP, TTP, HUS, DIC, MAHA
Transfusion Reaction, Blood Grouping
BREAST
Benign Lesions
Malignant lesions/ Breast Carcinoma,
RESPIRATORY SYSTEM: COPD, ILD, pneumonia , Lung Cancer, Anthracosis,
T.B , Lung abscess,
Hepatobiliary & GIT
Liver failure
Cholestasis acute / chronic cholecystitis, Cholelithiasis,
HCC,Liver Cirrhosis
--
RENAL
GN(Acute / Chronic),pyelonephritis
--
Renal ARF, CRF,lab diagnosis
Urothelial Tumor, renal cell carcinoma
GIT
CA Colon- Polyp, BENIGN AND MAIGNANT
Eosophageal , oral cavity lesions
Gastric Cancer
--
REPRODUCTIVE
Uterine Tumor, Ovarian Tumor (leiomyoma, leimyosarcoma), GCT, endometrioid ca, pcos, CIN
Male Seminama, Non Seminoma, BPH, Prostate Cancer
ENDOCRINE
Thyroid Adenoma / Follicular / Pappillary Cancer.
Lab diagnosis of DM, DKA
LAB DIAGNOSIS OF ADDISONS, CUSHING etc
MSK
Osteomyelitis, Osteogeneic, Sarcoma
SKIN
BCC,SCC,Malignant Melanoma,
CNS Tumors
Lab diagnosis of MI, LIPID PROFILE
Cardiac profile, Renal Profile
LAB DIAGNOSIS Hepatic Profile, HEPATITIS, JAUNDICE

List of Field Visits

Type of Visit	Focus Area	Learning Objectives (The student should be able to...)
Factory/Industrial Site	Occupational Health	Identify common occupational hazards and relate them to specific work processes. Evaluate the use and effectiveness of Personal Protective Equipment (PPE) and other safety measures.
Basic Health Unit (BHU)	Primary Health Care (PHC)	Describe the organizational structure and range of services offered (preventive, curative) at the primary care level. Identify challenges in service delivery and resource utilization at a BHU.
Rural Health Centre (RHC)	Rural Health Systems	Differentiate the administrative and clinical functions of an RHC from a BHU. Explain the referral system linking the RHC to secondary care facilities.
Population Welfare/Family Planning Center	Reproductive Health	Demonstrate effective counseling techniques for family planning. Describe the various contraceptive methods available and explain the criteria for selecting an appropriate method for a client.
EPI Centre, Nishtar Hospital	Immunization Services	Observe and explain the procedures for cold chain maintenance (Reading the VVM). Correctly identify the components of the national EPI schedule, specifically the 9-month visit requirements (Measles-1, IPV-2, TCV). Demonstrate the process of managing vaccine logistics, including stock registers and the Open Vial Policy. Observe the administration technique and specific anatomical sites for co-administered vaccines to ensure safety and efficacy.
Physiotherapy Department, Nishtar Hospital	Rehabilitation	Describe the spectrum of rehabilitation services available (e.g., physical, social, vocational) for chronic illness and disability. Explain the role of the medical officer in early referral for rehabilitation.
Waste Management Center	Environmental Health	Outline the complete processes involved in the collection, segregation, transport, and final disposal of municipal solid waste. Explain the basic principles and stages of sewage treatment. Relate proper solid and liquid waste disposal to the prevention of water-borne diseases and the mitigation of public health risks associated with improper handling.
NGO	Community Partnership	Analyze the role and impact of Non-Governmental Organizations (NGOs) in complementing government health services. Identify strategies used for effective community mobilization and health advocacy.
Nishtar Kitchen	Food Hygiene & Nutrition	Evaluate food hygiene standards in a large-scale institutional kitchen. Identify critical control points from procurement to distribution to prevent food-borne illnesses. Assess nutritional requirements for therapeutic diets and the screening protocols for food handlers.

Blood bank	Blood borne diseases	To observe the processes of blood grouping, cross-matching, screening for transfusion-transmitted infections, and the maintenance of the cold chain for safe blood storage and distribution.

