STUDY GUIDE

FOURTH YEAR MBBS,

2026

PATHOLOGY COURSE

Department of Pathology
Services Institute of Medical Sciences, Lahore
Updated on January 2026

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MISSION STATEMENT

Our mission is to produce Empathic, Skillful, Research oriented and Innovative health care professionals who can provide Preventive, Curative and Rehabilitative services to the community without any discrimination to humanity through a standardized quality Medical Education Program that is recognized both Nationally and Internationally.

INTRODUCTION

Dear Students,
Welcome to the Fourth year MBBS **pathology Course**. The Department of Pathology will be facilitating the course. Four sections namely, **Histopathology Haematology, Microbiology & Chemical pathology** will assist your learning in the subject. You will spend 283 study hours in fourth year learning the different aspects of the subject.

Introduction to Special pathology

Special Pathology is a riveting subject at the undergraduate level which enables the student to recognize the structural and functional causes of human disease, thereby making it the crux of all medicine. The four aspects of a disease process that form the core of pathology are: the cause of a disease (etiology), the mechanism(s) of disease development (pathogenesis), the structural alterations induced in cells and tissues by the disease (morphologic change) and the functional consequences of the morphologic changes (clinical significance). To gain a proper clinical and factual understanding of each of these four aspects is crucial when it comes to mastering the subject at hand. The constant, individualized efforts of our highly qualified faculty in every facet of the subject allow this task to be accomplished, provided that the requisite time and effort is put forward on the behalf of the student, as well. All major subjects of Special Pathology (Histopathology, Hematology and Chemical Pathology) would be covered in the form of lectures and tutorials. Hence, every aspect, whether it be hands-on or textbook, will be covered comprehensively to ensure the complete success of the student.

What is Study Guide

The purpose of the study guide is to help you learn the subject of **Pathology**. It is designed to help you organize your learning by providing learning objectives of the subject, divides the subject into modules for easy learning and highlight skills or knowledge you should acquire, aligning with what will be assessed. Moreover, it guides you about learning resources and overview of assessment including the format and weighting of these assessments

Course Requirements

The basic sciences courses you did in the last three years are pre-requisites for the course of Pathology and will help you in better understanding of the subject and its application to understand pathogenesis of various aspects of disease. We advise you to refer to these subjects if there are any issues in understanding the subject.

Message for the Students

We hope the students take time out to go through the guide and to use it effectively to learn the subject of Pathology. We look forward to feedback from the students and faculty so that the guide can be improved further.
For any assistance please do not hesitate to contact the teaching faculty of the department of Pathology. (Details available at SIMS website, DME and student section office). Alternatively, please feel free to visit the head of the department for any issues that you face in learning of the subject or otherwise.
We hope that your rotation in our department will be very fruitful and enjoyable and will equip you for future practical life.

With Compliments:

Head of Department and Members of Faculty, Department of Pathology

TEACHING FACULTY

Sr.#	NAME	DESIGNATION	QUALIFICATION
1.	Dr Fatima Khanum	Professor	M.B.B.S, M.Phil Haemotology
2.	Dr. Asma Munir	Professor	M.B.B.S, F.C.P.S Haematology
3.	Dr. Rabia Bashiarat	Professor	M.B.B.S, F.C.P.S Histopathology
4.	Dr. Zunaira Rathore	Professor	M.B.B.S, F.C.P.S Histopathology
5.	Dr Fauzia Tabassum	Associate Professor	M.B.B.S, F.C.P.S Haematology
6.	Dr Abeer	Associate Professor	M.B.B.S, F.C.P.S Histopathology
7.	Dr. Moazzam Ali	Assistant Professor	M.B.B.S, M.Phil Chemical Pathology
8.	Dr.Shafqat Husnain Khan	Assistant Professor	M.B.B.S, M.Phil FCPS Microbiology
9.	Dr. Arsala Rashid	Assistant Professor	M.B.B.S, F.C.P.S Haematology
10.	Dr Anum Jamil	Assistant Professor	M.B.B.S, F.C.P.S Histopathology
11.	Dr. Farah Kalsoom	Assistant Professor	M.B.B.S, F.C.P.S, FRCPath Histopathology
12.	Dr. Tayyaba Komal	Assistant Professor	M.B.B.S, M.Phil Microbiology
13.	Dr. Anum Shahid	Assistant Professor	M.B.B.S, M.Phil, F.C.P.S, Dip RCPath Histopathology
14.	Dr. Mazhar Fareed	APMO	M.B.B.S, M.Phil Haematology
15.	Dr.Hafiz Muhammad Umair	APMO	M.B.B.S, M.Phil Haematology
16.	Dr. Hira Kareem	Demonstrator	M.B.B.S, M.Phil Histopathology
17.	Dr. Hafiz M. Bilal Saleh	Demonstrator	M.B.B.S
18.	Dr. Farhana Ashraf	Demonstrator	M.B.B.S
19.	Dr. Ayesha Shahid	Demonstrator	M.B.B.S
20.	Dr. Ibn-e-Hassan	Demonstrator	M.B.B.S, M.Phil Histopathology
21.	Dr. Roop-e-Zahra	Demonstrator	M.B.B.S
22.	Dr. Salman Haseeb	Demonstrator	M.B.B.S

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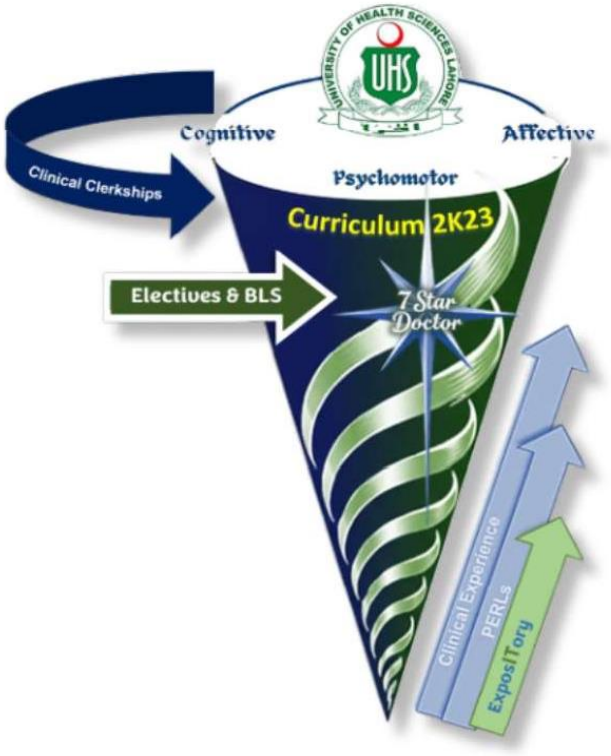
MBBS Year-04

