



CURRICULUM DOCUMENT

(Fourth Year MBBS)

STANDARD OPERATING PROCEDURES



LAHORE MEDICAL AND DENTAL COLLEGE
DEPARTMENT OF MEDICAL EDUCATION

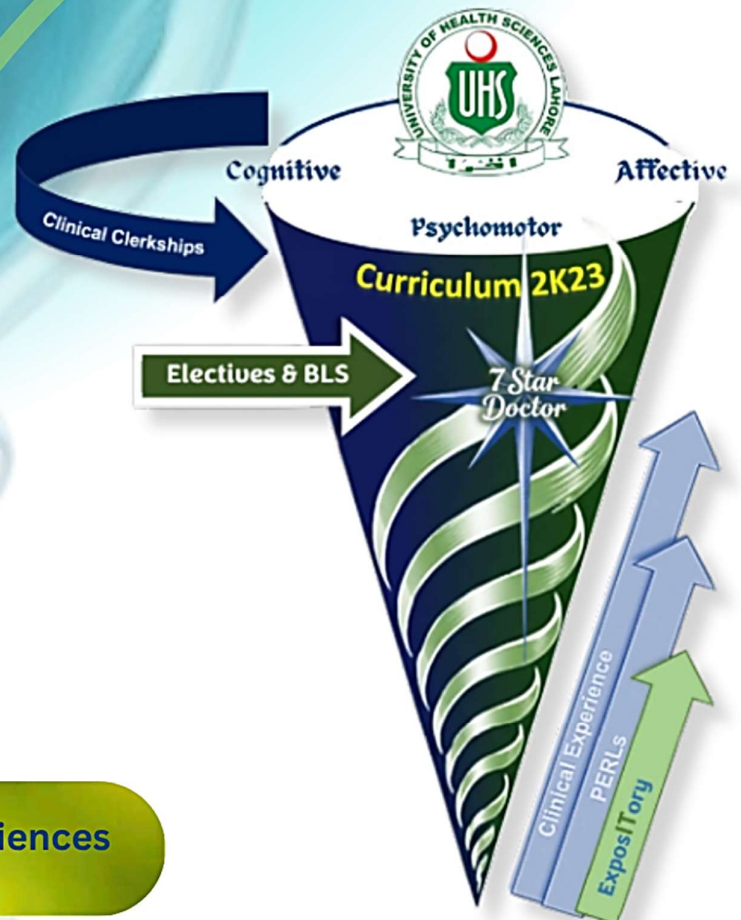
**MBBS
YEAR
04**



Volume-04



**Modular Integrated
Curriculum 2K23**
Final Version



**University of Health Sciences
Lahore**





Modular Integrated Curriculum 2K23

Volume-04 / Year-04

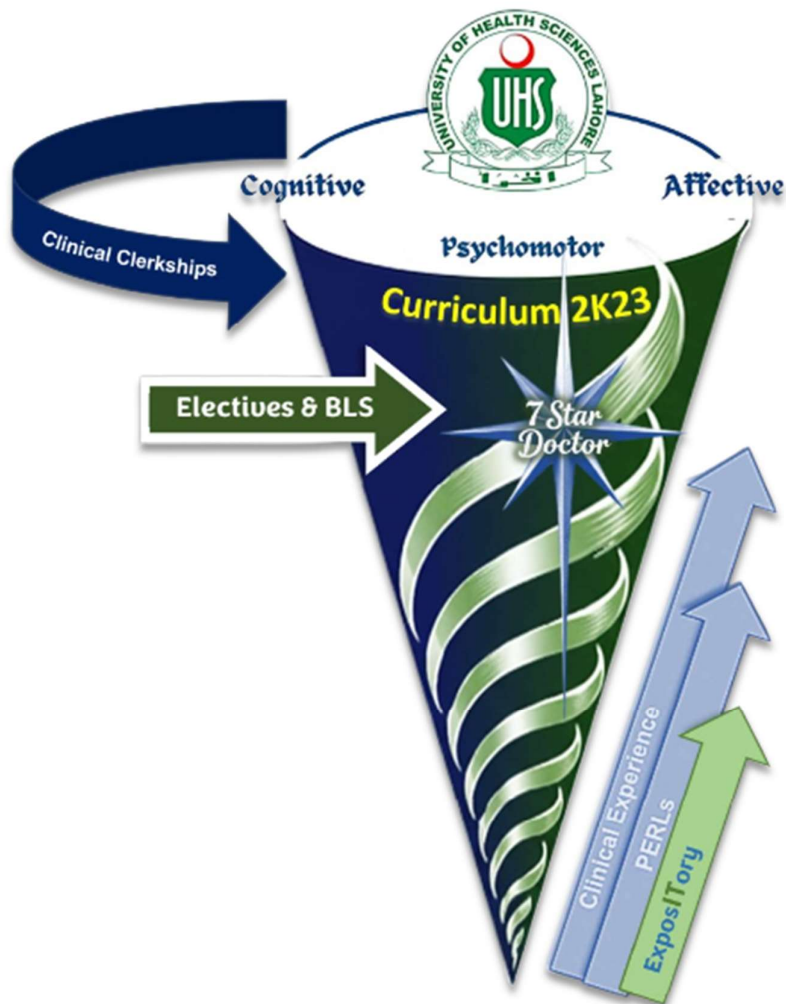


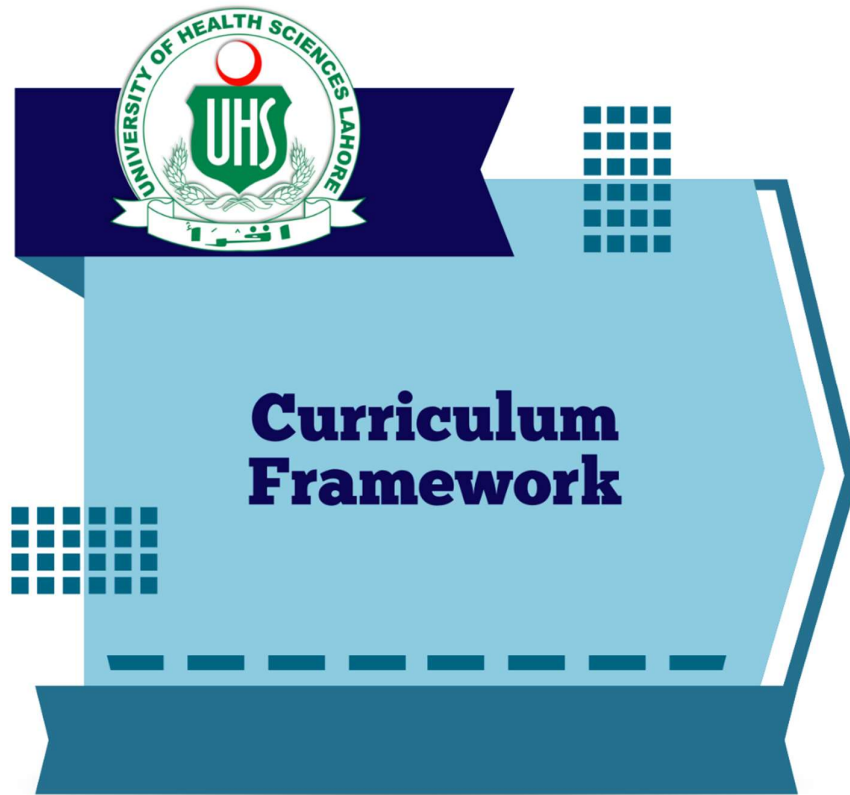
Table of Contents

Section	Content	Page No.
1	Curriculum Framework	6
2	Year-4 Modules <u>Block-10</u> 24) Community Medicine & Family Health-II 25) GIT & Nutrition-II 26) Eye & ENT-I <u>Block-11</u> 27) Neurosciences-II 28) Psychiatry & Behavioral Sciences 29) Renal-II 30) Eye & ENT-II <u>Block-12</u> 31) Endocrinology & Reproduction-II 32) Dermatology 33) Eye & ENT-III	9 11 12 22 40 55 56 67 81 95 110 111 128 139
3	Table of Specifications	158
4	C-FRC-IV	163
5	PERLs-IV Student Portfolio	200 209
6	Expository-IV	251
7	Electives	258
8	Skill Acquisition Workshops	278

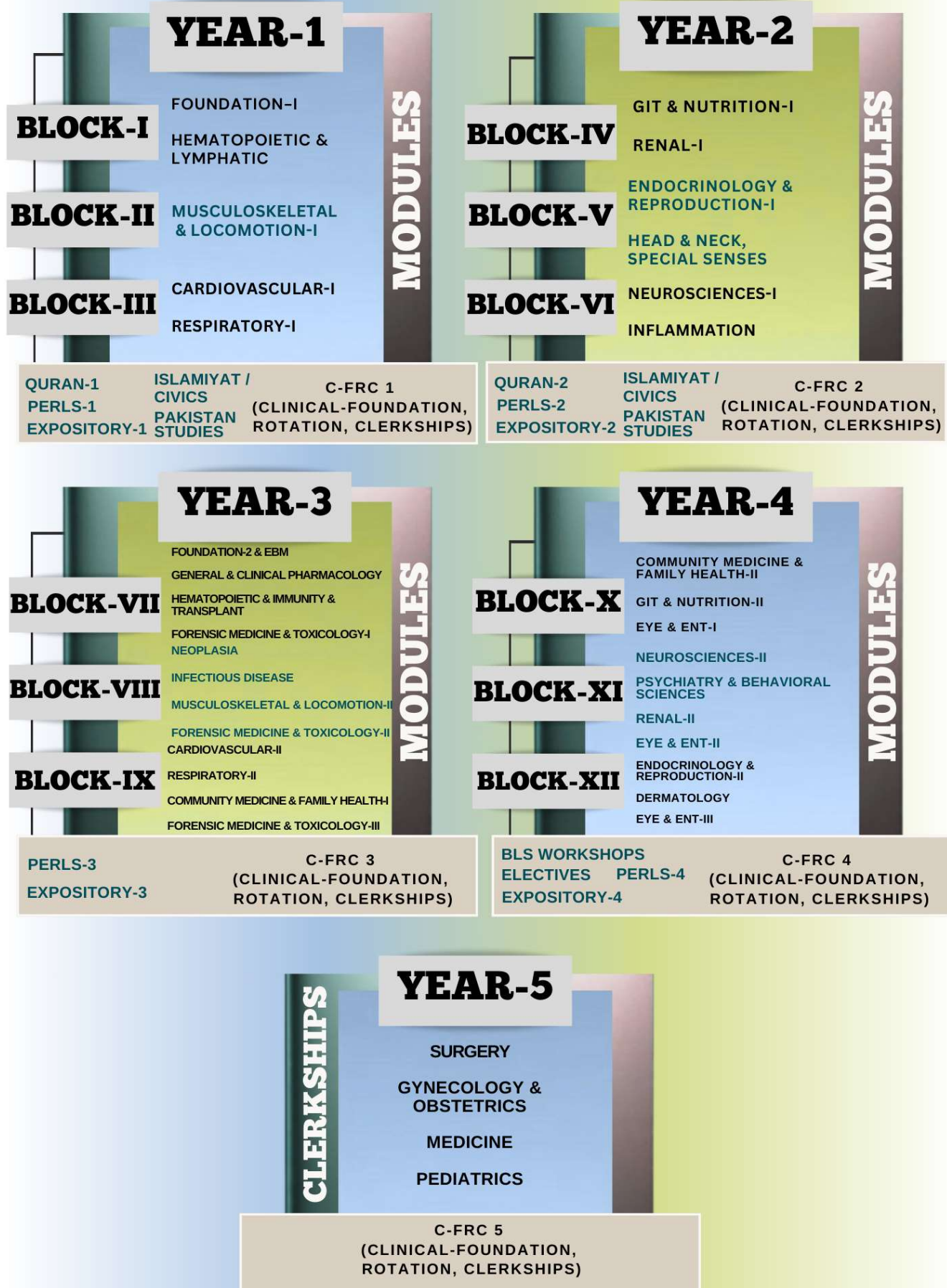
A graphic featuring a blue semi-circle with a black outline, containing the number '01' in a large, outlined font. Below the semi-circle is a gray rectangular box containing the word 'Section' in a white, cursive script font.

01

Section



Modular Integrated Curriculum 2K23 Framework



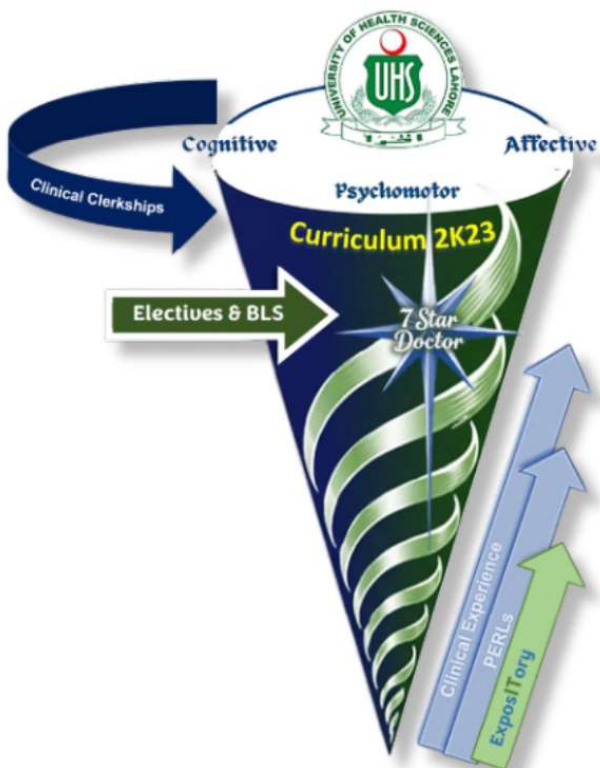
A graphic for 'Section 02'. It features a blue semi-circle with a black outline and a drop shadow, containing the number '02' in a large, outlined font. Below the semi-circle is a solid grey rectangular box containing the word 'Section' in a white, cursive script font.

02

Section

Modular Integrated Curriculum 2K23 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

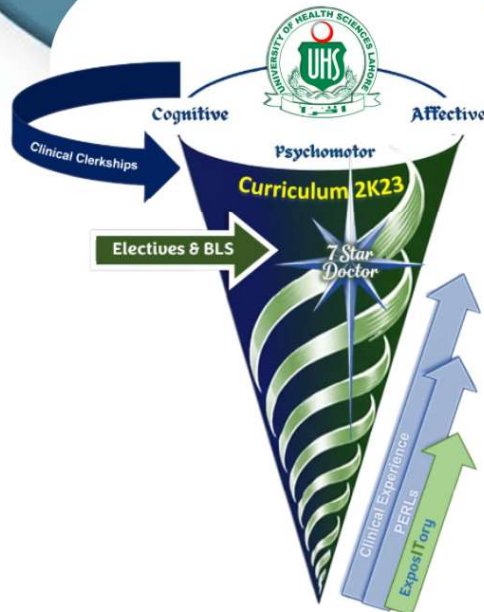
**Each institute will prepare a comprehensive program planner ensuring that the following activities are scheduled appropriately for the whole academic year:

- 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



Modular Integrated Curriculum 2K23 MBBS Year-04

BLOCK-10



**Modular Integrated
Curriculum 2K23**
Volume-04

MODULE

24

COMMUNITY MEDICINE
& FAMILY HEALTH-II



MODULE RATIONALE

Community Medicine & Family Health-II equips future healthcare professionals with the knowledge, skills, and attitudes necessary to implement preventive strategies, promote health, and reduce the burden of disease through a primary healthcare approach aimed at achieving universal health coverage. It enables students to understand how social, economic, and environmental factors influence health outcomes and prepares them to address health disparities effectively. The module also focuses on developing competencies to respond to public health challenges such as pandemics, natural disasters, and environmental hazards through community-based strategies. Additionally, it emphasizes the importance of providing family health services at the community level.