RESEARCH PROJECT ASSESSMENT MILESTONES

Research Phase	Deadline (End of Block)	Submission Requirement	Assessment Value
Phase I: Planning	End of Block 10	Synopsis Submission: The complete research protocol, including the background, research question, objectives, detailed methodology and final research questionnaire.	Integrated into Research Project Grade
Phase II: Data Management	End of Block 11	Data File Submission: The SPSS file containing the collected data and analysis .	Integrated into Research Project Grade
Phase III: Dissemination	End of Block 12	Submission: Submission of the final research report to the research supervisor.	Integrated into Research Project Grade

SCHEDULE OF CLINICAL TRAINING

SR. No	LEARNING OUTCOMES	ACTIVIY
	At the end of 06 weeks training, the student will be able to:	
01	Ear	
	Special Skills • Take history of a patient with Ear pathology • Demonstrate the use of Otoscope to aid in examination of the external auditory canal and the tympanic membrane and learn (Use of Seigle's speculum). • Demonstrate the use of tuning forks and interpret the findings. • Demonstrate Syringing of ear. Reproduce steps of recording tympanogram and hearing levels on audiogram	OPD / Ward • Video clip of examination of ear. • Demonstration of clinical examination of ear. • Practical session of examination of ear • Examination of ear on patients I Assessment of Hearing • Audiogram / Tympanogram, practical demonstration & discussion Instruments

	• Interpret audiogram and tympanogram Identify all common Ear instruments used in OPD	• Students must be shown ear instruments used in OPD
2	Perform OT scrub for surgery according to the protocol • Reproduce the procedure of the operations, mentioned in column III, including their indications and post-operative care • Identify all common Ear instruments used in OT	OT • How to enter the operation theatre. • How to behave in OT Steps of washing and preparation for operation Students should observe the following operations • Myringotomy • I/D of hematoma ear • Removal of Foreign body ear

		Myringoplasty and Mastoidectomy Abscess incision drainage/Hematoma ear Instruments • Students must be shown ear instruments used in above mentioned surgeries
02	Throat & Larynx	
	Special Skills • Take history of a patient with throat and laryngeal pathology • Perform examination of throat • Preform basic examination of larynx in a clinical setting • Identify all common instruments used in OPD	OPD/Ward • Clinical examination of throat, the steps and logic behind it • Video clip of throat examination. • Demonstration of examination of throat • Practical session of examination of throat on patients • Laryngeal Disorders Ward demonstration
	• Reproduce the procedure of the operations. mentioned in column. including their indications and post - Operative care	OT Students should observe the following operations

	• Performed tracheostomy in emergency situations • Identify all common instruments used in OT	• Tonsillectomy procedure tracheostomy. procedure, indication and post-operative care • Tracheostomy. procedure, indication and post-operative care • Students must be shown instrument s used in above mentioned surgeries
03	Nose	
	Special Skills • Take history of a patient with nasal pathology • Perform basic examination of nose and paranasal sinuses in a stepwise fashion • Diagnose a case of Nasal Polyps on the basis of glistening appearance of nasal polypi on anterior rhinoscopy • Interpret simple X-Ray / CT Scan for Nose, Paranasal Sinus, Nasopharynx and other simple ENT pathologies • Identify all common Nasal instruments used in OPD	OPD / Ward • Examination of nose and para nasal sinuses. The steps and logic behind it. • Video clip of examination of nose and para nasal sinuses. • Demonstration of nose and para nasal Sinuses • Practical session of examination of nose and para nasal minuses in patients • Nasal Polypi demonstration on patient • Simple X-Ray CT Scan for Sinus, Parnnasal Sinus, Nasopharynx and other simple ENT pathologies
	• Reproduce the procedure of the operations, mentioned in	OT

	column, including their indications and post- operative care • Identify all common Nasal instruments used in OT	• Students should observe the following operations • Adenoidectomy • Septoplasty • How to carry out anterior nasnl packing • Sinus-lavage electrocautery • Observation of SMR, procedure, indications and post-operative care • Observation of FESS, indications, procedure and post-operative care • Epistaxis and its management Instruments Students must be shown instruments used in above mentioned surgeries
WARD TEST		

PROF. DR. AMER NADEEM

Head of ENT Department Ward-02
Nishtar Medical University Multan