YEAR-4



FOURTH YEAR MBBS		
BLOCK X	**BLOCK XI**	**BLOCK XII**
Community Medicine & Family Health-II	Neurosciences-II	Endocrine & Reproduction- II
	Psychiatry & Behavioural Sciences	
GIT & Nutrition- II	Renal-II	Dermatology
Eye & ENT-I	Eye & ENT-II	Eye & ENT-III
11 WEEKS	**14 WEEKS**	**11 WEEKS**

**Each institute will prepare a comprehensive program planner ensuring that the following activities are scheduled appropriately for the whole academic year:

- Routine classes and assessments (as per timetable)
- Dedicated library time
- Self-study hours
- Clinical rotations
- Co-curricular and extra-curricular activities
- Mandatory clinical skills workshops
- Protected research time
- End-of-module interdisciplinary seminars, symposiums, and CPCs
- Elective activities

Proposed Teaching Timetable

Pathology – Fourth Year MBBS (2026)

Block X (Pathology)

Total Duration: 11 weeks

Lectures:
- Total lectures required: 35
- Lecture frequency: 4 lectures per week

Practicals:
- Total practical sessions required: 20
- Practical frequency: 2 practical sessions per week

Block XI (Pathology)

Total Duration: 14 weeks

Lectures:
- Total lectures required: 22
- Lecture frequency: 2 lectures per week

Practicals:
- Total practical sessions required: 28
- Practical frequency: 2 practical sessions per week

Block XII (Pathology)

Total Duration: 11 weeks

Lectures:
- Total lectures required: 22
- Lecture frequency: 2 lectures per week

Practicals:
- Total practical sessions required: 20
- Practical frequency: 2 practical sessions per week

Teaching Time Calculation

Lecture Time:
- Total number of lectures: 79
- Duration of each lecture: 1 hour

Total lecture teaching time: 79 hours

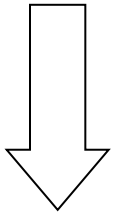
Practical Time:
- Total number of practical sessions: 68
- Duration of each practical session: 1 hour 30 minutes (1.5 hours)
- Practicals conducted twice per week

Total practical teaching time: 204 hours

Total Teaching Time (Lectures + Practicals): Total teaching time: 283 hours

CURRICULUM FRAMEWORK

You will study details here



First year	**Second Year**	Third Year	Fourth Year	Final Year	House Job

You are entering the 4rth year of your MBBS now. In this ear you'll be having lectures, practical/OSPE review, tutorials & a grand tutorial. In the final assessment you will be assessed in all aspects of pathology. So, learn carefully and revise it very often till your final professional examination.

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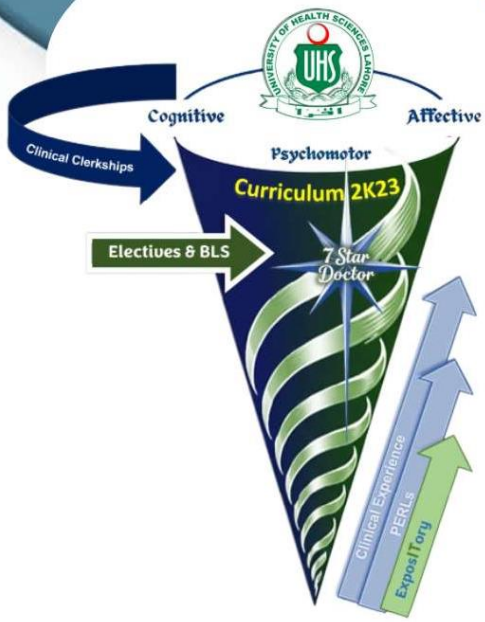
MBBS Year-04

BLOCK-10



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Volume-04

MODULE 25

GIT & NUTRITION-II

MODULE RATIONALE

In GIT and Nutrition II, students developed a foundational understanding of the normal structure and mechanisms of the gastrointestinal system and nutrition. Building on this base, GIT and Nutrition II shifts the focus to pathological basis and clinical aspects of gastrointestinal and nutritional disorders. The module emphasizes disease mechanisms, characteristic pathological features, clinical presentations, diagnostic approaches, and evidence-based management of both common and significant GIT conditions, with nutrition considered in relation to these disorders. Students will gain a deeper understanding of how pathological changes translate into clinical symptoms and disease progression, with conditions such as infections, peptic ulcer disease, liver disorders, inflammatory bowel disease, gastrointestinal malignancies, and malabsorption syndromes explored for their clinical relevance and impact on patient outcomes. Nutritional aspects, including deficiencies and metabolic derangements, will be studied in parallel, reinforcing

their close link with gastrointestinal health and disease.

MODULE OUTCOMES

- Describe the pathophysiology of major GIT diseases.
- Apply clinical knowledge of GIT pathology to diagnose and manage common GIT conditions.
- Integrate pharmacological treatment options for GIT disorders.
- Appreciate the role of nutrition in maintaining and restoring GIT health.
- Understand the impact of GIT pathology in community health settings.
- Identify psychological factors contributing to GIT disorders.

SUBJECTS INTEGRATED IN THE MODULE

1. Pathology
2. Clinical Pharmacology & Therapeutics
3. General Medicine
4. General Surgery
5. Community Medicine

THEORY			
ORAL CAVITY & SALIVARY GLAND TUMORS			
CODE	**SPECIFIC LEARNING OUTCOMES**	**INTEGRATING DISCIPLINE**	**TOPIC**
GIT2-Pa-001	Classify and describe the morphological features of oral infectious diseases.	Pathology	Oral infectious diseases
GIT2-Pa-002	Describe briefly benign, premalignant, and malignant oral lesions.		Oral lesions
GIT2-Pa-003	Classify salivary gland tumors into benign and malignant types.		Salivary gland tumors
GIT2-Pa-004	Discuss the histopathological features of pleomorphic adenoma and Warthin's tumors.		Pleomorphic adenoma
GIT2-Pa-005	Differentiate the pathological features of common malignant salivary gland tumors.		Malignant salivary gland tumors
GIT2-Pa-006	Explain the role of immunohistochemistry and other diagnostic tools in differentiating between various salivary gland tumors.		Diagnostic tools
ESOPHAGUS			
GIT2-Pa-007	Discuss in detail the pathological causes of esophageal obstruction.	Pathology	Esophageal obstruction
GIT2-Pa-008	Enumerate and describe the pathogenesis of different types of esophagitis.	Pathology	Esophagitis
GIT2-Pa-009	Describe the pathogenesis of esophageal varices.	Pathology	Esophageal Varices
GIT2-Pa-010	Describe in detail the morphology of Barret's esophagus with major complications.	Pathology	Barret's Esophagus
GIT2-Pa-011	Classify esophageal tumors. Describe the pathogenesis and morphology of adenocarcinoma and squamous cell carcinoma of the esophagus.	Pathology	Esophageal Tumors