MODULE OUTCOMES

- Apply biostatistical and epidemiological methods to collect, analyze, interpret, and present health data for evidence-based decision-making and research.
- Analyze demographic principles, transitions, and indicators to evaluate their implications for population health and healthcare planning in the context of Pakistan and globally.
- Evaluate occupational and environmental health risks, identify related diseases and hazards, and propose preventive, protective, and management strategies within legal and organizational frameworks.
- Develop and apply strategies for disaster preparedness, response, and recovery, including triage, relief management, and community mobilization.
- Critically appraise health systems, planning processes, and policies, and relate them to sustainable development goals and the concept of “Health for All.”

SUBJECTS INTEGRATED IN THE MODULE

1. Family Medicine
2. Community medicine



THEORY			
COMMUNITY MEDICINE-II			
CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC
CMFH2-CM-001	Explain the basic concepts and uses of biostatistics.	Community Medicine	Biostatistics and Health Management Information System
	Classify data according to its types.		
	Define and apply rates, ratios, and proportions in health contexts.		
	Describe the process of collection and registration of vital events in Pakistan.		
	Apply methods of data presentation, including tables, graphs, and diagrams.		
	Calculate measures of central tendency (mean, median, mode).		
	Calculate measures of dispersion (range, standard deviation, standard error).		
	Interpret the normal curve and its applications in health sciences.		
	Analyze and apply sampling techniques in health research.		
	Apply and interpret health data using statistical tests such as t-test and chi-square. Apply and interpret health data using correlation.		
CMFH2-CM-002	Explain demographic principles and demographic processes.	Community Medicine	Demography and Population Dynamics
	Describe population pyramids and differentiate between those of developing and developed countries.		
	Interpret and apply population pyramids to analyze population structures.		

	Identify and analyze determinants of fertility and mortality. Calculate and interpret indicators of fertility and mortality.		
	Describe the stages of demographic transition. Describe, calculate, and interpret the dependency ratio, growth rates, and population doubling time.		
	Explain demographic concepts such as demographic trap, demographic window, demographic bonus, and demographic dividend.		
	Define and explain the methodology and types of censuses, and evaluate their importance for health planning.		
	Discuss the implications of high population growth, social mobilization, and urbanization, and apply these to the context of Pakistan.		
CMFH2-CM-003	Explain the concepts of occupational health, occupational medicine, and occupational hygiene. Identify and classify physical, chemical, biological, mechanical, and psychosocial workplace hazards. Apply general principles of occupational disease prevention in workplace settings. Define and discuss ergonomics and its importance in occupational health. Interpret causes and recognize signs and symptoms of occupational lung diseases, including pneumoconiosis, silicosis, anthracosis, byssinosis, bagassosis, asbestosis, and farmer's lung. Analyze the causes, signs, and diagnosis of lead poisoning, and propose preventive and management strategies.	Community Medicine	Occupational Health

	Describe accidents in the industry, sickness absenteeism, and other health problems due to industrialization. Recommend medical, engineering and legislative measures for worker protection.		
CMFH2- CM-004	Define and classify disasters.	Community Medicine	Disaster Management and accidents
	Describe and explain disaster cycle and its phases.		
	Explain the epidemiology and preventive strategies of communicable diseases during disaster. Describe impact of man-made disasters.		
	Explain and apply the principles of triage in disaster situations.		
CMFH2- CM-005	Define health planning and apply its relevance in healthcare delivery.	Community Medicine	Health Planning and Management
	Describe the steps of the health planning cycle.		
	Discuss key management methods and techniques used in health planning.		

THEORY			
FAMILY HEALTH-II			
CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC
CMFH2-FM-001	Define and classify headache.	Family Medicine/ Neurology/ Medicine	Headache
	Diagnose the following based on signs and symptoms: i. Migraine (with/without aura) ii. Tension-type headache iii. Cluster headache Identify red flags.		
	List the common causes of secondary headache including intracranial and systemic.		
	Outline the treatment of migraine, tension-type, and cluster headaches.		
	Prescribe prophylactic treatment for recurrent primary headaches. Plan the management of secondary headaches according to cause. Advise non-pharmacological measures.		
CMFH2-FM-002	Classify fever based on duration and pattern. Explain their clinical relevance in primary care.	Family Medicine/ Medicine	Fever
	Outline the common infectious and non-infectious causes of fever, with emphasis on locally prevalent conditions.		
	Enlist baseline investigations in the evaluation of fever in primary care.		
	Outline the symptomatic management and disease-specific treatment at the primary care level.		
	Counsel patients and caregivers on home management of fever. Identify red flag features in febrile patients that require urgent referral.		

CMFH2-FM-003	List the common causes of an unwell child presentation.	Family Medicine/ Paediatrics	Unwell child
	Outline the initial assessment of a sick child. Identify the red flag signs of serious illness in children.		
	Enlist the baseline investigations.		
	Plan the management of unwell child including i. Immediate stabilization ii. Symptomatic management iii. Specific management according to cause iv. Indications for referral and hospitalization		
	Discuss preventive aspects including: i. Importance of immunization ii. Nutrition iii. Early recognition of illness by caregivers		
CMFH2-FM-004	Enlist the common mental health disorders relevant to general practice.	Family Medicine/ Psychiatry	Mental Health
	Outline the key signs and symptoms important for early detection of psychiatric conditions.		
	Discuss the principles of initial management and referral pathways for common psychiatric disorders and emergencies.		
	Explain the role of general practitioners in promoting mental health and reducing stigma.		
CMFH2-FM-005	Enlist common causes of weakness and weight loss.	Family Medicine/Medicine	Generalized weakness and weight loss
	Outline baseline investigations to guide initial evaluation at the primary care level.		
	Evaluate patients for red flag features that warrant urgent referral.		
	Formulate an initial management plan, including symptomatic care, preventive counseling, and referral.		

	Discuss the role of family physicians in promoting early recognition, lifestyle modification, and community awareness to prevent late presentations.		
CMFH2-FM-006	Identify common urogenital symptoms in males and females.	Family Medicine/ Nephrology/ Urology	Urogenital Symptoms (Male and female)
	Enlist the common causes.		
	Outline baseline investigations to reach diagnosis.		
	Evaluate warning signs that require urgent referral.		
	Discuss the general principles of management of common urogenital conditions in primary care, including symptomatic treatment, infection control, and referral.		
CMFH2-FM-007	Diagnose common skin fungal infections based on clinical presentation and outline their primary care management.	Family Medicine/ Dermatology	Skin Conditions (common OPD cases)
	Identify common ectoparasitic infestations (scabies, pediculosis), manage appropriately, and counsel regarding treatment of contacts and preventive measures.		
	Diagnose common bacterial skin infections (cellulitis, folliculitis).		
	Identify red flags for urgent referral.		
	Outline initial primary care management.		
	Diagnose and manage common viral skin infections (warts, herpes simplex) at primary care level, and identify cases requiring referral.		
CMFH2-FM-008	Diagnose common inflammatory and allergic skin conditions (eczema, atopic dermatitis, acne vulgaris) based on signs and symptoms.		
	Outline primary care management including lifestyle advice, topical therapy, and patient education.		
CMFH2-FM-008	Identify common geriatric problems including pressure ulcers, incontinence, falls, functional		

	decline, and delirium, and evaluate their impact on the quality of life of older adults.	Family Medicine/ Medicine	Common Geriatric Issues
	Discuss the components of a basic geriatric assessment, including physical, functional, cognitive, and social aspects.		
	Identify red flag symptoms in elderly patients (acute confusion, unexplained weight loss, recurrent falls, elder abuse/neglect) that require urgent evaluation or referral.		
	Counsel elderly patients and caregivers regarding chronic disease management, adherence, rehabilitation, and end-of-life care options.		

**Modular Integrated
Curriculum 2K23**
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
GIT2-GE-012	Define dysphagia.	Gastroenterology/Medicine	Dysphagia

	Explain the pathophysiological mechanisms leading to dysphagia. Outline the etiology of dysphagia Develop a stepwise diagnostic and management plan for a patient presenting with dysphagia.		
GIT2-GE-013	Diagnose gastroesophageal reflux disease (GERD) on the basis of characteristic symptoms and clinical presentation. Enlist the etiology and pathophysiology of GERD. Outline differential diagnosis of GERD.	Gastroenterology/Medicine	Gastroesophageal Reflux Disease (GERD)
GIT2-GE-014	Diagnose achalasia on the basis of characteristic symptoms and clinical presentation. Describe the etiology and pathophysiology of achalasia. Outline the diagnostic investigations for achalasia. Interpret the radiological and endoscopic findings in achalasia. Discuss the treatment options for achalasia.	Gastroenterology/Medicine	Achalasia
GIT2-GE-015	Diagnose esophageal candidiasis based on its specific signs and symptoms. Enumerate the risk factors for esophageal candidiasis. Outline the diagnostic investigations and discuss the treatment options for esophageal candidiasis.	Gastroenterology/Medicine	Esophageal candidiasis
GIT2-GE-016	Describe the risk factors for esophageal cancer. Diagnose esophageal cancer from its symptoms and clinical presentation. Outline the diagnostic investigations for esophageal cancer. Explain the staging of esophageal cancer. Discuss the treatment options for esophageal cancer.	Gastroenterology/Medicine	Esophageal cancer
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.	Pathology	Chronic gastritis
	Describe the differentiating features of H. Pylori and autoimmune 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
GIT2-GE-023	Explain the causes and pathophysiology of vomiting, including central and peripheral pathways Formulate a differential diagnosis for patients presenting with vomiting. Identify red flag features requiring urgent evaluation. Enlist investigations. Outline management strategies.	Gastroenterology/ Medicine	Vomiting
GIT2-GE-024	Enumerate the causes of hematemesis. Identify risk factors for upper gastrointestinal bleeding. Describe the clinical presentations. Outline the investigations and procedures used to establish a diagnosis. Outline the emergency management of hematemesis.	Gastroenterology/ Medicine	Hematemesis

GIT2-GE-025	Enumerate the causes of abdominal pain. Develop a differential diagnosis for abdominal pain. Outline the investigations required to establish a diagnosis. Describe the treatment options for abdominal pain.	Gastroenterology/ Medicine	Abdominal pain
GIT2-GE-026	Diagnose acid peptic disease based on symptoms, clinical presentation, and risk factors. Explain the role of <i>Helicobacter pylori</i> in the pathogenesis of acid peptic disease. Plan the diagnostic workup and management options.	Gastroenterology/ Medicine	Acid peptic disease
GIT2-GE-027	Classify the types of gastric cancer. Enlist the risk factors for gastric cancer. Describe clinical presentation. Plan the diagnostic workup for gastric cancer. Explain the staging of gastric carcinoma. Discuss the treatment options for gastric cancer.	Gastroenterology/ Medicine	Gastric carcinoma
GIT2-S-028	Describe the causes of duodenal obstruction. Diagnose duodenal tumours based on clinical presentation. Outline the investigations to confirm diagnosis.	Surgery	Duodenal obstruction
GIT2-S-029	Describe the management of obesity as a surgical disease. Explain the rationale for bariatric and metabolic surgery. Outline the eligibility criteria and summarize NICE guidelines for bariatric surgery. Describe the multidisciplinary assessment and multimodal treatment required before surgery. Enumerate the types of bariatric surgical procedures. Identify and manage perioperative complications. Describe the follow-up plan, including nutritional supplementation and biochemical monitoring.	Surgery	Bariatric and metabolic surgery
GIT2-Ph-030	Classify Antacids	Pharmacology	Antacids

	Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications. Describe the milk-alkali syndrome. Explain the acid-rebound phenomenon caused by antacids. Differentiate between the different antacids.		
GIT2-Ph-031	Classify H2 receptor blockers. Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications.	Pharmacology	H2 receptor blockers
GIT2-Ph-032	Classify Proton Pump Inhibitors (PPI) Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications. Tabulate differences between PPIs and H2 receptor blockers.	Pharmacology	Proton Pump Inhibitors (PPI)
GIT2-Ph-033	Enumerate Mucosal Protective Agents and the drugs used for eradication of H. Pylori. Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications. Describe triple regimen, quadruple regimen & sequential therapy for eradication of H. Pylori.	Pharmacology	Mucosal Protective Agents
GIT2-Ph-034	Classify anti-emetics. Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications. Tabulate differences between metoclopramide and Domperidone.	Pharmacology	Anti-emetics

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.	Pathology	Neoplastic polyps and colorectal carcinoma

	Enumerate immunohistochemical markers and TNM/AJCC staging.		
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
GIT2-GE-041	Enlist causes of acute and chronic diarrhea. Develop a differential diagnosis of diarrhea. Explain the pathophysiology of acute and chronic diarrhea.	Gastroenterology/Medicine	Diarrhea (acute and chronic)
GIT2-GE-042	Identify the common causes of acute gastroenteritis. Diagnose on the basis of characteristic symptoms and clinical presentation. Outline diagnostic investigations with management plan.	Gastroenterology/Medicine	Acute gastroenteritis
GIT2-GE-043	Classify malabsorption syndromes. Identify the symptoms and signs of malabsorption. Enlist investigations to establish the diagnosis. Describe treatment strategies for different malabsorption syndromes.	Gastroenterology/Medicine	Malabsorption syndromes
GIT2-GE-044	Classify inflammatory bowel disease. Identify the risk factors, clinical presentations, and associations of ulcerative colitis and Crohn's disease. List the investigations and treatment plans with follow-up for monitoring and long-term management.	Gastroenterology/Medicine	Inflammatory bowel disease
GIT2-GE-045	Define Irritable bowel syndrome (IBS). Describe the etiology and clinical presentation of IBS. Formulate a differential diagnosis for patients with suspected IBS. Outline investigations and treatment strategies.	Gastroenterology/Medicine	Irritable bowel syndrome (IBS)
GIT2-GE-046	Classify the types of small and large intestinal cancers. Identify the risk factors and clinical presentation.	Gastroenterology/Medicine	Intestinal cancers

	Outline the staging systems used for intestinal cancers. Outline investigations and treatment options.		
GIT2-GE-047	Identify the causes of constipation. Formulate a differential diagnosis for patients presenting with constipation. Enlist investigations to establish the diagnosis. Outline treatment strategies for constipation.	Gastroenterology/Medicine	Constipation
GIT2-GE-048	Identify clinical presentation. Outline investigations and treatment strategies for abdominal tuberculosis.	Gastroenterology/Medicine	Abdominal tuberculosis
GIT2-Ph-049	Classify prokinetic drugs. Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications.	Pharmacology	Prokinetic drugs
GIT2-Ph-050	Classify Laxative, Purgative, Cathartic stool, Softeners & Stimulant Purgatives. Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications. Explain the role of lactulose in the treatment of Hepatic Encephalopathy.	Pharmacology	Laxative and Purgative
GIT2-PS-051	List causes of congenital (atresia's, neonatal volvulus,, malrotation,) and acquired intestinal obstruction. Define intussusception. Classify types of intussusception and pathophysiology. Identify common age group and etiology. Enumerate the classical triad of symptoms. Enlist diagnostic methods. Discuss importance of early diagnosis and complications of non/delayed treatment. Outline treatment plan.	Pediatric Surgery	Intussusception and causes of intestinal obstruction in children
GIT2-PS-051a	Define acute appendicitis.	Pediatric Surgery	Appendicitis in children