STOMACH AND DUODENUM			
GIT2-Pa-017	Describe the pathogenesis and morphology of acute gastritis.	Pathology	Acute gastritis
GIT2-Pa-018	Enumerate the causes of chronic gastritis with special emphasis on the pathogenesis of H. Pylori gastritis and autoimmune gastritis. Describe the differentiating features of H. Pylori and autoimmune gastritis.	Pathology	Chronic gastritis
GIT2-Pa-019	Describe the pathogenesis, morphology, and complication of peptic ulcer disease.	Pathology	Peptic ulcer disease
GIT2-Pa-020	Discuss in detail the hypertrophic gastropathies.	Pathology	Hypertrophic gastropathies
GIT2-Pa-021	Describe the important features of the fundic gland, inflammatory, hyperplastic polyps, and gastric adenomas.	Pathology	Gastric polyps and adenomas
GIT2-Pa-022	Classify gastric tumors. Describe the morphology of gastric adenocarcinomas and its two types. Describe the morphology of maltoma and its immunohistochemistry. Describe the morphology and variants of Gastrointestinal Stromal Tumours (GIST) and its immunohistochemistry. Describe the location, morphology, and important features of carcinoid tumors.	Pathology	Gastric tumors

SMALL & LARGE INTESTINE			
GIT2-Pa-035	Describe the morphological features of ischemic bowel disease with special emphasis on its causes and mutations involved. Enumerate the pathological causes of malabsorption syndrome. Describe the morphology, Marsh classification, and lab diagnosis of Celiac disease. Describe the pathogenesis and morphological features of Whipple disease.	Pathology	Diseases of the Small and Large Intestines
GIT2-Pa-036	Enumerate the common causative agents of infectious enterocolitis including bacterial, viral, and parasitic. Explain the pathogenesis of enterocolitis caused by Salmonella, Mycobacterium tuberculosis, and Clostridium difficile.	Microbiology	Causative agents of infectious enterocolitis
GIT2-Pa-037	Describe the pathogenesis, microscopic and macroscopic features, and complications of Crohn's disease and Ulcerative colitis.	Pathology	Crohn's disease and ulcerative colitis
GIT2-Pa-038	Classify the intestinal polyps. Describe the morphological features of: i. Hyperplastic polyps ii. Inflammatory polyps iii. Hamartomatous polyps iv. Peutz-Jeghers syndrome Classify polyposis syndromes and describe: i. Complications ii. Genetic mutations iii. Extra-gastrointestinal manifestations iv. Morphology	Pathology	Intestinal polyps

GIT2-Pa-039	Classify neoplastic polyps and describe their morphological features in detail. Describe in detail the pathogenesis and morphological features of colorectal carcinoma. Enumerate immunohistochemical markers and TNM/ AJCC staging.	Pathology	Neoplastic polyps and colorectal carcinoma
GIT2-Pa- 040	Describe the etiology and morphological features of acute appendicitis. Classify the tumors of the appendix and discuss their clinical importance.	**Pathology**	**Diseases of appendix**

HEPATOBILLARY SYSTEM			
GIT2-Pa-052	Enumerate the causes of jaundice with special emphasis on hereditary hyperbilirubinemias. Differentiate between cholestasis and hepatocellular jaundice. Describe the pathological changes in liver cirrhosis that occur at the cellular and structural levels. Interpret liver function tests (LFTs) and correlate abnormal results.	Pathology	Jaundice
GIT2-Pa-053	Identify the etiology and pathogenesis of viral hepatitis (A, B, C, D, and E), including their modes of transmission and effects on the liver. Identify the clinical and pathological features of acute liver failure.	Pathology	Viral hepatitis

GIT2-Pa-054	Explain the pathogenesis and morphology of alcoholic liver disease (fatty liver, alcoholic hepatitis, and cirrhosis). Describe non-alcoholic fatty liver disease (NAFLD) and its progression to non-alcoholic steatohepatitis (NASH) and cirrhosis. Describe the differentiating features of primary biliary cholangitis, secondary biliary cirrhosis, and primary sclerosing cholangitis.	Pathology	Alcoholic and non-alcoholic fatty liver disease
GIT2-Pa-055	Classify the liver nodules and tumors along with salient morphological features. Discuss the pathogenesis of hepatocellular carcinoma (HCC), including risk factors like cirrhosis and hepatitis, precursor lesions, and morphological variants. Describe the differentiating features of HCC and cholangiocarcinoma along with immunohistochemistry. Explain the pathogenesis and risk factors contributing to the development of cholangiocarcinoma.	Pathology	Pathogenesis of Hepatocellular carcinoma
GIT2-Pa-056	Enumerate the types of gallstones. Explain the etiopathogenesis of gallstones. Explain the pathophysiology and morphology of acute and chronic cholecystitis.	Pathology	Cholelithiasis
GIT2-Pa-057	Describe the pathogenesis of acute pancreatitis, its morphology and lab diagnosis. Describe the morphology of chronic pancreatitis and its complications.	Pathology	Pancreatitis
GIT2-Pa-058	Classify the neoplasms of the pancreas, precursor lesions to pancreatic cancers, and its morphology along with tumor markers.	Pathology	Pancreatic cancers

SPLEEN			
GIT2-GE-067	Enumerate the causes of splenomegaly. Describe the morphology of splenic congestion and splenic rupture.	Pathology	Morphology of splenic congestion

PRACTICAL / LAB WORK

PATHOLOGY

CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC
GIT2-Pa-076	Identify the classical morphological features (gross and microscopic) of Barrett's esophagitis, gastric carcinoma, Celiac disease, familial adenomatous polyposis, Peutz Jegher's syndrome, adenocarcinoma colon, Crohn's disease, ulcerative colitis, acute appendicitis and salivary gland tumors (pleomorphic adenoma, Warthin's tumor).	Pathology	Gastrointestinal tract
GIT2-Pa-077	Identify the classical morphological features (gross and microscopic) of fatty liver, liver cirrhosis, hepatocellular carcinoma, gall stones, and chronic cholecystitis. Interpret the reports of abnormal liver function test and acute pancreatitis.		Gallbladder & Pancreas

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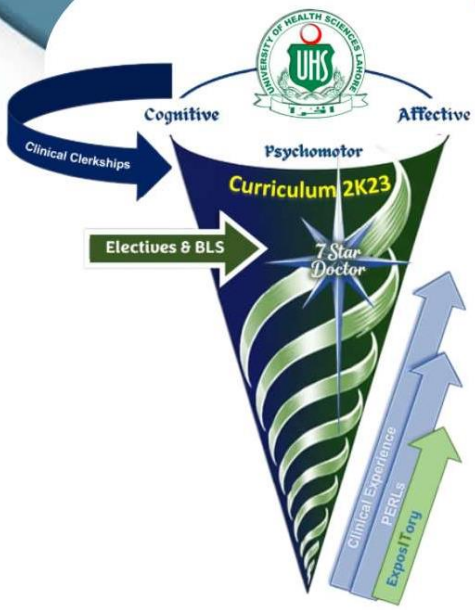
MBBS Year-04

BLOCK-11



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Volume-04

MODULE 27

NEUROSCIENCES-II

MODULE RATIONALE

Building upon the foundational understanding developed in Neurosciences Module I (covered in Block 6), which focused on the basic sciences of CNS, Neurosciences Module II extends this knowledge toward clinical application. This module emphasizes neurology, pharmacology, pathology, and the clinical aspects of neurological disorders, enabling students to connect underlying mechanisms with clinical presentation and management. By integrating basic concepts with pharmacological and therapeutic approaches, the module promotes deeper comprehension of disease processes, rational drug use, and patient-centered care. It also encourages the development of clinical reasoning and critical thinking by linking structure, function, and dysfunction within the nervous system. Overall, Neurosciences Module II serves as a bridge between foundational sciences and clinical practice, ensuring vertical and horizontal integration across disciplines while preparing students for future clinical rotations and decision-making in neurological care.

MODULE OUTCOMES

- Explain the pathophysiological basis of common neurological disorders by linking structural and functional alterations in the nervous system to clinical manifestations.
- Describe the pharmacological basis of drugs used in neurological conditions, including their mechanisms of action, therapeutic uses, adverse effects, and rational prescribing principles.
- Integrate knowledge of basic neuroscience with clinical decision-making to interpret signs, symptoms, and investigations relevant to neurological diseases.
- Discuss the principles of multidisciplinary management in neurological disorders, incorporating pharmacological, rehabilitative, and preventive perspectives.
- Counsel patients with neurological diseases with empathy demonstrating effective communication skills.

SUBJECTS INTEGRATED IN THE MODULE

1. Neurology
2. Pathology
3. Pharmacology
4. General Medicine
5. Pediatric Surgery/ Neurosurgery

THEORY			
CODE	**SPECIFIC LEARNING OUTCOMES**	**INTEGRATING DISCIPLINE**	**TOPIC**
NS2-Pa-001	Explain the etiology and pathophysiological mechanisms of acute viral, lymphocytic, and purulent meningitis. Describe the etiology, pathogenesis, and clinical implications of a brain abscess. Discuss the causative factors and pathophysiology of chronic meningitis. Explain the pathogenesis and complications of tuberculous meningitis. Explain the etiology, transmission, and neuropathological changes associated with viral encephalitis.	Pathology/ Microbiology	CNS Infections
NS2-Pa-006	Classify central nervous system (CNS) tumors based on the WHO classification. Describe the genetic mutations, pathogenesis, morphology, and clinical manifestations of major primary brain tumors, including gliomas, ependymomas, medulloblastomas, and meningiomas. Discuss the pathogenesis, common primary sites, and clinical features of metastatic brain tumors.	Pathology	CNS tumors
NS2-Pa-007	Define and enlist the major types of neurodegenerative disorders affecting the central nervous system. Explain the role of abnormal protein aggregation in the pathogenesis of neurodegenerative diseases. Describe the molecular genetics, pathogenic mechanisms, and morphological changes associated with Alzheimer's disease. Identify the clinical features and diagnostic criteria of Alzheimer's disease. Explain the molecular genetics and pathogenesis of Parkinson's disease.	Pathology	Neurodegenerative diseases

	Describe the key morphological findings, clinical manifestations, and diagnostic criteria of Parkinson's disease.		
NS2-Pa- 014	Explain the pathophysiology of inflammatory neuropathies, including Guillain-Barré Syndrome (Acute Inflammatory Demyelinating Polyneuropathy). Describe the clinical features, pathological changes, and disease progression of Guillain-Barré Syndrome. Explain the pathophysiology and morphological changes of poliomyelitis, including anterior horn cell involvement. Describe the pathogenesis, morphological features, and clinical implications of prion diseases.	**Pathology**	**Guillain-Barré Syndrome, poliomyelitis & prion diseases**
NS2-Pa- 016	Describe the structural and functional differences between Type I and Type II muscle fibers. Explain the pathogenesis, morphological features, and diagnostic criteria of inflammatory myopathies, including dermatomyositis and polymyositis. Discuss the etiology, pathophysiology, and histopathological characteristics of inherited skeletal muscle diseases, including Duchenne and Becker muscular dystrophies. Correlate pathological findings with clinical presentation and disease progression in the above disorders.	**Pathology/ Neurology**	**Myopathies**

PRACTICAL / LAB WORK			
CODE	**SPECIFIC LEARNING OUTCOMES**	**INTEGRATING DISCIPLINE**	**TOPIC**
NS2-Pa-008	Interpret CSF reports, including cell count, protein, glucose, and microbiological findings	Pathology	CSF interpretation
NS2-Pa-009	Identify characteristic histopathological features of tuberculous meningitis.	Pathology	Tuberculous meningitis
NS2-Pa-010	Identify the classical characteristic morphological features of meningioma and glioblastoma.	Pathology	CNS tumors

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Volume-04

MODULE 29

RENAL-II

MODULE RATIONALE

The Renal II module builds upon the foundational knowledge acquired in Renal I, which focused on the basic sciences of the renal system, including anatomy, physiology, and biochemistry. In this second phase, students will integrate and apply that foundational understanding to clinical contexts. The module emphasizes the recognition and interpretation of signs and symptoms of renal diseases, understanding their underlying pathophysiological mechanisms, and exploring diagnostic approaches and management principles. Through an integrated approach involving pathology, nephrology, radiology, and urology perspectives, students will develop a holistic understanding of renal disorders.

MODULE OUTCOMES

- Explain the pathophysiological mechanisms underlying common renal and urinary tract disorders.
- Correlate clinical features with the underlying renal pathology.
- Interpret relevant laboratory investigations and imaging findings to support diagnosis of renal and urinary diseases.
- Outline the basic principles of management and prevention of common renal conditions from nephrology and urology perspectives.
- Demonstrate essential clinical skills, including history taking, physical examination, and procedural observation related to renal disorders.
- Counsel patients and their families with empathy regarding disease understanding, lifestyle modification, and adherence to treatment plans.

SUBJECTS INTEGRATED IN THE MODULE

1. Pathology
2. Pharmacology
3. Nephrology
4. Urology


Syllabus

THEORY			
GLOMERULAR DISEASES			
CODE	**SPECIFIC LEARNING OUTCOMES**	**INTEGRATING DISCIPLINE**	**TOPIC**
Re2-Pa-001	Describe the etiological factors causing nephrotic syndrome (primary and secondary including diabetic nephropathy). Explain the pathogenesis of proteinuria, hypoalbuminemia, and edema. Describe the gross and microscopic changes in glomeruli associated with nephrotic syndrome. Diagnose nephrotic syndrome based on clinical presentation and findings.	Pathology	Nephrotic Syndrome
Re2-Pa-002	Explain the etiopathogenesis and morphology of podocytopathies: • Minimal Change Disease • Focal Segmental Glomerulosclerosis (FSGS)	Pathology	Podocytopathies
Re2-Pa-003	Enumerate the etiological factors including idiopathic and secondary causes. Explain the pathogenesis and morphology of membranous nephropathy.	Pathology	Membranous Nephropathy