	Identify clinical features and complications of delayed treatment. Outline the diagnostic investigations and initial management.		
GIT2-PS-051b	Define inguinal hernia and hydrocele. Classify them in children. Describe the pathophysiology of communicating and non-communicating hydrocele. Enumerate clinical features of hernia and hydrocele. Differentiate between two. Outline principles of management with referral for treatment to Pediatric Surgical Setting.	Pediatric Surgery	Hernia (inguinal & umbilical) and Hydrocoele
GIT2-PS-051c	Define Phimosis and Paraphimosis. Differentiate physiological and pathological phimosis. Enumerate complications. Outline management options.	Pediatric Surgery	Phimosis and paraphimosis
GIT2-PS-051d	Define vesical and cloacal exstrophy. Describe embryological basis. Enumerate clinical features. Outline management principles.		Vesical and Cloacal Exstrophy
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.	Pathology	Viral hepatitis

	Identify the clinical and pathological features of acute liver failure.		
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
GIT2-GE-059	Define jaundice and describe its major causes.	Gastroenterology/Medicine	Jaundice

	Differentiate between pre-hepatic, hepatic, and post-hepatic jaundice. Outline investigations to reach diagnosis.		
GIT2-GE-060	Describe etiology and clinical presentation. Enlist investigations to reach diagnosis. Outline management plan. Discuss prognosis and potential complications of hepatitis.	Gastroenterology/Medicine	Acute and chronic hepatitis
GIT2-GE-061	Describe non-alcoholic fatty liver disease (NAFLD) and NASH. Identify the risk factors and clinical features of NAFLD. Outline investigations and management plan for patients with NAFLD.	Gastroenterology/Medicine	Management of NAFLD & NASH
GIT2-GE-062	Identify risk factors and describe the clinical course, progression, and outcomes of cirrhosis. Differentiate between compensated and decompensated liver disease. Outline investigations and management strategies. Enlist potential complications.	Gastroenterology/Medicine	Chronic liver disease
GIT2-GE-063	Describe autoimmune hepatitis, Wilson's disease, hemochromatosis, and alcoholic liver disease with reference to etiology, risk factors, and clinical features. Enlist investigations and procedures to establish a diagnosis. Outline management strategies for these disorders.	Gastroenterology/Medicine	Metabolic and Genetic Disorders of Liver
GIT2-GE-064	Describe the types, risk factors, and clinical features of hepatocellular carcinoma (HCC). Enlist investigations for diagnosing and staging HCC. Outline the stages of HCC and discuss available treatment options.	Gastroenterology/Medicine	Hepatocellular carcinoma
GIT2-S-065	Describe the surgical anatomy and basic function of the gallbladder and bile ducts. Explain in simple terms the formation of gallstones and outline their surgical management.	Surgery	Cholecystectomy

	Identify common disorders of the biliary tree.		
GIT2-S-066	Describe the surgical anatomy of the pancreas and important adjacent structures to preserve during surgery. Diagnose acute pancreatitis based on symptoms, signs, and risk factors. Outline the role of surgery in the management of pancreatitis.	Surgery	Pancreatitis and its management
GIT2-PS-066	Define primary peritonitis and differentiate from secondary peritonitis. List predisposing factors and common causative organisms. Describe clinical features. Outline investigations. State principles of management and early referral.	Pediatric Surgery	Primary peritonitis
SPLEEN			
GIT2-GE-067	Enumerate the causes of splenomegaly. Describe the morphology of splenic congestion and splenic rupture.	Pathology	Morphology of splenic congestion
GIT2-PS-068	Enlist the indications for splenectomy. Describe potential complications of splenectomy. Describe the potential advantages of laparoscopic splenectomy. Describe the benefits of splenic conservation. Describe the importance of prophylaxis against infection following splenectomy.	Pediatric Surgery/ General Surgery	Splenectomy
HEALTH & NUTRITION			
GIT2-CM-069	Describe nutrition. Classify food and nutrients. Define balanced diet. Discuss prudent diet and its components. Describe daily requirements of nutrients.	Community Medicine	Fundamentals of Nutrition and Balanced Diet

	Discuss measures to ensure healthy dietary intake.		
GIT2-CM-070	Describe the role of macronutrients and micronutrients at different stages of life. Explain the importance of dietary fibers and their role in health. Discuss diseases related to deficiencies or excess of macronutrients, vitamins, and minerals.	Community Medicine	Macronutrients and Micronutrients
GIT2-CM-071	Describe the concept of malnutrition. Classify the types of malnutrition. Identify the causes of malnutrition. Discuss the impact of malnutrition at different stages of life. Describe strategies for control and prevention of malnutrition. Enlist specific preventive measures for malnutrition.	Community Medicine	Malnutrition
GIT2-CM-072	Discuss the nutritional requirements of children under 5 years of age. Discuss the nutritional requirements during pregnancy. Discuss the nutritional requirements during adolescence. Explain the consequences of poor nutrition in adolescence on growth, development, and long-term health.	Community Medicine	Nutritional requirements
GIT2-CM-073	Describe nutritional diseases and related public health programs. Discuss the role of food fortification in improving nutrition. Describe the concept and application of nutritional surveillance. Describe methods of nutritional assessment.	Community Medicine	Public Health Nutrition Programs
GIT2-CM-074	Discuss the concept of food adulteration, food additives, and their health implications. Classify common food-borne diseases.	Community Medicine	Food Hygiene and Safety

	Describe strategies to prevent food-borne diseases.		
GIT2-S-075	Explain the importance of assessing perioperative nutritional status and its implications. Describe the causes and complications of malnutrition in surgical patients. Discuss fluid balance management in the perioperative setting. Outline the nutritional requirements of surgical patients and options for nutritional support, including indications for enteral versus parenteral feeding. Explain the nutritional consequences of intestinal resection.	Surgery	Perioperative Nutritional Management

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

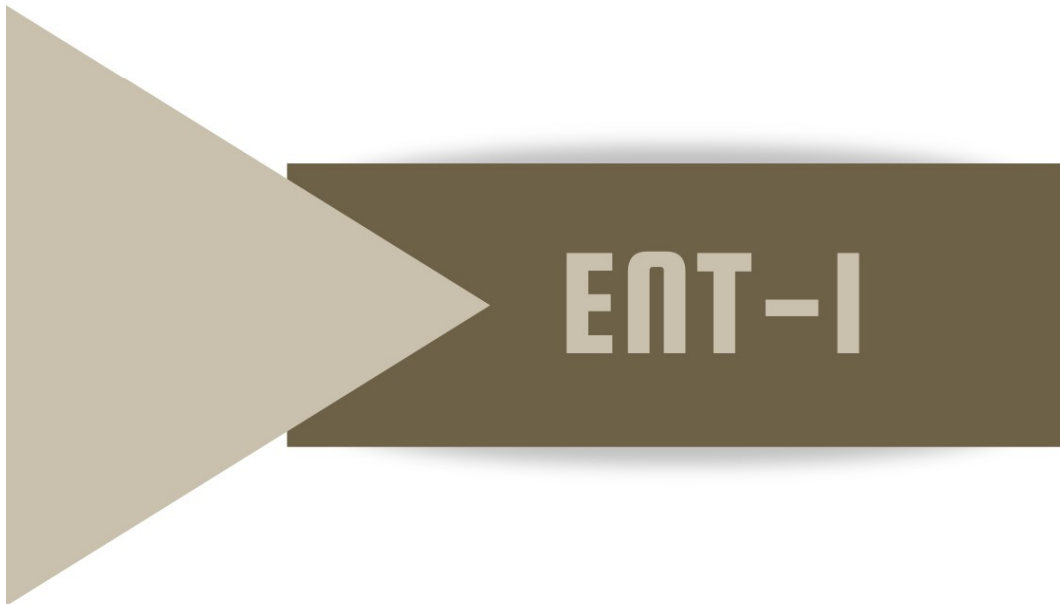
PHARMACOLOGY

CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC
GIT2-Ph-078	Write down the prescription for i. Acid Peptic Disease ii. Cancer chemotherapy induced vomiting iii. Motion sickness iv. Irritable bowel disease v. Inflammatory bowel disease vi. Diarrhea	Pharmacology	Gastrointestinal tract

MODULE NO.26 EYE & ENT-I



**Modular Integrated
Curriculum 2K23**
Volume-04



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

1. Anatomy
2. Physiology
3. Pathology
4. Pharmacology
5. Oncology
6. Forensic Medicine

Syllabus

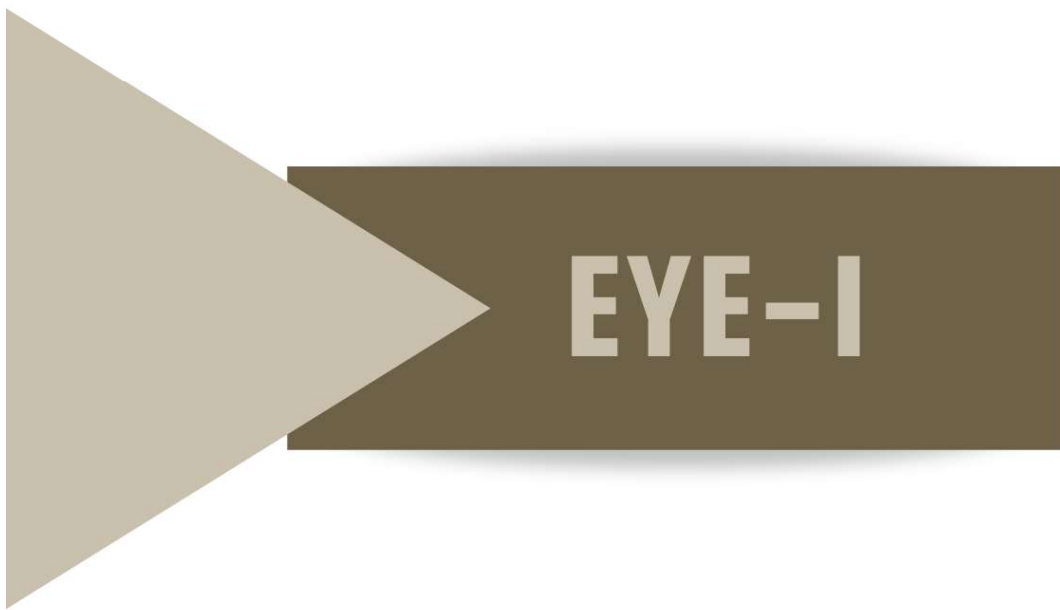


THEORY			
ENT-I (EAR)			
CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC
ENT1-Ear-001	Classify the types of hearing loss. Explain the pathophysiological mechanisms underlying hearing loss. Differentiate between conductive and sensorineural hearing loss. Describe the indications, benefits, and limitations of hearing implants.	ENT	Hearing Loss
ENT1-Ear-002	Diagnose Perichondritis of pinna on basis of clinical features and plan its management. Define and classify Otitis externa. Describe the clinical presentation. Plan management. Describe the etiology, clinical presentation, and treatment of Otomycosis. Differentiate Otomycosis from other causes of otitis externa. Describe the composition of ear wax. Diagnose cerumen impaction based on clinical presentation. Outline the treatment options and precautions. Enlist complications associated with cerumen removal. Diagnose foreign bodies impaction in the ear based on clinical presentation. Enlist the complications. Outline the methods for removal of foreign bodies in the ear. Describe the etiology, clinical presentation, and treatment of auricular hematoma.		Diseases of the External Ear

	Identify frostbite of the ear based on clinical presentation with its management plan. Describe the etiology, clinical presentation, and treatment of lacerations and avulsion injuries of the pinna.		
ENT1-Ear-003	Enlist the etiological and risk factors of Acute Otitis Media. Diagnose acute otitis media based on clinical presentation. Outline the treatment plan. Enlist the complications.	ENT	Diseases of the Middle Ear
	Describe the etiology and clinical presentation of Chronic Otitis Media. Outline the management strategies. Enlist the potential complications. Outline the management plan of facial paralysis in otitis media.		
	Explain the pathophysiology and risk factors of Otosclerosis. Formulate differential diagnosis. Outline the management plan.		
ENT1-Ear-004	Enlist the causes of pre-lingual Sensorineural Hearing Loss. Explain the clinical presentation and diagnostic approach. Plan medical, rehabilitative, and surgical management.	ENT	Diseases of Inner Ear
	Explain the pathophysiology and clinical features of Benign Paroxysmal Positional Vertigo (BPPV). Outline management, including repositioning maneuvers and patient counseling.		
	Describe the etiology and clinical presentation of vestibular neuronitis. Differentiate vestibular neuronitis from central causes of vertigo.		

	Discuss management plan.		
	Describe the etiology and predisposing factors of Meniere's disease. Describe the characteristic signs and symptoms. Outline the medical and surgical management options. Discuss the long-term impact of Meniere's disease on hearing and quality of life.		
	Describe the etiology and risk factors of Presbycusis. Diagnose based on clinical presentation. Outline management plan including preventive measures.		
	Describe the etiology and risk factors of noise-induced hearing loss (NIHL). Identify the clinical presentation and audiometric findings of NIHL. Outline management plan including prevention.		
ENT1-Ear-005	Enlist the common ototoxic drugs. Describe the mechanism of ototoxicity. Identify clinical presentation of ototoxic hearing loss. Outline strategies for monitoring, prevention, and management of ototoxicity.	ENT/ Pharmacology	Ototoxic hearing loss
ENT1-Ear-006	Identify clinical features of Glomus tumor. Enlist investigations. Discuss management options.	ENT	Glomus tumor
ENT1-Ear-006	Describe clinical features of temporal bone trauma. Enlist its possible complications. Outline relevant investigations and initial management plan.	ENT	Temporal bone trauma
ENT1-Ear-007	Describe causes and clinical features of facial nerve palsy. Outline management plan. Identify potential complications and prognostic factors of facial nerve palsy.	ENT	Facial Nerve Palsy

ENT1-Ear-008	Describe following surgical procedures used in treatment of ear diseases and mention their indications. i. Myringotomy ii. Myringoplasty iii. Tympanoplasty iv. Cortical mastoidectomy v. Modified radical mastoidectomy vi. Radical Mastoidectomy	ENT	Surgical Procedures of Ear
--------------	--	-----	----------------------------



MODULE RATIONALE

Ophthalmology is a vital medical specialty dedicated to the diagnosis, treatment, and prevention of eye diseases. It is essential for medical students to have a thorough understanding of the eye's basic anatomy, physiology, and pathology in order to manage common ocular conditions effectively. This module aims to equip medical students with the knowledge and clinical skills necessary to identify and manage a wide range of ophthalmic conditions frequently encountered in general practice and emergency settings.

MODULE OUTCOMES

- Identify common ophthalmic diseases and disorders encountered in OPD, IPD, multi-disciplinary and emergency settings.
- Apply fundamental clinical skills in the examination of the eye and adnexa, including visual acuity assessment and basic use of ophthalmic instruments.
- Formulate differential diagnosis and initial management plans for common ophthalmic conditions, including appropriate referral when necessary.
- Integrate knowledge of ophthalmic health into the broader context of systemic diseases and public health considerations.

SUBJECTS INTEGRATED IN THE MODULE

1. Medicine
2. Oncology
3. Pharmacology
4. Forensic Medicine
5. Rheumatology

Syllabus



THEORY			
EYE-I			
CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC
Eye1-001	Describe the clinical presentation of orbital cellulitis. Enlist the common causes of orbital cellulitis. Outline the management plan for a patient with orbital cellulitis. List the potential complications of orbital cellulitis. Differentiate between different causes of Proptosis (Thyroid eye disease, IOID, Fungal, Tumors) Describe the clinical presentation of a blowout fracture Explain management of a Blowout Fracture	Ophthalmology	Orbit
Eye1-002	Explain the mechanism of tear production and drainage in the lacrimal apparatus. Differentiate between epiphora and lacrimation based on underlying mechanisms.	Ophthalmology	Lacrimal Apparatus
	Enumerate the symptoms and signs of acute and chronic dacryocystitis. List the causes of acute and chronic dacryocystitis Explain the pathophysiology of acute and chronic dacryocystitis. Outline the management plan for acute and chronic dacryocystitis. Describe causes, clinical presentation, and treatment of dacryoadenitis.	Ophthalmology	
Eye1-003	Differentiate between ectropion and entropion on the basis of clinical features. Enlist the clinical features of ectropion and entropion. Enlist clinical features of trichiasis and distichiasis. Discuss the management options for ectropion and entropion, trichiasis, distichiasis.	Ophthalmology	Eyelids

	Classify blepharitis. Identify the signs and symptoms of each type of blepharitis. Differentiate blepharitis from other eyelid conditions such as sty, chalazion and other eyelid swellings. Outline the management plan for blepharitis.	Ophthalmology	
	Describe the clinical presentation of sty. Differentiate sty from other eyelid swellings on the basis of clinical features and pathophysiology. List the etiological factors of sty. Outline appropriate treatment and patient advice.	Ophthalmology	
	Define chalazion and differentiate it from sty. Explain the underlying pathophysiology and causes. List the clinical features and possible complications. Outline the management options. Discuss preventive measures and patient counseling.	Ophthalmology	
	Define ptosis. (congenital and acquired) List the common causes of ptosis. Identify clinical conditions associated with ptosis. Describe surgical and non-surgical treatment options for ptosis.	Ophthalmology/ Medicine	
Eye1-004	Describe the clinical presentation of pterygium and pingecula. List the causes of pterygium and pingecula Outline the medical and surgical management of pterygium and pingecula. Discuss preventive measures and patient counseling.	Ophthalmology	Conjunctiva
	Classify conjunctivitis based on etiology. Describe the clinical presentation of infective conjunctivitis. (Bacterial, Viral, Trachoma) Identify possible differential diagnosis for 'pink eye'. Outline the management plan of infective conjunctivitis.	Ophthalmology	

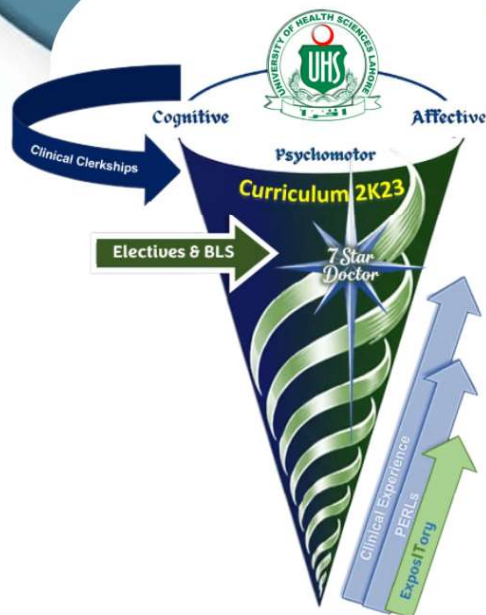
	Describe the clinical presentation for allergic conjunctivitis. List the causes of allergic conjunctivitis. Outline the treatment plan for allergic conjunctivitis.		
	Define 'dry eyes'. Explain the pathophysiology of dry eyes. Identify the clinical conditions associated with dry eyes. Discuss the treatment options for dry eyes.	Ophthalmology	
Eye1-005	Diagnose episcleritis based on characteristic clinical findings. Explain the pathophysiology of episcleritis. Outline the treatment plan, including supportive care and pharmacological options. Differentiate episcleritis from scleritis and other causes of red eye.	Ophthalmology	Sclera
	Diagnose scleritis based on clinical features, including severity and pattern of pain and redness. Explain the pathophysiology of scleritis. Outline the management strategies, including systemic therapy and monitoring for complications.	Ophthalmology	
Eye1-006	Classify keratitis based on etiology. Describe signs and symptoms of keratitis. Outline the treatment options of keratitis based on etiology. Discuss the complications of keratitis.	Ophthalmology	Cornea
	Diagnose corneal ulcers based on etiology (bacterial, viral, fungal, acanthamoeba, autoimmune) symptoms, signs, specific investigations, and slit lamp exam. Explain the etiology of corneal ulcers along with risk factors. List the complications of corneal ulcers. Discuss the management of corneal ulcers according to etiology along with the preventive measures.	Ophthalmology	

	Describe the common indications and contraindications for contact lens use. Identify common complications related to contact lens wear. Outline preventive measures to avoid contact lens-related ocular problems.		
	Define photorefractive surgery and list its common types (e.g., Femto LASIK, LASIK, PRK, TPRK). List the indications and contraindications for photorefractive surgery. Identify the complications of photorefractive surgery. Outline postoperative care and patient counseling points.	Ophthalmology	
	Define keratoconus and describe its pathophysiology. List the risk factors associated with keratoconus. Identify the clinical features and signs of keratoconus. Discuss the management options for keratoconus including preventive strategies to slow disease progression.	Ophthalmology	



Modular Integrated Curriculum 2K23 MBBS Year-04

BLOCK-11



**Modular Integrated
Curriculum 2K23**
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-Neu-002	Identify signs and symptoms of meningitis. Enlist the diagnostic approach. Outline medical management plan. Identify the potential complications.	Neurology/ Medicine	Meningitis
NS2-Neu-003	List the common viral and non-viral causes of encephalitis. Identify the typical clinical presentation. Outline the diagnostic workup. Plan the management strategies Identify short- and long-term complications.	Neurology/ Medicine	Encephalitis
NS2-Neu-004	Define ischemic stroke. Diagnose ischemic stroke based on clinical presentation. Enlist investigations to determine the cause. Describe management including emergency intervention and prevention of ischemic stroke.	Neurology/ Medicine	Ischemic stroke
NS2-Neu-005	Define subarachnoid and intracerebral hemorrhage. Enlist causes and predisposing factors.	Neurology/ Medicine	Subarachnoid and intracerebral hemorrhage

	Identify key clinical manifestations and possible complications. Outline essential investigations with management and preventive measures.		
NS2-PS-003	Define neural tube defects and hydrocephalus. Classify types. Identify risk factors and clinical features. Outline management plan with early referral.	Pediatric Surgery	Hydrocephalus and spinal malformations
NS2-Neu-004	Define epilepsy. Describe clinical presentations of seizures. Enlist different investigative modalities for diagnosis of epilepsy. Outline the management plan.	Neurology	Epilepsy
NS2-Ph-005	Classify Anti-epileptics. Describe their mechanism of action, uses, adverse effects, drug interactions and contraindications. Enlist differences between sodium Valproate, Phenytoin, Carbamazepine, Gabapentin, Lamotrigine and Ethosuximide. Discuss role of antiseizure and benzodiazepines in essential tremors.	Pharmacology	Anti-epileptics
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.	Pathology	Neurodegenerative diseases

	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. Describe the key morphological findings, clinical manifestations, and diagnostic criteria of Parkinson's disease.		
NS2-Neu-008	Describe the etiology and risk factors associated with Alzheimer's disease. Identify the key clinical features and stages of cognitive and behavioral decline. Differentiate Alzheimer's disease from other causes of dementia. Outline the diagnostic approach. Discuss the management strategies. Identify the common complications and their impact on patient quality of life and caregiver burden.	Neurology/ Medicine	Alzheimer's disease
NS2-Ph-009	Classify the drugs used in the management of Alzheimer's disease and other dementias. Explain the mechanism of action, pharmacological effects, therapeutic uses, and adverse effects of cholinesterase inhibitors. Describe the mechanism of action, clinical role, and side effects of NMDA receptor antagonist (Memantine). Discuss the rationale and benefits of combination therapy (cholinesterase inhibitor + memantine) in moderate to severe Alzheimer's disease.	Pharmacology	Pharmacotherapy of Alzheimer's Disease and Dementia

NS2-Neu-010	Describe the etiology and risk factors of Parkinson's disease. Diagnose Parkinson's disease based on the cardinal motor and non-motor symptoms. Describe the clinical stages of the disease. Differentiate Parkinson's disease from other parkinsonian syndromes. Outline the important investigations. Describe treatment options and complications.	Neurology/ Medicine	Parkinson's disease
NS2-Ph-011	Classify Anti-Parkinson drugs. Explain the mechanism of action, pharmacological effects, therapeutic uses, adverse effects, drug interactions, and contraindications of anti-Parkinsonian agents. Discuss the rationale, advantages, and disadvantages of combining Carbidopa with Levodopa therapy. Describe the On–Off phenomenon, its underlying mechanisms, and management strategies. Explain the etiology, clinical features, and pharmacological management of drug-induced parkinsonism. Outline the pharmacokinetics and therapeutic approaches for drug-induced and other dyskinesias.	Pharmacology	Anti-Parkinson Drugs
NS2-Neu-012	Classify motor neuron diseases. Describe the diagnostic criteria and key clinical features of motor neuron disease. Enlist relevant investigations. Explain supportive and disease-modifying treatment strategies.	Neurology/ Medicine	Motor neuron disease
NS2-Ph-013	Classify drugs used in the management of movement disorders (Parkinsonism, Huntington's disease, dystonias, tremors, and drug-induced dyskinesias).	Pharmacology	Pharmacotherapy of Movement disorders

	Describe the mechanism of action, pharmacological effects, clinical uses, adverse effects, drug interactions, and contraindications of drugs used for hyperkinetic movement disorders. Discuss pharmacological strategies for the management of drug-induced movement disorders, including acute dystonia, akathisia, and parkinsonism. Explain the principles of drug selection, rationale for combination therapy, and the use of newer therapeutic agents in movement disorders.		
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-Neu-015	Define neuropathy and classify peripheral neuropathies. Identify the clinical features of neuropathies. Explain the functional impact of neuropathies on gait, sensation, and daily activities. Outline the diagnostic approach and management plan.	Neurology/ Medicine	Neuropathies
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.	Pathology/ Neurology	Myopathies

	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.		
NS2-Neu-017	Define and classify paraplegia. Differentiate paraplegia from quadriplegia and hemiplegia. Differentiate between upper and lower motor neuron lesions. Identify the key clinical features that help localize the spinal cord lesion. Discuss the management and identify potential complications.	Neurology/ Medicine	Paraplegia
NS2-Neu-018	Describe multiple sclerosis with its types and clinical variants. Explain the etiology, immunopathogenesis, and risk factors associated with multiple sclerosis. Identify the characteristic clinical features. Outline the diagnostic approach. Describe the management strategies.	Neurology/ Medicine	Multiple Sclerosis
NS2-Ph-019	Describe the pharmacological classification of anti-migraine drugs. Explain the mechanism of action of triptans and ergot alkaloids in the management of migraine. Describe the pharmacokinetic properties and clinical uses of different triptans and ergot derivatives. Describe the adverse effects, contraindications, and drug interactions.	Pharmacology	Anti-migraine drugs

NS2-Ph-020	Classify local anesthetic agents based on their chemical structure and duration of action. Explain the mechanism of action, pharmacological effects, and clinical applications of local anesthetics. Compare amide and ester local anesthetics in terms of metabolism, stability, and allergic potential. Describe the rationale, benefits, and risks of adding vasoconstrictors to local anesthetic preparations. Identify commonly used agents for short-, intermediate-, and long-duration procedures, including minor and major peripheral nerve blocks. Discuss the adverse effects, contraindications, and significant drug interactions of local anesthetics.	Pharmacology/ Anesthesia	Local Anesthetics
NS2-Ph-021	Classify general anesthetic agents based on their route of administration and duration of action. Describe the clinical uses, adverse effects, contraindications, and major drug interactions of commonly used general anesthetics. Discuss the principles and agents used for the reversal and recovery from anesthesia.	Pharmacology/ Anesthesia	General Anesthetics
NS2-Neu-022	Define coma and unconsciousness. Describe the pathophysiology underlying loss of consciousness. Apply the Glasgow Coma Scale for assessment. Outline the diagnostic approach. Discuss the complications, prognosis, and criteria for brain death determination.	Neurology/ Medicine	Coma and unconsciousness

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
NS2-Ra-001	Interpret ultrasound findings to identify features of hydrocephalus.	Radiology	Neuroimaging: hydrocephalus
NS2-Ra-002	Interpret CT and MRI images to identify intracranial hemorrhage, cerebral infarction, and CNS tumors.	Radiology	Neuroimaging: Stroke and CNS tumors

**Modular Integrated
Curriculum 2K23**
Volume-04

MODULE

28

**PSYCHIATRY &
BEHAVIORAL SCIENCES**



MODULE RATIONALE

The Psychiatry & Behavioral Sciences module equips medical students with a holistic understanding of health and illness by integrating psychological, social, cultural, and biological perspectives. It emphasizes the Bio-Psycho-Social model, communication skills, stress management, personality, coping mechanisms, ethics, professionalism, and the doctor-patient relationship to foster empathy and compassionate practice. Building on this foundation, students are introduced to the principles of psychiatry, gaining structured knowledge of common mental disorders including organic conditions, substance use, psychotic, mood, anxiety, trauma-related, developmental, and personality disorders along with their clinical presentation, diagnosis, and evidence-based management. Focus on pharmacological and non-pharmacological interventions ensures students develop the competence to provide comprehensive, patient-centered, and ethical care in healthcare settings.

MODULE OUTCOMES

- Apply the Bio-Psycho-Social model in assessing health and illness.
- Demonstrate effective communication, empathy, and professionalism during patient interactions.
- Analyze the influence of stress, personality, coping mechanisms, culture, and social factors on patient behaviour and treatment outcomes.
- Adhere to ethical principles, confidentiality, and cultural sensitivity in clinical practice.
- Describe the etiology, clinical features, and management of common psychiatric disorders and emergencies.
- Perform a psychiatric history and mental state examination.
- Formulate management plans for psychiatric conditions using both pharmacological and non-pharmacological approaches.
- Collaborate with interdisciplinary teams to ensure comprehensive patient management.