Re2-Pa-005	Describe the etiology and precipitating infections leading to PSGN. Explain the immunopathogenesis involving immune complex deposition. Identify the gross and microscopic features characteristic of PSGN.	Pathology	Post-Streptococcal Glomerulonephritis (PSGN)
Re2-Neph-006	Describe the etiological factors and risk associations of IgA-mediated renal disease. Explain the pathogenesis focusing on IgA immune complex deposition in the mesangium and small vessels. Identify the characteristic gross and microscopic changes in renal tissue. Correlate histopathological features with clinical manifestations. Outline the relevant laboratory investigations for diagnosis, monitoring, and follow-up. Discuss the management plan. Describe prognostic factors and potential progression to chronic kidney disease. Differentiate IgA nephropathy from Henoch-Schönlein Purpura based on clinical presentation, systemic involvement, and severity.	Nephrology/ Pathology	IgA Nephropathy (Berger's Disease) and Henoch - Schönlein Purpura (IgA Vasculitis)
Re2-Pa-007	Enumerate the etiological and immunological types of RPGN. Explain the pathogenesis of crescent formation and rapid renal failure. Describe the gross and microscopic features of each type.	Pathology	Rapidly Progressive Glomerulonephritis (RPGN)
TUBULOINTERSTITIAL DISORDERS			

Re2-Pa-008	Define acute tubular necrosis and differentiate it from other causes of acute kidney injury. Describe the etiological factors of ischemic and nephrotoxic ATN. Explain the pathogenesis and sequence of tubular injury and repair. Describe the gross and microscopic changes in ischemic and nephrotoxic ATN. Correlate pathological changes with clinical features and laboratory findings. Outline the principles of management and prognosis.	Pathology/ Nephrology	Acute tubular necrosis
Re2-Pa-010	Describe the etiological and genetic factors of polycystic kidney disease. Explain the pathogenesis of cyst formation in PKD. Describe the gross and microscopic morphological features. Correlate pathological features with clinical manifestations. Enumerate the laboratory and imaging investigations used in diagnosis. Outline the principles of management and prognosis.	Pathology	Polycystic kidney disease

PROSTATE AND MALE GENITOURINARY DISORDERS			
Re2-Pa-007	Explain the etiology, pathogenesis, and morphology of benign prostatic hyperplasia (BPH), prostatitis, and prostate cancer. Identify the tumor marker for prostate cancer and its	Pathology	Prostatic Diseases (BPH, Prostatitis, Prostate Cancer)
RENAL, UROTHELIAL, AND TESTICULAR TUMORS			
Re2-Pa-009	Classify renal tumors into benign and malignant types. Describe the etiological factors and risk associations of renal cell carcinoma. Explain the pathogenesis and molecular mechanisms involved in renal tumor development. Describe the gross and microscopic features of renal cell carcinoma. Correlate pathological features with clinical manifestations and complications. Discuss the prognostic factors influencing outcome and survival. Outline the principles of diagnosis and management.	Pathology/ Nephrology	Renal Cell Carcinoma (RCC)

Re2-Pa-010	Define Wilms' tumor and describe its epidemiological features. Explain the genetic and developmental basis of its pathogenesis. Describe the gross and microscopic morphological features of Wilms' tumor. Correlate the pathological findings with clinical manifestations. Discuss the prognostic factors influencing outcome and survival. Outline the basic principles of diagnosis and management.	Pathology/ Nephrology	Wilms Tumor (Nephroblastoma)
Re2-Pa-011	Describe the etiology and risk factors of Urothelial cell carcinoma. Explain the pathogenesis and morphological features (gross and microscopic).	Pathology	Urothelial cell carcinoma

Re2-Pa-013	Classify testicular tumors. Describe etiology, pathogenesis, and morphology of germ cell and sex cord tumors of testis. Describe the lab diagnosis of testicular tumors including tumor markers.	Pathology	Testicular tumors

PRACTICAL / LAB WORK			
CODE	**SPECIFIC LEARNING OUTCOMES**	**INTEGRATING DISCIPLINE**	**TOPIC**
Re2-Pa-020	Interpret urine analysis report, including protein, RBCs, casts, infection markers, and microscopic examination of urine sediment.	Pathology	Urine Examination
Re2-Pa-021	Interpret renal function tests, including serum creatinine, blood urea, electrolytes, and eGFR.	Pathology	Renal Function Test
Re2-Pa-022	Identify the classical microscopic features of nephritic diseases (PSGN) and nephrotic diseases (minimal change, membranous, FSGS). (pictorial)	Pathology	Glomerulonephrit is
Re2-Pa-023	Identify the classical gross and microscopic features of cystic disease of kidney, renal cell carcinoma, Wilm's tumor, and urothelial neoplasm. (pictorial)	Pathology	Cystic diseases and renal tumors
Re2-Pa-024	Identify the classical gross and microscopic features of seminoma, teratoma, and benign prostatic hyperplasia (BPH). (pictorial)	Pathology	Testicular tumors

MODULE NO.30
EYE & ENT-II

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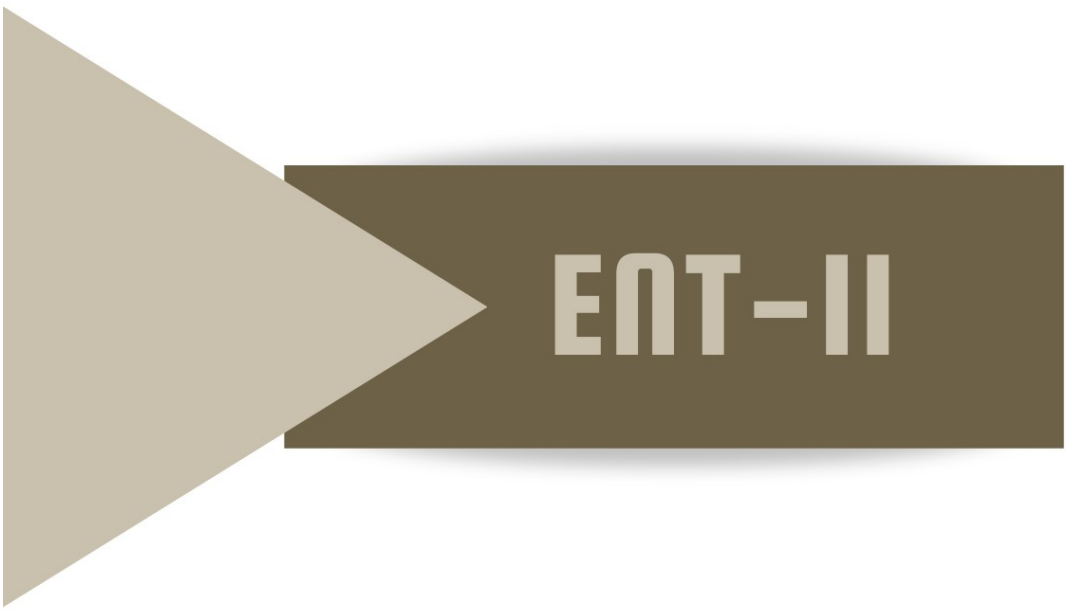
Volume-04


ENT-II


Syllabus

MODULE RATIONALE

The inclusion of module related to otorhinolaryngology in the undergraduate medical curriculum is imperative to ensure that future physicians acquire the essential knowledge and skills to diagnose and manage both common and potentially serious otorhinolaryngological conditions. Such training not only contributes to improved patient care but also alleviates the burden on specialized ENT (ear, nose, throat) services, thereby enhancing overall healthcare delivery and efficiency. The objective of this module is to outline the essential knowledge, skills, attitudes, and competencies in otorhinolaryngology that must be attained during undergraduate medical training.