SUBJECTS INTEGRATED IN THE MODULE

1. Psychiatry
2. Behavioral Sciences
3. Pharmacology
4. Gynecology & Obstetrics
5. Community Medicine



THEORY			
BEHAVIORAL SCIENCES			
CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC
PsyBhS1-BhS-001	Explain the bio-psycho-social model of health and its application in patient care. Differentiate normalcy versus abnormalcy.	Behavioral Sciences	Bio-psycho-social model of health
PsyBhS1-BhS-002	Describe sensation, perception, attention, and concentration, and explain their relevance in clinical practice. Define memory, describe its stages and types, and suggest methods to improve it. Define thinking and describe its types. Define cognition and describe its levels. Discuss problem-solving and decision-making steps, barriers, and strategies in clinical practice.	Behavioral Sciences	Understanding Behavior
PsyBhS1-BhS-003	Define personality and its types. Explain developmental theories of personality. Explain defense mechanisms. Explain its significance in clinical practice. Define intelligence and describe its types. Explain the relevance of IQ and EQ in a doctor's professional and personal life. Discuss methods to enhance emotional intelligence (EQ) and intellectual intelligence (IQ).	Behavioral Sciences	Individual differences - Personality & Intelligence
PsyBhS1-BhS-004	Elaborate emotions and motivation and explain their influence on health and illness behavior. Apply basic motivational strategies to enhance patient adherence and lifestyle modification.	Behavioral Sciences	Emotions & Motivation
PsyBhS1-BhS-005	Explain the relationship between stress, stressors, and illness. Define coping skills and describe their role in managing stress.	Behavioral Sciences	Stress management

	Explain the concepts of adjustment and maladjustment in response to stress.		
PsyBhS1 -BhS- 006	Describe the concept of life events and their significance in daily life. Discuss conflict resolution, crisis intervention, and psychological first aid.	Behavioral Sciences	Life events - Psychotrauma
PsyBhS1 -BhS- 007	Discuss the concepts of transference, counter-transference, and boundaries in the doctor–patient relationship. Describe different models of doctor–patient relationship. Identify ethical dilemmas in doctor-patient relationships (e.g., confidentiality, end-of-life care, pharmaceutical interactions). Explain the rights of doctors and patients and discuss their importance in promoting ethical and safe medical practice.	Behavioral Sciences	Doctor-Patient Relationship
PsyBhS1 -BhS- 008	Define attitude, values, beliefs, and myths, and explain their influence on behavior. Explain the impact of social class, stigma, and the sick role on health. Describe health belief models and treatment adherence and their relevance to patient care. Describe cultural competence.	Behavioral Sciences	Culture and medical practice
PsyBhS1 -BhS- 009	Explain the process of grief and its impact on patients and families. Explain psychological reactions to illness and hospitalization. Explain strategies to manage them effectively.	Behavioral Sciences	Psychological reactions
PsyBhS1 -BhS- 010	Outline the stages of sleep and describe sleep disorders. Discuss non-pharmacological methods for sleep hygiene.	Behavioral Sciences	Sleep and consciousness

PsyBhS1 -BhS- 011	Define pain and describe its physical and psychological aspects relevant to patient care. Explain subjective factors influencing pain. Manage pain using non pharmacological interventions.	Behavioral Sciences	Pain
PsyBhS1 -BhS- 012	Define child-rearing practices and their influence on personality development. Explain the effects of child-rearing practices on health and illness.	Behavioral Sciences	Child rearing practices
PSYCHIATRY			
CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC
PsyBhS1 -Psy-001	Describe mood and affect. Describe and classify hallucination. Describe and classify delusion. Describe the abnormalities of speech in psychiatric disorders. Describe obsession and compulsion.	Psychiatry	Introduction to Key Psychiatric Terms
PsyBhS1 -Psy-002	Classify the types of non-pharmacological interventions. Describe the principles and applications of common psychotherapies. Explain the importance of social and rehabilitative approaches. Discuss the role of somatic therapies and lifestyle modifications in psychiatry.	Psychiatry/ Behavioural sciences	Non pharmacological interventions in Psychiatry
PsyBhS1 -Psy-003	Differentiate between delirium and dementia. Discuss causes and types of dementias. State manifestations and risk associated with dementia. Enumerate mental state examination, and mini mental state examination findings of delirium and dementias.		Delirium and dementia

	Discuss prognostic factors of memory related disorders. Outline a treatment plan including pharmacological and non-pharmacological interventions.		
PsyBhS1 -Psy-004	Define Generalized anxiety disorder (GAD) and describe common risk factors. Identify typical mental state examination findings of GAD. Differentiate GAD from eustress. Outline pharmacological and psychotherapeutic treatment of GAD.	Psychiatry	Anxiety Disorders
	Identify hallmark symptoms of panic disorder based on Mental Status Examination. Differentiate panic attacks from angina, myocardial infarction, and asthma. Describe strategies for supporting patients with panic disorder.	Psychiatry	
	Define and classify phobias. Outline treatment approaches for phobias, including psychological therapies and pharmacological options.	Psychiatry	
PsyBhS1 -Ph-001	Classify anxiolytic drugs. Explain the mechanism of action of different anxiolytic drugs. Discuss the pharmacokinetics and pharmacodynamics of anxiolytics. Identify the clinical indications of anxiolytic drugs. List the contraindications and precautions for the use of anxiolytic drugs. Describe the adverse effects and risks of dependence, tolerance, and withdrawal associated with anxiolytics.	Pharmacology	Anxiolytic drugs

	Classify sedative-hypnotic drugs. Explain the mechanism of action of sedative-hypnotics. Describe the pharmacokinetics and pharmacodynamics of commonly used sedative-hypnotics. Identify the clinical indications of sedative-hypnotics. List the contraindications to the use of sedative-hypnotics in clinical practice. Identify adverse effects of sedative-hypnotics.		Sedative-hypnotics
PsyBhS1 -Psy-005	Classify depressive disorders. Describe risk factors of depressive disorders. Diagnose moderate depressive disorder on the basis of mental state examination findings. Outline management plan including pharmacological options and psychotherapy.	Psychiatry	Depressive Disorders
	Describe suicide and deliberate self-harm, including associated factors. Describe management of suicide and deliberate self-harm.	Psychiatry	
	Differentiate postpartum depression from postpartum blues. Formulate a management plan for postpartum blues and postpartum depression.	Psychiatry	
PsyBhS1 -Ph-002	Classify anti-depressants. Describe their mechanism of action, pharmacological effects, uses, adverse effects, drug interactions and contraindications. Discuss rationale of choosing an antidepressant for a particular condition	Pharmacology	Anti-depressants
PsyBhS1 -Psy-006	Describe Bipolar I and Bipolar II disorders according to standard diagnostic criteria. Differentiate the clinical features of mania and hypomania.	Psychiatry	Bipolar affective disorder

	Differentiate bipolar disorders from schizophrenia and substance-induced mania on the basis of clinical presentation and course. Interpret mental state examination (MSE) findings in mania. Formulate a basic management plan for bipolar disorder.		
PsyBhS1-Ph-003	Classify and enumerate mood stabilizers. Describe their mechanism of action, pharmacological effects, uses, adverse effects, drug interactions and contraindications.	Pharmacology	Mood Stabilizers
PsyBhS1-Psy-007	Describe the etiology, risk factors, and underlying neurobiological, psychological, and social factors contributing to Obsessive–Compulsive Disorder (OCD). Enumerate the diagnostic criteria of OCD according to ICD-11/DSM-5 TR. Identify the common clinical features and course of illness. Interpret the characteristic findings on mental state examination in OCD. Discuss the impact of OCD on daily functioning and quality of life. Outline the treatment options including pharmacological and psychological approaches.	Psychiatry	Obsessive–Compulsive and Related Disorders
	Define Body Dysmorphic Disorder (BDD) Differentiate from BDD from eating disorders Explain the clinical findings of a case of BDD based on mental state examination. Outline the management plan to treat BDD.	Psychiatry	
PsyBhS1-Psy-008	Define and classify dissociative disorders Identify key clinical features of dissociative disorders Describe principles of management of dissociative disorders	Psychiatry	Dissociative and somatoform disorders (conversion disorder)

	Define and classify somatoform disorders with emphasis on conversion disorder Identify key clinical features of conversion disorder Describe principles of management of conversion disorder		
PsyBhS1 -Psy-009	Explain the characteristic mental state examination (MSE) findings in PTSD. Differentiate PTSD from acute stress disorder. Outline the management plan for PTSD. Define adjustment disorder. Identify the emotional and behavioral symptoms that occur within three months of an identifiable stressor.	Psychiatry	Trauma- and Stressor-Related Disorders
PsyBhS1 -Psy-010	Define schizophrenia. Describe the positive and negative symptoms of schizophrenia. Outline the differential diagnosis of schizophrenia. Explain the characteristic mental state examination (MSE) findings in schizophrenia. Outline the management plan to treat a patient of schizophrenia.	Psychiatry	Schizophrenia and Psychotic Disorders
PsyBhS1 -Ph-004	Classify antipsychotic drugs. Explain the mechanism of action of typical and atypical antipsychotics. Describe the pharmacokinetics and pharmacodynamics of antipsychotic drugs. Identify the clinical indications of antipsychotic drugs. List the contraindications and precautions for the use of antipsychotics. Describe the adverse effects of antipsychotics.	Pharmacology	Antipsychotic Drugs
PsyBhS1 -Psy-011	Define paranoid, schizoid, and schizotypal personality disorders. Describe the characteristic symptoms and behavioral patterns of each disorder.	Psychiatry	Personality Disorders I

	Interpret relevant findings on the mental state examination in these disorders. Differentiate Cluster A disorders from schizophrenia and delusional disorders. Outline the principles of management, including psychotherapy and pharmacotherapy where appropriate.		
PsyBhS1-012	Define antisocial, borderline, histrionic, and narcissistic, anxious avoidant, dependent, and obsessive compulsive personality disorders. Explain the clinical features and psychopathology of each disorder. Identify mental state examination findings typical of Cluster B and C personality disorders. Differentiate these disorders from mood disorders, substance use, and other psychiatric conditions. Summarize management strategies, including risk assessment, crisis intervention, and psychotherapy.	Psychiatry	Personality Disorders II
PsyBhS1-013	Classify commonly abused substances (e.g., alcohol, opioids, cannabis, stimulants, sedatives, caffeine, nicotine). Describe the clinical features and diagnostic criteria of substance-related disorders. Identify signs and symptoms of intoxication and withdrawal for common substances. Explain the psychological, social, and medical complications associated with substance use. Outline the approach to assessment, including history, examination, and mental state examination. Explain the principles of management for substance use disorders. Discuss preventive strategies and the role of psychoeducation in reducing substance use. Manage the patients of acute and chronic alcoholism.	Psychiatry	Substance-Related Disorders

PsyBhS1 -Ph-005	Classify CNS stimulants. Explain the mechanism of action. Discuss the clinical indications for the therapeutic use of CNS stimulants. Identify the common contraindications to CNS stimulant use. Describe the signs and symptoms of overdose of CNS stimulants. Summarize the adverse effects and toxic manifestations of CNS stimulants.	Pharmacology	CNS Stimulants
PsyBhS1 -Ph-006	Classify types of alcohol. Describe the mechanism of action, pharmacological effects, uses, adverse effects, drug interactions and contraindications of Ethyl Alcohol. Enlist the enzyme systems involved in ethanol and methanol metabolism. Describe treatment of methanol and ethanol poisoning with alcohol. Describe pharmacological treatment of acute alcohol intoxication, alcohol withdrawal syndrome and Wernicke Korsakoff syndrome Identify the clinical features of the disulfiram–ethanol reaction and list the drugs that produce a disulfiram-like effect when combined with alcohol. Describe fetal-alcohol syndrome.	Pharmacology	Alcohol
PsyBhS1 -Psy-014	Define and classify psychosexual disorders Identify key clinical features of psychosexual disorders Describe principles of management of psychosexual disorders	Psychiatry	Psychosexual disorders
PsyBhS1 -Psy-015	Describe the characteristic clinical features of anorexia nervosa. Differentiate anorexia nervosa from hyperthyroidism and depression. Explain the typical mental state examination findings.	Psychiatry	Eating Disorders

	Outline the management plan to treat a patient diagnosed with anorexia nervosa.		
	Diagnose bulimia nervosa on the basis of signs and symptoms and mental state examination findings. Describe the binge–purge cycle. Outline management strategies, including pharmacotherapy and psychotherapy.	Psychiatry	
PsyBhS1 -Psy-016	Describe the clinical signs and symptoms in children and adolescents with Attention Deficit Hyperactivity Disorder (ADHD). Analyze mental state examination (MSE) findings in individuals with ADHD. Explain the etiological factors contributing to the development of ADHD. Differentiate ADHD from normal childhood behavior. Formulate a management plan to treat individuals with ADHD.	Psychiatry	Neurodevelopmental Disorders
	Describe the clinical presentation of Autism Spectrum Disorder (ASD) in children. Identify early signs of ASD. Interpret behavioral observations relevant to diagnosis during assessment. Develop a basic management plan for children with Autism Spectrum Disorder incorporating early intervention and multidisciplinary care.	Psychiatry	
	Differentiate types of learning disorders, including dyslexia, dysgraphia, and dyscalculia. Discuss the academic difficulties despite normal intelligence as a feature of learning disorders. Identify the emotional and behavioral consequences of learning disorders.	Psychiatry	

	Outline the role of mental state examination in evaluating children with learning disorders. Explain the management strategies for learning disorders.		
	Define enuresis and differentiate between primary and secondary types. Explain the psychological and psychosocial factors that contribute to enuresis in children. Describe the emotional and behavioral consequences of enuresis. Identify psychiatric comorbidities commonly associated with enuresis. Outline the psychological and pharmacological management strategies for enuresis.	Psychiatry	

**Modular Integrated
Curriculum 2K23**
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



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-Neph-004	Enumerate the common causes of nephritic syndrome. Explain the pathophysiological mechanisms of glomerular inflammation and injury. Correlate the clinical presentation with underlying morphological changes. Analyze the laboratory findings characteristic of nephritic presentations. Outline the management strategies and potential complications.	Nephrology	Nephritic Syndrome

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.	Pathology/ Nephrology	Acute tubular necrosis

	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.		
Re2-Pa-009	Classify tubulointerstitial nephritis (TIN) into acute and chronic forms. Describe the etiological factors, predisposing conditions, and commonly implicated drugs causing renal injury. Explain the pathogenesis and mechanisms of tubular and interstitial injury, including drug-induced nephritis. Correlate pathological changes with clinical presentation and laboratory findings. Outline the principles of diagnosis, management, and prognosis for both idiopathic and drug-induced forms.	Nephrology	Tubulointerstitial and drug-induced nephritis
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

RENAL FAILURE AND ITS PROGRESSION			
Re2-Neph-001	Describe the etiology and risk factors of Acute Renal Failure. Explain the underlying mechanism. Identify the clinical features and potential complications. Interpret the laboratory investigations. Outline the management plan. Discuss the role and limitations of diuretics in the management of Acute Renal Failure.	Nephrology	Acute Renal failure
Re2-Neph-002	Describe the etiology and risk factors of Chronic Renal Failure. Identify the clinical features and systemic manifestations. Interpret the laboratory investigations and diagnostic criteria. Outline management plan.	Nephrology	Chronic Renal failure (Chronic Kidney Disease)
Re2-Neph-003	Describe end-stage renal disease. Discuss the pathophysiology and progression of chronic kidney disease to ESRD. Enumerate the indications for initiating dialysis. Describe types of dialysis. Explain the purpose, and care of an arteriovenous fistula. Discuss the treatment options for ESRD. Identify the complications associated with dialysis and their management principles. Outline the principles of patient education and long-term follow-up in dialysis care.	Nephrology	End-stage renal disease and Dialysis (hemodialysis and peritoneal dialysis)
METABOLIC AND SYSTEMIC RENAL DISORDERS			
Re2-Neph-004	Describe diabetic nephropathy with its clinical significance. Identify the structural and functional renal changes.	Nephrology	Diabetic nephropathy

	Enlist the laboratory investigations used for diagnosis and monitoring. Outline the principles of prevention, early detection, and management. Describe the complications and prognosis.		
Re2-Neph-005	Define hypertensive nephrosclerosis. Differentiate benign and malignant forms. Describe the structural and functional renal changes. Correlate clinical manifestations with renal function impairment. Outline investigations and management plan. Discuss the prognosis and long-term outcomes.	Nephrology	Hypertensive nephrosclerosis
Re2-Neph-006	Describe the role of kidneys in electrolyte and acid–base balance regulation. Explain the pathophysiological mechanisms underlying hypo- and hypernatremia, and hypo- and hyperkalemia. Describe the compensatory responses in metabolic acidosis and metabolic alkalosis. Interpret clinical and laboratory findings in common electrolyte and acid–base disorders. Correlate abnormalities in serum electrolytes and arterial blood gases with underlying renal dysfunction. Outline the investigations, management and complications.	Nephrology	Electrolyte and Acid–Base Disorders
OBSTRUCTIVE AND INFECTIVE DISORDERS OF THE URINARY TRACT			
Re2-Uro-007	Define obstructive uropathy and hydronephrosis. Describe etiology and clinical presentation. Enlist the investigations. Outline management plan. Identify complications.	Urology/ Surgery	Obstructive Uropathy and Hydronephrosis

Re2-Uro-008	Define urolithiasis and classify urinary stones by composition. Explain the pathogenesis and predisposing factors for stone formation. Describe the clinical presentation and diagnostic evaluation. Discuss the principles of medical and surgical management. Outline preventive strategies and patient education.	Urology/ Surgery/ Pediatric Surgery	Urolithiasis
Re2-Neph-009	Identify etiological factors and predisposing conditions of acute and chronic pyelonephritis. Explain the pathogenesis of ascending and hematogenous spread of infection. Correlate pathological features with clinical manifestations and complications. Outline relevant investigations and management plan.	Nephrology	Acute and Chronic Pyelonephritis
Re2-Uro-010	Classify urinary tract infections by site and severity. Explain the clinical features of acute cystitis and prostatitis. Discuss diagnostic investigations and interpretation of urine analysis. Outline management principles, antibiotic stewardship, and prevention.	Urology	Cystitis and Prostatitis
Re2-Uro-011	Define hematuria and differentiate between microscopic and macroscopic types. Enumerate common causes of hematuria. Describe the diagnostic approach and interpretation of investigations. Correlate clinical features with underlying renal or urological pathology.	Urology/ Nephrology	Hematuria
FUNCTIONAL BLADDER DISORDERS			
Re2-Uro-012	Define neurogenic bladder and describe its types based on neurological involvement.	Urology	Neurogenic Bladder

	Explain the pathophysiology of bladder dysfunction in neurological diseases. Correlate clinical features with the level of neural lesion. Discuss diagnostic methods and management principles, including catheterization and rehabilitation		
Re2-Uro-013	Define urinary retention and urinary incontinence. Classify types of incontinence based on mechanism. Describe the etiological factors and pathophysiology of each condition. Discuss clinical features, investigations, and management approaches.	Urology	Urinary Retention and Incontinence
Re2-Ph-014	Enumerate the drugs used in the management of urinary retention, including α-adrenergic blockers 5-α reductase inhibitors - Muscarinic agonists - Cholinesterase inhibitors - Phosphodiesterase inhibitors Explain the mechanism of action, indications, and adverse effects of each drug class in improving bladder emptying or relieving outlet obstruction.	Pharmacology	Pharmacotherapy of Urinary Retention
Re2-Ph-015	Enlist the drugs used in the management of urinary incontinence. Explain the mechanism of action of antimuscarinic agents and β3-adrenergic agonists in overactive bladder. Describe the role of duloxetine and estrogen in stress urinary incontinence. Outline the use of botulinum toxin in neurogenic detrusor overactivity. State the common adverse effects and contraindications of these drugs.	Pharmacology	Pharmacotherapy of Urinary Incontinence

	Discuss the rationale for drug selection based on the type of urinary incontinence (OAB, stress, mixed, neurogenic).		
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 use in diagnosis and monitoring.	Pathology	Prostatic Diseases (BPH, Prostatitis, Prostate Cancer)
Re2-Uro-008	Describe the anatomy and physiology of the prostate gland. Differentiate between benign and malignant prostatic diseases. Describe clinical features of: • BPH • Prostatitis • Prostate cancer Discuss diagnostic evaluation, including PSA testing and imaging. Outline management plan.	Urology	
Re2-PS-008a	Enlist contraindications to circumcision. Plan circumcision (methods). Discuss counselling points regarding timing of surgery and follow-up.	Pediatric Surgery	Circumcision
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.	Pathology/ Nephrology	Renal Cell Carcinoma (RCC)

	Correlate pathological features with clinical manifestations and complications. Discuss the prognostic factors influencing outcome and survival. Outline the principles of diagnosis and management.		
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-Uro-012	Describe the clinical features and common presentations of Urothelial cell carcinoma Enlist the diagnostic investigations used in the evaluation. Outline management plan and factors affecting prognosis.	Urology	
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

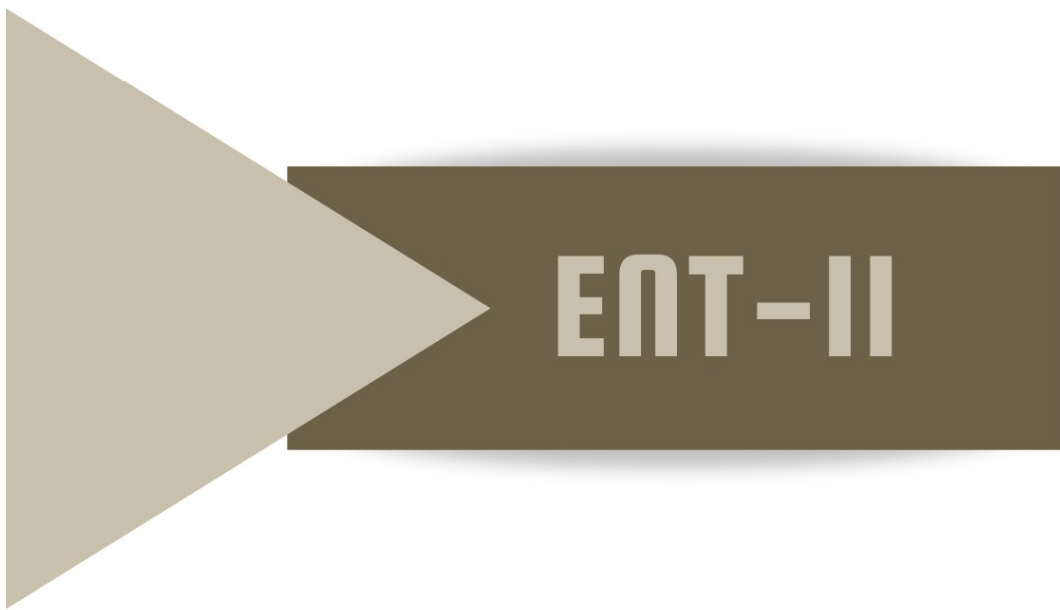
TRAUMA AND EMERGENCY UROLOGY			
Re2-Uro-014	Describe the mechanisms and patterns of renal, ureteric, bladder, and urethral trauma. Discuss clinical presentation and diagnostic evaluation. Outline principles of initial management and surgical repair. Identify the potential complications and rehabilitation needs.	Urology	Genitourinary Injuries
CONGENITAL GENITOURINARY ANOMALIES			
Re2-Uro-015	Describe the embryological basis and classification of congenital urinary tract anomalies including PUJ obstruction and vesicoureteric reflux. Explain the pathophysiology and potential renal complications. Identify the diagnostic modalities. Outline management plan. Counsel parents regarding prognosis, long-term renal monitoring, and preventive strategies.	Urology	PUJ obstruction and vesicoureteric reflux
Re2-PS-016	Define Posterior urethral valve. Describe clinical features. Outline investigations and management plan.	Pediatric Surgery	Posterior urethral valve
Re2-PS-017	Define and classify hypospadias and epispadias. Identify associated anomalies. Outline management plan.	Pediatric Surgery	Hypospadias and epispadias
Re2-PS-018	Classify the types of Undescended testis. Identify complications. Outline management and timing of surgery and referral.	Pediatric Surgery	Undescended testis
Re2-PS-019	Describe testicular torsion considering it as surgical emergency. Describe its pathophysiology. Identify the clinical presentation. Outline investigations and management plan including timely referral.	Pediatric Surgery	Torsion testis

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	Glomerulonephritis
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



**Modular Integrated
Curriculum 2K23**
Volume-04



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

Syllabus

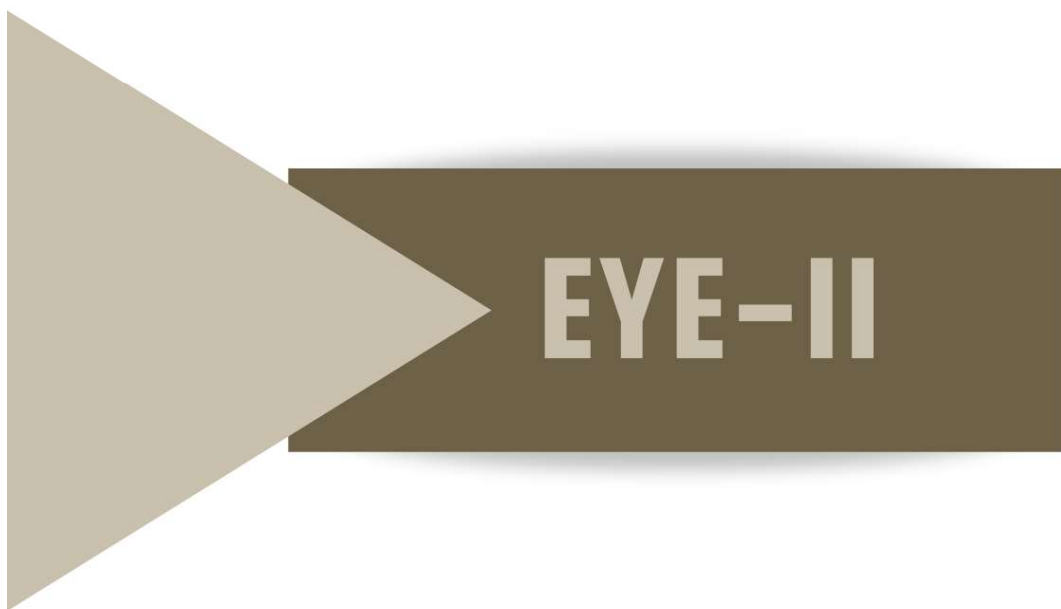


THEORY			
ENT-II (NOSE)			
CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC
ENT2-Nose-001	Identify important structures in the surgical anatomy of the nose that require care during surgery. Describe the surgical anatomy of the paranasal sinuses, emphasizing relations with vital structures. Describe mucociliary clearance and its role in sinus health and postoperative outcomes. Correlate surgical anatomy and physiology with common clinical conditions (e.g., epistaxis, sinusitis) and their surgical management.	ENT/Anatomy/ Physiology	Surgical anatomy and physiology of nose and paranasal sinuses
ENT2-Nose-002	Describe the clinical features, management, and complications of following infections. - Boil - Cellulitis - Vestibulitis Diagnose on basis of the clinical features, outline management plan, and discuss the complications of following: - Foreign bodies in nose - Maggots nose - Rhinolith	ENT	Diseases of the External Nose and Nasal Vestibule
ENT2-Nose-003	Differentiate between simple snoring and obstructive sleep apnea syndrome (OSAS). Explain the underlying mechanisms and causes. Describe the clinical presentation and complications. Identify the diagnostic methods and investigations. Discuss the various treatment options.		Snoring and Sleep Apnea
ENT2-Nose-004	Identify the etiology of Deviated Nasal Septum (DNS) and its types. Describe clinical presentation.		Nasal Septum Deformities

	Enlist the surgical procedures to correct DNS. Identify complications of nasal septal surgery. Enlist the causes of Septal Perforation. Describe its clinical presentation. Enlist investigations to rule out cause of septal perforation. Outline the management plan. Enlist the causes of Septal Abscess. Identify its clinical presentation and complications. Outline the treatment of septal abscess.		
ENT2-Nose-005	Define and classify Rhinitis. Describe clinical features of infective rhinitis with management. Describe the clinical features of following types of non-infective rhinitis and their management: - Allergic Rhinitis - Vasomotor Rhinitis - Atrophic Rhinitis - Hypertrophic Rhinitis - Rhinitis Medicamentosa	ENT	Rhinitis (Infective and Non-infective)
ENT2-Nose-006	Define Sinusitis. Describe clinical presentation. Enlist investigations. Describe the treatment of acute and chronic Sinusitis. Enlist the surgical procedures done in case of chronic Sinusitis. Identify complications of Sinusitis.	ENT	Infections of the Paranasal Sinuses
ENT2-Nose-007	Define Nasal Polyp. Describe its etiology and clinical features. Differentiate between Antro choanal and ethmoidal polyps. Outline the management plan.		Nasal Polyps
ENT2-Nose-008	Enlist the causes of Epistaxis. Describe its clinical features. Outline initial management and preventive strategies.		Epistaxis

ENT2- Nose- 009	Identify clinical features of maxillofacial trauma. Enlist necessary investigations. Outline steps for initial management. Discuss the management of the following: - Fracture nasal bone - Mandibular fracture - Maxillary bone fracture - Zygomatic fracture - Orbital blowout fracture Enlist the etiology of CSF Rhinorrhoea. Describe its clinical presentation. Outline investigations and management plan. Describe the medico-legal implications of maxillofacial trauma, including proper documentation, reporting requirements, and preservation of evidence for legal purposes. (Integrate with Forensic Medicine-see annexure A)	ENT/Forensic medicine	Facial Trauma (Maxillofacial)
ENT2- Nose- 010	Describe the clinical features and ENT manifestations of Nasal Tuberculosis. Explain the pathology, clinical presentation, and complications of leprosy involving the nose. Discuss the clinical features, diagnosis, and management of invasive Aspergillosis of the paranasal sinuses. Describe the presentation, rapid progression, and surgical importance of Mucormycosis. Explain the nasal and systemic manifestations of Wegener's granulomatosis and its diagnostic approach. Describe ENT features of Systemic Lupus Erythematosus with emphasis on nasal involvement. Discuss the clinical features and diagnostic findings of Sarcoidosis affecting the nose and paranasal sinuses.	ENT	Granulomatous Disorders of Nose & Paranasal Sinuses

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
-----------------------	---	---------------	---------------------



MODULE RATIONALE

Ophthalmology is a vital medical specialty dedicated to the diagnosis, treatment, and prevention of eye diseases. It is essential for medical students to have a thorough understanding of the eye's basic anatomy, physiology, and pathology in order to manage common ocular conditions effectively. This module aims to equip medical students with the knowledge and clinical skills necessary to identify and manage a wide range of ophthalmic conditions frequently encountered in general practice and emergency settings.

MODULE OUTCOMES

- Identify common ophthalmic diseases and disorders encountered in OPD, IPD, multi-disciplinary and emergency settings.
- Apply fundamental clinical skills in the examination of the eye and adnexa, including visual acuity assessment and basic use of ophthalmic instruments.
- Formulate differential diagnosis and initial management plans for common ophthalmic conditions, including appropriate referral when necessary.
- Integrate knowledge of ophthalmic health into the broader context of systemic diseases and public health considerations.