MODULE OUTCOMES

- Explain the pathophysiology and clinical features of common ear, nose, and throat disorders.
- Identify and diagnose prevalent otorhinolaryngological conditions through history-taking and clinical evaluation.
- Perform basic otorhinolaryngological examination techniques competently.
- Initiate appropriate first-line management for common ENT conditions and determine indications for timely referral to specialist care.
- Recognize and provide initial stabilization for otorhinolaryngological emergencies, such as airway obstruction and severe epistaxis, followed by appropriate referral.
- Communicate effectively with patients regarding ENT conditions, management options, and preventive strategies, ensuring clarity and patient-centered care.
- Demonstrate professionalism, ethical conduct, and a respectful attitude in the care of patients with otorhinolaryngological conditions

SUBJECTS INTEGRATED IN THE MODULE

Anatomy

Physiology

Pharmacology

Forensic Medicine

THEORY			
ENT-II (NOSE)			
CODE	**SPECIFIC LEARNING OUTCOMES**	**INTEGRATING DISCIPLINE**	**TOPIC**
ENT2-Nose-011	Describe the pathology, clinical features, and surgical importance of Inverted Papilloma. Explain the clinical presentation, diagnosis, and management principles of Transitional cell carcinoma of the sinonasal region. Correlate the surgical anatomy of the sinonasal region with the spread and complications of these neoplasms.	ENT/Pathology	Sino nasal neoplasm

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MODULE 31

ENDOCRINONOLOGY & REPRODUCTION-II

MODULE RATIONALE

Endocrinology and Reproduction II builds upon the foundation laid in Endocrinology and Reproduction I (Block 5), in which the anatomy and physiology of the endocrine organs and the functional biochemistry of their hormones were taught in an integrated fashion with reference to common diseases occurring in the Pakistani community. This second module advances from normal physiology to the study of pathology, related pharmacology, and clinical aspects of endocrine, gynecological, and urological disorders. It emphasizes integration of basic sciences with clinical application to strengthen diagnostic reasoning and therapeutic decision-making.

In addition to patient-level care, the module incorporates community medicine and public health perspectives, focusing on prevention, early detection, and health promotion strategies for prevalent conditions such as diabetes, thyroid disorders, infertility, menstrual health problems, and reproductive cancers. Through this integration, students will develop a holistic understanding of endocrine and reproductive health, equipping them to address these issues both in clinical practice and at the population level.

MODULE OUTCOMES

- Explain the pathophysiology of common endocrine, gynecological, and urological disorders.
- Correlate pathology, pharmacology, and clinical features of endocrine and reproductive system disorders to strengthen diagnostic reasoning.
- Demonstrate an understanding of pharmacological principles in the management of endocrine, gynecological, and urological conditions.
- Perform focused clinical assessments, including history taking and physical examination, to evaluate endocrine and reproductive health problems.
- Interpret essential laboratory and imaging investigations in the diagnosis of common conditions.
- Demonstrate professional communication and counseling skills by educating patients and families about disease, treatment options, and preventive measures.

SUBJECTS INTEGRATED IN THE MODULE

Endocrinology/Medicine

Gynecology

Pharmacology

Pathology

Urology


Syllabus

THEORY		
SPECIFIC LEARNING OUTCOMES	**DISCIPLINE**	**TOPIC**
HYPOTHALAMIC AND PITUTARY DISORDERS		
EnR-Pa-006	Classify pituitary adenomas. Describe etiopathogenesis of pituitary adenomas. Describe their gross and microscopic pathological features. Correlate the clinical features with the type of hormone secreted (prolactinoma, somatotroph adenoma, corticotroph adenoma). Discuss the complications. Outline the diagnostic approach including hormonal assays, imaging findings, and histopathology.	Pathology	Pituitary Adenomas
THYROID AND PARATHYROID DISORDERS		
CODE	**SPECIFIC LEARNING OUTCOMES**	**DISCIPLINE**	**TOPIC**
EnR-Pa-015	Classify thyroid tumors based on histopathological types: papillary, follicular, medullary, anaplastic. Identify clinical presentation, risk factors and diagnostic approaches including molecular testing. Identify prognostic indicators and follow-up requirements.	Pathology	Thyroid Neoplasms

PANCREATIC DISORDERS			
CODE	**SPECIFIC LEARNING OUTCOMES**	**DISCIPLINE**	**TOPIC**

EnR-En-025	Describe the underlying pathophysiology of pancreatic β-cells leading to insulin deficiency. Diagnose Type 1 Diabetes Mellitus based on clinical presentation and diagnostic findings. Identify acute complications of T1DM. Describe the pathophysiology, clinical manifestations, and laboratory findings of diabetic ketoacidosis. Outline the management principles of Type 1 Diabetes Mellitus, focusing on insulin therapy, dietary regulation, lifestyle modification, and self-monitoring of blood glucose.	Endocrinology/ Medicine/ Pathology	Diabetes Mellitus Type 1
EnR-En-026	Identify clinical presentation of Type 2 Diabetes and differentiate it from type 1 diabetes. Describe the pathophysiology of insulin resistance and relative insulin deficiency. Identify risk factors. Discuss diagnosis and monitoring. Outline management strategies and patient counselling.		Diabetes Mellitus Type 2

ADRENAL GLAND DISORDERS			
CODE	**SPECIFIC LEARNING OUTCOMES**	**DISCIPLINE**	**TOPIC**
EnR-En-039	Explain the underlying pathophysiology of Conn's Syndrome. Identify the key clinical manifestations and correlate them with the underlying biochemical changes. Interpret the laboratory findings and diagnostic tests used to confirm Conn's syndrome. Outline the principles of management, including medical and surgical treatment options.	Endocrinology/ Pathology	Conn's Syndrome
EnR-Pa-040	Classify adrenal tumors. Describe the etiopathogenesis of pheochromocytoma. Explain the morphological features of pheochromocytoma. Describe the clinical manifestations due to excess catecholamine secretion. Interpret relevant laboratory and imaging findings used in the diagnosis of adrenal tumors. Outline the principles of management, including surgical, medical, and supportive treatment approaches	Pathology/ Endocrinology	Tumors of the adrenal cortex and medulla

BREAST AND REPRODUCTIVE DISORDERS			
CODE	**SPECIFIC LEARNING OUTCOMES**	**DISCIPLINE**	**TOPIC**
EnR-Ph-044	Classify benign epithelial lesions for breast. Describe morphological changes of non proliferative and proliferative diseases of breast.	Pathology	Breast
	Classify benign, premalignant, and malignant tumors of breast. Enumerate molecular types of breast carcinoma. Describe the incidence, epidemiology, risk factors, pathogenesis, and morphology of breast carcinomas. Describe the prognostic and predictive factors for invasive carcinoma of breast. Describe grading and staging of breast carcinoma. Describe the role of FNAC, biopsy, and immunohistochemistry in diagnosis of breast cancer. Enumerate stromal tumors of breast. Describe the morphology of fibroadenoma and Phyllodes tumors.		