SUBJECTS INTEGRATED IN THE MODULE

Medicine
Pharmacology
Forensic Medicine
Rheumatology

Syllabus



THEORY			
EYE-II			
CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC
Eye2-001	Define uveitis and classify based on anatomical location and etiology. Describe the pathophysiology of uveitis. Identify the key clinical features of uveitis. Differentiate uveitis from other causes of red eye using history and clinical examination. Explain the principles of treatment, including corticosteroid therapy, immunosuppressive agents, and management of complications.	Ophthalmology	Uveal tract
Eye2-002	Describe the normal pupillary reactions (direct light reflex, consensual light reflex, and accommodation reflex). Describe abnormal pupillary reactions (Marcus Gunn pupil/RAPD, Argyll Robertson pupil, Adie's pupil and Horner's syndrome with their underlying causes).		Pupil
Eye2-003	Classify cataract. Describe cataract secondary to systemic diseases. Explain the symptoms, signs, investigations, and management plan for congenital cataract. Diagnose acquired cataract based on symptoms, signs, pathophysiology and investigation findings. Justify selection of treatment options for acquired cataract. Enumerate the per and post-operative complications of cataract surgery Explain congenital cataract secondary to TORCH infections.		Lens
Eye2-004	Define glaucoma. Classify the different types of glaucoma.	Ophthalmology	Glaucoma

	Describe the anatomy of the anterior chamber angle and aqueous humor outflow/ Drainage pathways in relation to glaucoma. Explain the etiology and pathophysiology of various types of glaucoma. (open, close, primary, secondary, congenital, acquired) Enumerate the different types of secondary glaucoma. Describe the details of lens induced glaucoma. Identify the characteristic clinical features of angle-closure glaucoma./ different types of glaucoma (open, close, primary, secondary, congenital, acquired) Formulate the differential diagnosis of glaucoma. Outline the diagnostic investigations used for glaucoma. Outline the treatment plan for angle-closure glaucoma. Outline the treatment plan for open-angle and other types of glaucoma. Explain pathophysiology of congenital glaucoma Outline the treatment plan for congenital glaucoma		
	Classify anti-glaucoma medications. Explain the mechanisms of action of antiglaucoma drugs and their effect on intraocular pressure. Discuss the indications, contraindications, and adverse effects of antiglaucoma medications. Write prescription of glaucoma.(Pharmacology)	Ophthalmology/ Pharmacology	
Eye2-005	Define retinitis pigmentosa and describe its pathophysiology. Identify the characteristic signs and symptoms, including night blindness, peripheral field loss, and typical fundus changes (classical triad). Outline the treatment and supportive management options for patients with retinitis pigmentosa. Discuss the important counselling points in retinitis pigmentosa.	Ophthalmology	Retina and Vitreous

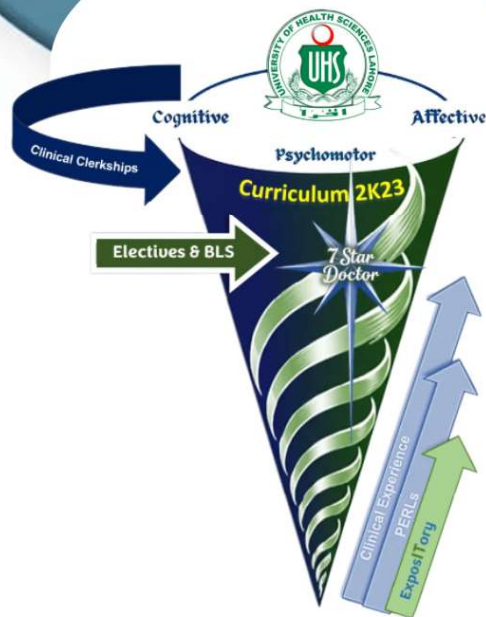
	Describe the pathophysiology of diabetic retinopathy, including microvascular changes. Outline the clinical signs and imaging methods used for diagnosis, including fundus examination and optical coherence tomography, fundus fluorescein angiography, ultrasound B scan. Explain the principles of management, including glycemic control, laser photocoagulation, intravitreal therapy, and vitrectomy. Define retinal detachment and classify its types. Describe the pathophysiology and risk factors for retinal detachment. Recognize the clinical features and warning symptoms of different types of retinal detachments. Outline the diagnostic methods, including direct and indirect fundoscopy/ ophthalmoscopy and imaging including ultrasound B scan and OCT. Explain the principles of management, including medical and surgical options and postoperative care. Define retinopathy of prematurity and describe its pathophysiology. Identify the risk factors and etiological factors associated with retinopathy of prematurity. Recognize/ Explain the clinical features, grading and complications of retinopathy of prematurity. Outline the methods for diagnosis and screening protocols in retinopathy of prematurity. Describe the management options, including medical, laser, and surgical interventions. Explain preventive strategies and the importance of timely screening in at-risk infants.	Ophthalmology	
Eye2-006	Define refractive errors and describe their impact on vision. Differentiate the main types (myopia, hyperopia, astigmatism, and presbyopia).		Refractive errors

	Explain the optical and anatomical basis of each refractive error. Identify key clinical features and diagnostic methods used to detect refractive errors. Outline the main management options, including spectacles, contact lenses, and refractive surgery.		
--	--	--	--



Modular Integrated Curriculum 2K23 MBBS Year-04

BLOCK-12



**Modular Integrated
Curriculum 2K23**
Volume-04

MODULE

31

**ENDOCRINOLOGY &
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



THEORY			
CODE	SPECIFIC LEARNING OUTCOMES	DISCIPLINE	TOPIC
HYPOTHALAMIC AND PITUTARY DISORDERS			
EnR-En-001	Diagnose diabetes insipidus on the basis of characteristic symptoms and clinical presentation. Differentiate between central and nephrogenic types. Outline the investigations to reach the diagnosis. Formulate a management plan for central and nephrogenic cases. Identify potential complications if left untreated.	Endocrinology/ Medicine	Diabetes Insipidus
EnR-En-002	Describe the clinical features of precocious puberty. Differentiate between its central and peripheral causes. Develop a stepwise diagnostic and management plan for a patient presenting with precocious puberty.	Gynaecology / Endocrinology	Precocious Puberty
EnR-En-003	Diagnose delayed puberty based on absence of secondary sexual characteristics by expected age. Explain the pathophysiology of GnRH deficiency. Develop a stepwise diagnostic and management plan for a patient presenting with precocious puberty.	Gynaecology / Endocrinology	Delayed Puberty
EnR-En-004	Identify the clinical features of dwarfism due to growth hormone deficiency. Explain the underlying mechanisms leading to the disorder. List the investigations for diagnosing the condition. Plan the management of dwarfism caused by growth hormone deficiency. Identify possible complications associated with untreated cases.	Endocrinology/ Medicine	Dwarfism
EnR-En-005	Diagnose gigantism on the basis of characteristic signs and symptoms.	Endocrinology/ Medicine	Gigantism & Acromegaly

	Describe its etiology. Outline investigation and discuss management plan. Identify potential complications. Diagnose acromegaly on the basis of characteristic signs and symptoms. Differentiate acromegaly from gigantism. Describe the underlying etiology. Outline the approach to investigation and discuss management strategies. Enlist complications.		
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
EnR-En-007	Diagnose SIADH based on signs and symptoms. Explain underlying mechanism leading to the development of SIADH. List the investigations and plan management. List the potential complications of SIADH.	Endocrinology/ Medicine	SIADH
EnR-En-008	Describe the role of melatonin in regulating circadian rhythm. Recognize clinical implications of melatonin deficiency or excess. Outline the use of melatonin supplements in clinical practice.	Endocrinology /Medicine	Pineal Dysfunction and Sleep Disorders
EnR-Ph-009	Classify hypothalamic and pituitary hormones and state their functions. Describe the pharmacokinetics of pituitary and hypothalamic hormones.	Pharmacology	Hypothalamic and Pituitary Hormones

	Explain the mechanism of action of these hormones. Discuss the pharmacological effects of pituitary and hypothalamic hormones. Identify their clinical uses. List potential adverse effects. Describe drug interactions involving hypothalamic and pituitary hormones. Enlist contraindications for the use of hypothalamic and pituitary hormones.		
EnR-Ph-010	Enlist prolactin antagonists (dopamine agonists). Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications.	Pharmacology	Prolactin Antagonists (Dopamine Agonists)
EnR-Ph-011	Describe the pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications of oxytocin.	Pharmacology	Oxytocin
EnR-Ph-012	Describe the pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications of vasopressin. Enumerate vasopressin antagonists and describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications.	Pharmacology	Vasopressin and Vasopressin Antagonists
THYROID AND PARATHYROID DISORDERS			
CODE	SPECIFIC LEARNING OUTCOMES	DISCIPLINE	TOPIC
EnR-En-013	Enlist causes of hypothyroidism. Discuss the pathophysiology of decreased thyroid hormone production. Identify the clinical features and complications of hypothyroidism. Interpret diagnostic tests of TSH, T₃, T₄.	Endocrinology /Medicine	Hypothyroidism

	Outline treatment plan and long-term follow-up.		
EnR-En-014	Explain the pathophysiology of excessive thyroid hormone production and its systemic effects. Enlist etiology of hyperthyroidism. Explain the autoimmune mechanism and clinical triad of Graves' disease. Diagnose hyperthyroidism based on the symptoms and signs, laboratory and imaging diagnostic findings. Discuss medical and surgical management strategies. Explain the pathophysiology, precipitating factors, clinical features, and emergency management of thyroid storm. Explain the importance of long-term monitoring and patient education regarding medication adherence and follow-up.	Endocrinology /Medicine	Hyperthyroidism
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
EnR-Ph-016	Describe different thyroid preparations. Describe the pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications of thyroid preparations.	Pharmacology	Thyroid Preparations
EnR-Ph-017	Classify anti-thyroid drugs. Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications.	Pharmacology	Anti-Thyroid Drugs
EnR-Ph-018	Describe the Jod-Basedow phenomenon caused by iodides.	Pharmacology	Iodides and Related Phenomena

EnR-Ph-019	Explain the use of beta-blockers in the treatment of hyperthyroidism. Explain the rationale for the use of different drugs in thyroid storm.	Pharmacology	Adjuvant Drugs in Hyperthyroidism
EnR-En-020	Identify the clinical features of hyperparathyroidism. Interpret biochemical findings in hyperparathyroidism. Explain the pathophysiological basis of symptoms in relation to calcium and bone metabolism. Discuss the complications of untreated hyperparathyroidism. Outline the management plan.	Endocrinology/ Medicine	Hyperparathyroidism
EnR-En-021	Explain the causes of hypoparathyroidism. Describe the pathophysiology of hypocalcemia due to PTH deficiency. Identify clinical features such as tetany, Chvostek's and Trousseau's signs. Interpret laboratory findings. Outline acute and chronic management plan.	Endocrinology/ Medicine	Hypoparathyroidism
EnR-Ph-022	Enumerate vitamin D preparations. Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications.	Pharmacology	Vitamin D Preparations
EnR-Ph-023	Enumerate drugs used for the treatment of hypercalcemia. Describe their mechanism of action, clinical uses, and adverse effects (e.g., calcitonin, bisphosphonates, corticosteroids).	Pharmacology	Drugs Used in the Treatment of Hypercalcemia
EnR-Ph-024	Enlist bisphosphonates. Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications.	Pharmacology	Bisphosphonates

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
EnR-Ph-027	Classify oral antidiabetic drugs	Pharmacology	Oral Antidiabetic Drugs
EnR-Ph-029	Classify insulins. Describe the pharmacokinetics of different insulin preparations. Explain the mechanism of action of insulin. Describe the pharmacological effects and efficacy of insulin. Enumerate the clinical uses of insulin. Discuss adverse effects, drug interactions, and contraindications of insulin.	Pharmacology	Insulin

	Describe the concept and causes of insulin resistance.		
EnR-Ph-030	Classify sulfonylureas. Explain the mechanism of action of sulfonylureas. Enumerate their clinical uses. Describe their adverse effects.	Pharmacology	Sulfonylureas
EnR-Ph-031	Classify biguanides. Explain the mechanism of action of biguanides. Enumerate their clinical uses. Describe their adverse effects.	Pharmacology	Biguanides
EnR-Ph-032	Classify thiazolidinediones. Explain the mechanism of action of thiazolidinediones. Enlist their clinical uses and adverse effects.	Pharmacology	Thiazolidinediones
EnR-Ph-033	Classify alpha-glucosidase inhibitors and amylin analogues. Explain their mechanism of action. Enlist their clinical uses and adverse effects.	Pharmacology	Alpha-Glucosidase Inhibitors and Amylin Analogues
EnR-Ph-034	Classify incretin-based drugs and SGLT2 inhibitors. Explain their mechanism of action. Enumerate their clinical uses and adverse effects.	Pharmacology	Incretin-Based Drugs and SGLT2 Inhibitors
EnR-En-035	Explain the pathophysiology of insulinoma. Identify clinical features of hypoglycemia. Describe Whipple's triad and its diagnostic significance. Outline investigations and discuss management.	Endocrinology/ Medicine	Insulinoma
EnR-En-036	Explain the pathophysiology of glucagonoma. Diagnose glucagonoma based on its clinical presentation and specific diagnostic findings. Discuss its management plan.	Endocrinology/ Medicine	Glucagonoma
ADRENAL GLAND DISORDERS			
CODE	SPECIFIC LEARNING OUTCOMES	DISCIPLINE	TOPIC

EnR-En-037	Describe the pathophysiology of Cushing's Syndrome. Differentiate between Cushing's syndrome and Cushing's disease. Diagnose Cushing's syndrome based on key clinical features. Interpret relevant diagnostic investigations including cortisol levels and dexamethasone suppression test. Outline the principles of management, including surgical and medical options.	Endocrinology/ Medicine	Cushing's Syndrome
EnR-En-038	Explain the pathophysiology of adrenal insufficiency leading to Addison's disease. Diagnose Addison's disease based on key clinical presentation. Interpret diagnostic tests including serum cortisol, ACTH, and electrolyte levels. Outline the management plan.	Endocrinology/ Medicine	Addison's Disease
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.	Pathology/ Endocrinology	Tumors of the adrenal cortex and medulla

	Outline the principles of management, including surgical, medical, and supportive treatment approaches.		
EnR-Ph-041	Classify corticosteroids. Describe the pharmacokinetics, mechanism of action, pharmacological effects, clinical uses, adverse effects, drug interactions, and contraindications of corticosteroids. Justify the tapering off of corticosteroids to prevent adrenal suppression and withdrawal effects.	Pharmacology	Corticosteroids
EnR-Ph-042	Classify corticosteroid antagonists (e.g., receptor antagonists and synthesis inhibitors). Describe their pharmacokinetics, mechanism of action, pharmacological effects, clinical uses, adverse effects, drug interactions, and contraindications.	Pharmacology	Corticosteroid antagonists
EnR-Ph-043	Identify the clinical indications for Hormone Replacement Therapy (HRT) and evaluate its potential risks and benefits for post-menopausal women. Discuss the patient education aspects regarding HRT, including lifestyle modifications and alternative therapies. Enlist estrogen antagonists including SERMs and describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications.	Pharmacology	Hormone replacement therapy
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-En-045	Describe causes of Hyperprolactinemia. Explain the pathophysiology of hyperprolactinemia. Identify clinical presentation and interpret diagnostic tests. Outline management plan.	Endocrinology/ Medicine	Hyperprolactinemia
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-Gyn-047	Define female Subfertility and its significance in reproductive health Describe type of Subfertility (primary, secondary). Describe the common causes of female Subfertility, including ovulatory disorders, structural abnormalities, and endocrine issues. Discuss the impact of lifestyle factors on female fertility.	Gynaecology	Female Subfertility

EnR-Ph-048	Classify drugs used for treatment of subfertility. Enlist progesterone antagonists. Describe pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions and contraindications of progestogen antagonists. Enlist androgen and antiandrogen preparations Describe pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions and contraindications. Enumerate estrogen & progestogen preparations. Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions and contraindications. Classify Contraceptives. Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions and contraindications. Enlist estrogen antagonists. Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions and contraindications. Describe use of Clomiphene in treatment of Subfertility. Describe the use of AntiEstrogen (Letrozole) in the treatment of Subfertility. Tabulate differences between Clomiphene and Letrozole.	Pharmacology	Treatment of subfertility
EnR-Ph-049	Explain the pathophysiology of male subfertility, including the role of testosterone and other hormones. Discuss the clinical features associated with male subfertility and hypogonadism, including symptoms and signs.	Urology/ Endocrinology	Male Subfertility

	Enlist the investigations. Interpret the Semen Analysis parameter.		
EnR-Ph-050	Enumerate anabolic steroids. Describe pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions and contraindications of Testosterone	Pharmacology	Anabolic steroids
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).	Pathology	Benign and malignant ovarian tumors

	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.		
--	---	--	--

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 Mellitus on the basis of lab investigations.	Pathology	Lab investigations for Diabetes Mellitus
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