EnR-Pa-046	Describe the morphological features of uterine fibroids. Classify the types of fibroids based on location: submucosal, intramural, subserosal, and pedunculated. Explain the pathogenesis of fibroid development, including hormonal influences (estrogen and progesterone) and genetic factors.	Pathology	Uterine Fibroids

EnR-Pa-051	Define premalignant uterine conditions, including endometrial hyperplasia and its types. Describe the pathophysiology and histological classification of endometrial hyperplasia. Describe the pathophysiology and histological features of Hydatidiform mole. Explain the pathological mechanisms underlying progression from atypical endometrial hyperplasia to endometrial carcinoma. Classify uterine carcinoma based on histological type (endometrial carcinoma, uterine sarcoma) and describe its pathophysiology and staging. Discuss the prognosis of uterine carcinoma based on stage, grade, and histological type.	Pathology	Premalignant and Malignant Conditions of Uterus
EnR-Pa-052	Define benign cervical lesions and CIN. Differentiate between benign and premalignant cervical lesions based on histopathology. Explain the principles of cervical cytology, including Pap smear technique, interpretation, and the Bethesda reporting system. Describe the pathological significance of HPV infection in cervical lesions. Identify indications for cervical biopsy during colposcopy.	Pathology	Benign and Premalignant Lesions of the Cervix

EnR-Pa-053	Define benign ovarian cysts and classify them (functional cysts, dermoid cysts). Describe the pathophysiology and histological features of functional ovarian cysts (follicular and corpus luteum cysts). Define malignant ovarian neoplasms and categorize them into epithelial, germ cell, and sex-cord stromal tumors. Explain the pathophysiology and molecular mechanisms involved in ovarian tumor development.	Pathology	Benign and malignant ovarian tumors

PRACTICAL / LAB WORK			
CODE	**SPECIFIC LEARNING OUTCOMES**	**INTEGRATING DISCIPLINE**	**TOPIC**
EnR-Pa-053	Identify classical microscopic features of papillary carcinoma of thyroid. Interpret the report of abnormal thyroid function test.	Pathology	Thyroid cancer & Thyroid function test
EnR-Pa-054	Diagnose Diabetes Milletus on the basis of lab investigations.	Pathology	Lab investigations for Diabetes Milletus
EnR-Pa-055	Identify classical gross and microscopic features of endometrial carcinoma and uterine fibroids. Identify classical gross and microscopic features of ovarian cyst (serous and mucinous), and ovarian teratoma.	Pathology	Female genital pathology
EnR-Pa-056	Identify classical gross and microscopic features of fibroadenoma and breast carcinoma.	Pathology	Breast tumors

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MODULE 32

DERMATOLOGY

MODULE RATIONALE

Skin diseases are among the most common health problems and significantly impact patients' quality of life. A sound understanding of dermatological conditions is therefore essential for every medical graduate. This module is designed to provide medical students with fundamental knowledge and clinical skills in dermatology, integrated with related basic sciences. It emphasizes the recognition of common skin disorders, underlying pathophysiological mechanisms, and principles of management, while highlighting links with systemic diseases. Early clinical exposure, case-based discussions, and integration with disciplines such as microbiology, pathology, pharmacology, and internal medicine will prepare students to diagnose, manage, and appropriately refer patients with dermatological problems

MODULE OUTCOMES

- Identify and describe common dermatological disorders and their clinical presentations.
- Correlate pathological features with clinical manifestations to formulate differential diagnoses.
- Develop basic management and treatment plans for common dermatological conditions.
- Provide patient counseling on disease course, prevention, and lifestyle modifications.
- Apply principles of referral and recognize cases requiring specialist intervention.

SUBJECTS INTEGRATED IN THE MODULE

Dermatology

Pathology

Microbiology

Pharmacology

Community Medicine


Syllabus

THEORY			
DERMATOLOGY			
CODE	**SPECIFIC LEARNING OUTCOMES**	**DISCIPLINE**	**TOPIC**
Derm2-012	Describe the etiopathogenesis of lichen planus. Identify the classical clinical features. Enlist the differential diagnosis of lichen planus. Outline the treatment plan. Discuss preventive and long-term considerations, including malignant transformation risk.	Dermatology/ Pathology	Lichen Planus
Derm2-016	Describe the role of Staphylococcus aureus as a causative organism in skin infections. Describe the clinical patterns including impetigo, bullous impetigo, boils (abscesses), bacterial folliculitis, and infected eczema. Outline the diagnostic considerations, complications, and management principles. Identify acute bacterial skin infections caused by Streptococcus pyogenes. Describe their clinical patterns including non-bullous impetigo, ecthyma, and erysipelas. Identify the role of group A β-hemolytic streptococci (and occasionally groups B, C, G) as causative organisms. Outline the clinical course, complications, and management including systemic antibiotics.	Dermatology/ Microbiology	Acute bacterial skin infections
Derm2-017	Describe the etiological agent and routes of infection of cutaneous tuberculosis. Identify the major clinical forms of cutaneous tuberculosis. Outline the diagnostic approach and treatment. Describe the causative organism, transmission, and pathogenesis of leprosy. Identify the clinical spectrum of leprosy and cardinal signs of diagnosis.	Dermatology/ Microbiology	Chronic bacterial skin infections

	Explain the complications and deformities resulting from nerve involvement in leprosy. Outline the diagnostic approach and management principles.		
Derm2- 018	Explain the etiology and mode of transmission of molluscum contagiosum virus. Identify the clinical features and distribution of molluscum contagiosum lesions. Differentiate mollascum contagiosum from warts, milia, and basal cell carcinoma on basis of clinical features. Discuss treatment options and prevention strategies. Explain the etiopathogenesis of herpes zoster (Shingles) including reactivation of varicella-zoster virus. Describe the clinical features, dermatomal distribution, and prodromal symptoms. Differentiate herpes zoster from HSV, contact dermatitis, and impetigo on basis of clinical features. Outline management and prevention strategies. Identify the etiology and types of herpes simplex. Discuss the clinical presentation of primary and recurrent HSV infections. Discuss differential diagnosis of herpes simplex. Outline the management plan.	**Dermatology/ Microbiology**	**Viral skin infections**

Derm2-025	Discuss types of naevi with reference to clinical and morphological features. Differentiate benign nevi from malignant melanoma on the basis of clinical signs.	Pathology/ Dermatology	Naevi

Derm2-026	Describe the signs and symptoms of malignant melanoma. Enlist the risk factors. Outline the diagnostic investigations and management. Explain the importance of early detection for survival outcomes.	Pathology/ Dermatology	Cutaneous tumors
	Describe the clinical features of basal cell carcinoma. Discuss diagnostic methods and outline the management.	Pathology/ Dermatology	
	Enlist the predisposing factors for squamous cell carcinoma. Describe the clinical presentation. Identify diagnostic approaches with treatment options.	Pathology/ Dermatology	


UNIVERSITY OF HEALTH SCIENCES LAHORE
UHS
Table of Specifications (ToS)

Block-X						
Modules	**Theory**		**Practical**			
	MCQs *(1 mark each)*	**Marks**	**OSCE** *(8 marks each)*	**OSVE** *(10 marks each)*	**Short Case** *(20 marks each)*	**Marks**
Community Medicine-II & Family health-II	25 + 15	**40**	2	1	-	**26**
GIT & Nutrition-II	35 + 5	**40**	2	1	-	**26**
Eye-I	30	**30**	3	-	1	**44**
ENT-I	30	**30**	3	-	1	**44**
Total	140 MCQs	**140 Marks**	10 stations x 8= 80 Marks	2 stations x 10= 20 Marks	2 short cases x 20=40 Marks	**140 Marks**
Grand Total=280 Marks						

Block-XI						
Modules	**Theory**		**Practical**			
	MCQs *(1 mark each)*	**Marks**	**OSCE** *(8 marks each)*	**OSVE** *(10 marks each)*	**Short Case** *(20 marks each)*	**Marks**
Neuroscience-II	38	**38**	3	1	-	**34**
Psychiatry & Behavioural Sciences	20+07	**27**	2	-	-	**16**
Renal-II	25	**25**	1	1	-	**18**
Eye-II	25	**25**	2	-	1	**36**
ENT-II	25	**25**	2	-	1	**36**
Total	140 MCQs	**140 Marks**	10 stations x 8= 80 Marks	2 stations x 10= 20 Marks	2 short cases x 20=40 Marks	**140 Marks**
Grand Total=280 Marks						

Block-XII						
Modules	**Theory**		**Practical**			
	MCQs *(1 mark each)*	**Marks**	**OSCE** *(8 marks each)*	**OSVE** *(10 marks each)*	**Short Case** *(20 marks each)*	**Marks**
Endocrine & Reproduction-II	47	**47**	2	2	-	**36**
Dermatology	23	**23**	2	-	-	**16**
Eye-III	35	**35**	3	-	1	**44**
ENT-III	35	**35**	3	-	1	**44**
Total	140 MCQs	**140 Marks**	10 stations x 8= 80 Marks	2 stations x 10= 20 Marks	2 short cases x 20=40 Marks	**140 Marks**
Grand Total=280 Marks						

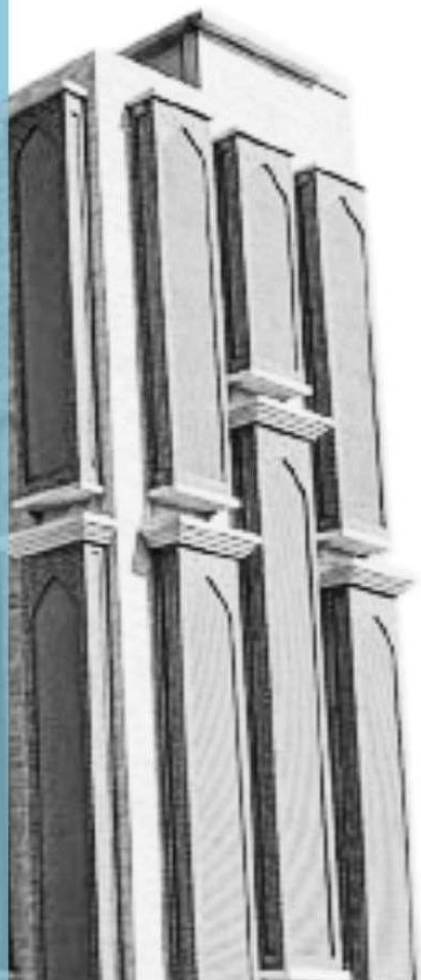
Internal Assessment Theory

Sr.	Scoring Pariees	Marks out 20%	Marks Distribution
1.	**Attendance in Lectures**	85-90=1%, >90%=2%	85-90%= 01 mark >90%=02 marks
		Remedial classes - re-sit exam allowed only after case endorsed and submitted by the college Principal and approval given by the Competent Authority. However, no marks given	
		Remedial classes - re-sit exam allowed only in genuine cases after approval from Competent Authority. However, no marks given	
2.	Block Exam	15%	22
3.	Continuous Internal Assessment/Class Quiz/Class participation/ Processional Behavioral Ethical practices/ Leadership traits/ Module Exam Discipline/Factuality	03%	06

Internal Assessment Practical & Behavioral

Sr.	Scoring Pariees	Marks out 20%	Marks Distribution
1.	Attendance in Rotations	85-90=1%, >90%=2%	85-90%= 01 mark >90%=02 marks
		Remedial ciasses - re-sit exam allowed only after case endorsed and submitted by the college Principal and approval given by the Competent Authority. However, no marks given	
		Remedial classes - re-sit exam allowed only in genuine cases after approval from Competent Authority. However, no marks given	
2.	Block Exam (OSPE/OSCEJOSVE)	15%	26
3.	CFRC Log Book/ PERLs Portfoio	04%	07

SKILL ACQUISITION WORKSHOPS



Workshop Schedule for MBBS students

The Following **Skill Acquisition Workshops** are included in the "Modular Integrated Curriculum 2K23 Final Version":

Sr. No.	Course Name	Academic Year	Duration	Eligibility
1.	Basic Life Support	1st Year / 2nd Year	2 days	Eligibility requirement for appearing in the 4th Professional Examination
2.	Advanced Life Support	3rd Year / 4th Year	1 day	Eligibility requirement for appearing in the Surgical Clerkship examination
3.	Cardiac First Response	3rd Year / 4th Year	1 day	Eligibility requirement for appearing in the Medicine Clerkship examination
4.	Trauma first responders	3rd Year / 4th Year	1 day	Eligibility requirement for appearing in the Surgical Clerkship examination
5.	Emergency Neonatal Resuscitation	3rd Year / 4th Year	1 day	Eligibility requirement for appearing in the Pediatrics Clerkship examination
6.	Emergency Obstetrics Resuscitation	3rd Year / 4th Year	1 day	Eligibility requirement for appearing in the Gynecology / Obstetrics Clerkship Examinations