**Modular Integrated
Curriculum 2K23**
Volume-04

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



THEORY

DERMATOLOGY

CODE	SPECIFIC LEARNING OUTCOMES	DISCIPLINE	TOPIC
Derm2-001	Describe the morphological features of following skin lesions: Macule, Papule, Nodule, Plaque, Wheal, Vesicles and bullae, Pustule, Cyst, Scale, Crust, Fissuring, Erosion, Ulceration, Excoriation, Lichenification, Annular lesions, Discoid lesions, Atrophy, scar, and keloid. Describe and differentiate dermatological features including desquamation, burrow, comedone, telangiectasia, reticulate, petechiae, purpura, and ecchymosis.	Dermatology	Skin lesions
Derm2-002	Describe the etiology and mode of transmission of <i>Sarcoptes scabiei</i> . Identify clinical presentation of scabies Differentiate scabies from other pruritic dermatoses. Outline the treatment of scabies including preventive measures.	Dermatology/ Community medicine	Scabies
Derm2-003	Explain the etiology and types of lice infestation. Describe clinical presentation. Differentiate pediculosis from dandruff, scabies, and seborrheic dermatitis. Outline treatment strategies with preventive measures.	Dermatology/ Community medicine	Pediculosis
Derm2-004	Classify dermatitis. Enlist the common forms of endogenous and exogenous eczema.	Dermatology	Eczema/dermatitis
Derm2-005	Describe the etiology and predisposing factors of atopic dermatitis. Identify the clinical features. Differentiate atopic dermatitis from seborrheic dermatitis, scabies, and contact dermatitis on basis of clinical features. Outline treatment and preventive strategies.	Dermatology	Atopic Dermatitis

Derm2-006	Explain the etiology and role of Malassezia, sebum, immune factors. Identify clinical features of seborrheic dermatitis. Differentiate seborrheic dermatitis from psoriasis, atopic dermatitis, and pediculosis. Outline treatment and preventive strategies for relapse control.	Dermatology	Seborrheic Dermatitis
Derm2-007	Differentiate between irritant and allergic contact dermatitis in terms of etiopathogenesis, and clinical features. Identify the clinical features of contact dermatitis. Differentiate contact dermatitis from atopic dermatitis, urticaria, and scabies. Outline treatment plan and preventive measures.	Dermatology	Contact Dermatitis
Derm2-008	Describe the etiology and pathophysiology of urticaria. Identify clinical features. Differentiate urticaria from contact dermatitis, scabies, and drug reactions on basis of sign and symptoms. Outline emergency management for angioedema/anaphylaxis.	Dermatology/ Medicine	Urticaria
Derm2-009	Define bullous disorders. Classify immune-mediated bullous disorders. Explain the pathogenesis of: - Pemphigus vulgaris - Bullous pemphigoid - Dermatitis herpetiformis Describe the clinical presentation and lesion morphology of each disorder. Differentiate between these disorders on the basis of site, blister type, and mucosal involvement. Enlist appropriate diagnostic tests. Outline management plan. Enlist potential complications and their preventive measures.	Dermatology	Bullous disorders
	Define epidermolysis bullosa.	Dermatology	

	Explain the underlying molecular and genetic mechanisms leading to skin fragility in EB. Describe the clinical features and complications associated with EB. Outline the diagnostic approaches and principles of management.		
	Define infective bullous disorders. Classify them based on causative agents. Identify the etiological factors and common pathogens. Describe characteristic clinical features of major infective bullous disorders (bullous impetigo and staphylococcal scalded skin syndrome) with complications. Outline the principles of management.	Dermatology	
Derm2-010	Explain the etiopathogenesis of acne vulgaris. Identify the clinical features and types of acne lesions. Differentiate acne vulgaris from other acneiform eruptions. Outline the treatment plan including preventive and long-term management strategies. Explain mechanism of action and adverse effects of drugs used in acne.	Dermatology/ Pharmacology	Acne Vulgaris
Derm2-011	Describe the etiopathogenesis of psoriasis. Identify the clinical features and common variants. Outline treatment modalities with preventive and lifestyle strategies.	Dermatology	Psoriasis
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
Derm2-013	Differentiate erythema multiforme and erythema nodosum in terms of etiology, clinical features, morphology,	Dermatology	Erythema Multiforme and erythema nodosum

	distribution, associated conditions, and principles of management.		
Derm2-014	Identify drug causing Stevens–Johnson syndrome. Describe the characteristic signs and symptoms. Outline management plan.	Dermatology/ Pharmacology	Stevens–Johnson Syndrome (SJS)
Derm2-015	Describe toxic epidermal necrolysis with its pathophysiology. Identify the common causative drugs and triggers of TEN. Identify the hallmark clinical features including extent of epidermal detachment and systemic involvement. Identify complications of TEN and their impact on prognosis. Outline the principles of intensive treatment and supportive care in TEN.		Toxic Epidermal Necrolysis (TEN)
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.	Dermatology/ Microbiology	Acute bacterial skin infections
	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	
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.	Dermatology/ Microbiology	Chronic bacterial skin infections

	Describe the causative organism, transmission, and pathogenesis of leprosy. Identify the clinical spectrum of leprosy and cardinal signs of diagnosis. Explain the complications and deformities resulting from nerve involvement in leprosy. Outline the diagnostic approach and management principles.	Dermatology/ Microbiology	
Derm2-018	Describe the etiology and types of warts. Identify the clinical presentation of warts. Enlist the differential diagnosis. Outline the management options with preventive measures.	Dermatology	Viral skin infections
	Explain the etiology and mode of transmission of molluscum contagiosum virus. Identify the clinical features and distribution of molluscum contagiosum lesions. Differentiate molluscum contagiosum from warts, milia, and basal cell carcinoma on basis of clinical features. Discuss treatment options and prevention strategies.	Dermatology/ Microbiology	
	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.	Dermatology/ Microbiology	
	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	
Derm2-019	Describe the etiology of tinea. Discuss the clinical features of different types of tinea.	Dermatology	Fungal skin infections

	Differentiate tinea from eczema, psoriasis, seborrheic dermatitis, and candidiasis. Outline the diagnostic approach, treatment options, and preventive measures.		
	Explain the etiology of Pityriasis Versicolor and predisposing factors. Describe the clinical presentation. Differentiate pityriasis versicolor from vitiligo. Outline diagnostic tests and management plan.	Dermatology	
Derm2-020	Classify the types of leishmaniasis. Describe the clinical features of cutaneous, mucocutaneous, and visceral leishmaniasis. Enlist its complications. Outline the diagnostic methods, treatment options and preventive measures.	Parasitology/ Dermatology	Protozoal skin infection
Derm2-021	Define vitiligo and describe its epidemiology. Explain the underlying pathogenetic mechanisms. Describe its clinical features. Make differential diagnosis of hypopigmented skin lesions. Discuss the management options. Outline the psychosocial impact of vitiligo.	Dermatology	Pigmentation Disorders
	Define melasma and describe its etiology and epidemiology. Describe the clinical features with its treatment options. Describe adverse effects of de-melanizing agents.	Dermatology	
	Define albinism and explain its genetic basis. Describe the clinical features. Outline management plan.	Dermatology	
Derm2-022	Describe the role of sunscreen in protecting skin. Explain the importance of Sun Protection Factor (SPF) and choosing an appropriate SPF for daily use. Describe the correct method of applying sunscreen, including quantity, timing, and reapplication.	Dermatology	Use of sunscreen

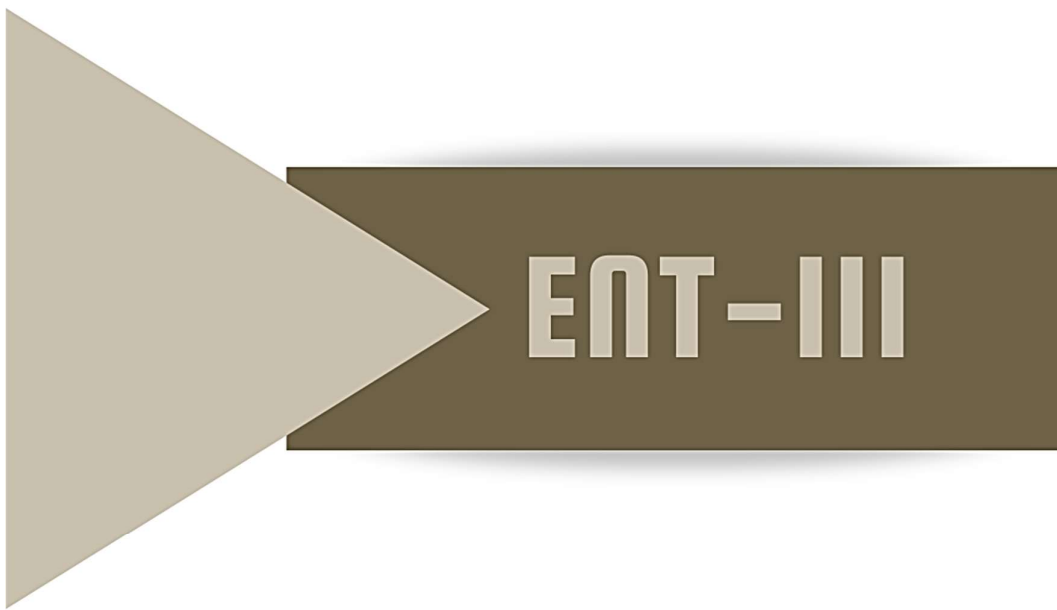
Derm2-023	Describe the clinical features of onychomycosis and paronychia. Describe nail changes in psoriasis and lichen planus. Identify common traumatic nail changes. Describe systemic associations of nail changes. Describe the importance of emollients and early antifungal treatment in nail care.	Dermatology/ Medicine	Disorders of nails
Derm2-024	Define alopecia areata. Explain the etiological and immunological basis of alopecia areata. Describe the clinical features and patterns of presentation. Outline the differential diagnosis. Discuss the management options for alopecia areata.	Dermatology	Disorders of hairs
	Define and classify androgenic alopecia. Explain the hormonal and genetic factors contributing to androgenic alopecia. Describe the clinical features and diagnostic criteria. Outline the management plan.	Dermatology	
	Define hirsutism and differentiate it from hypertrichosis. Identify the common causes of hirsutism. Outline the diagnostic workup for hirsutism. Discuss medical, cosmetic, and lifestyle-based management strategies.	Dermatology/ Medicine	
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	

MODULE NO.33 EYE & ENT-III



**Modular Integrated
Curriculum 2K23**
Volume-04



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
 Pathology
 Pharmacology
 Oncology
 Forensic Medicine

Syllabus



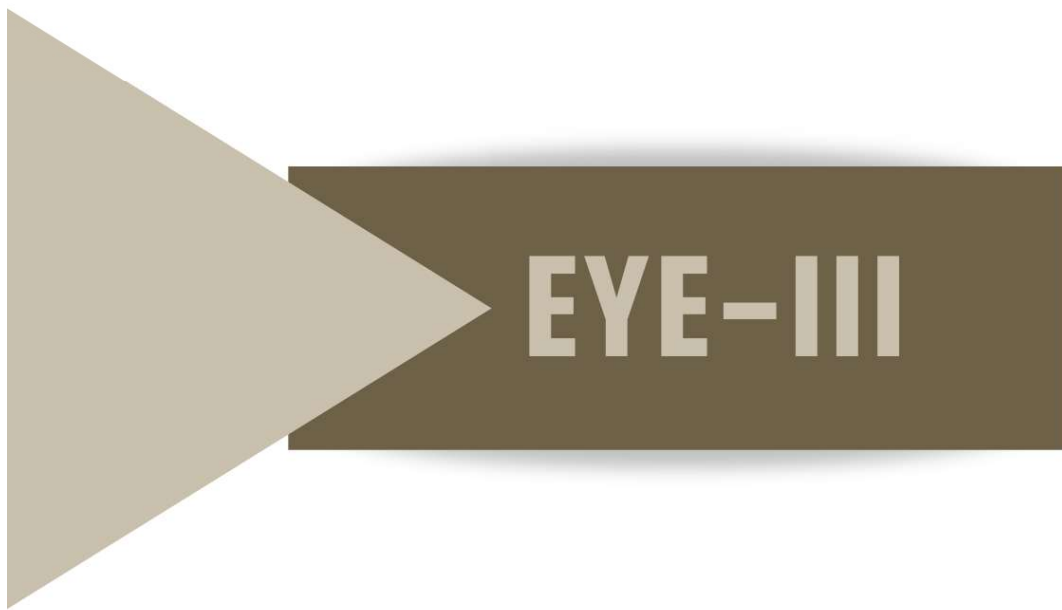
THEORY			
ENT-III (THROAT)			
CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC
ENT-Throat-001	Enlist cystic lesions of oral cavity. Discuss differential diagnosis of following cystic lesions of oral cavity and their treatment - Mucocele - Ranula - Dermoid cyst	ENT	Cystic lesions of oral cavity
ENT-Throat-002	Identify the clinical features and order investigations of sialadenitis, sialolithiasis, and sialiectasis. Outline the treatment plan for sialadenitis, sialolithiasis, and sialiectasis		Salivary Gland Disorders
ENT-Throat-003	Describe the etiology and risk factors of aphthous ulcer. Explain the morphological features of aphthous ulcer. Differentiate aphthous ulcers from other oral ulcers. Outline the management plan of aphthous ulcer.		Aphthous ulcer
ENT-Throat-004	Describe the etiology, predisposing factors, and clinical features of Vincent's angina. Differentiate Vincent's angina from diphtheria. Discuss the diagnostic approach, including clinical examination and smear findings. Enlist the complications associated with Vincent's angina. Outline the management plan of Vincent's angina.		Vincent's angina
ENT-Throat-005	Describe the clinical features, differential diagnosis, and management of leukoplakia and erythroplakia of the tongue.		Leukoplakia and erythroplakia
ENT-Throat-006	Describe the surgical anatomy of the nasopharynx, oropharynx, and hypopharynx. Identify important anatomical relations and structures at risk during surgery.	ENT/Anatomy	Surgical anatomy and physiology of pharynx

ENT-Throat-007	Describe predisposing factors and the clinical presentations and treatment of acute & chronic pharyngitis.	ENT	Pharyngitis
ENT-Throat-008	Enumerate the disorders that may present with a white patch or membrane over the tonsils. Identify the clinical features and order investigations required for diagnosis of diphtheria. Discuss the possible complications resulting from diphtheria and its prevention. Plan the management of faucial diphtheria.	ENT/Paediatrics	Membranous pharyngitis/ Diphtheria
ENT-Throat-009	Describe the clinical features of acute and chronic tonsillitis. Outline the treatment of acute & chronic tonsillitis. Enlist the indications and contraindications of tonsillectomy. Discuss the pre-operative preparation, post-operative care, and management of complications in tonsillectomy. Identify the clinical signs and symptoms of peritonsillar abscess and outline its management	ENT	Tonsillitis
ENT-Throat-010	Enlist the etiology of adenoid hypertrophy. Identify the clinical features and order the investigations required for diagnosis of adenoiditis. Describe the management of adenoiditis. Enlist the indications, contraindications and complications of adenoidectomy		Adenoids
ENT-Throat-011	Describe the clinical features, investigations, and surgical management of juvenile nasopharyngeal angiofibroma. Explain the clinical presentation, diagnostic work-up, and treatment of nasopharyngeal carcinoma.	ENT/Oncology	Neoplasms of nasopharynx
ENT-Throat-012	Define Plummer-Vinson syndrome and its classical triad.	ENT/Pathology	Plummer-Vinson syndrome

	Explain the pathophysiological role of iron deficiency in the development of mucosal atrophy and esophageal webs. Describe the clinical features and possible complications of PVS. Outline the management plan of PVS.		
ENT-Throat-013	Describe the causes, clinical features, and management of acute laryngitis. Discuss the etiology, clinical features, and treatment of chronic laryngitis.	ENT	Acute and chronic laryngitis
ENT-Throat-014	Describe the etiology and pathophysiology of acute laryngo-tracheobronchitis. Identify its clinical. Differentiate from other causes of stridor. Outline the management plan. Describe the emergency measure in acute laryngo-tracheobronchitis.	ENT/Paediatrics	Stridor/Croup
ENT-Throat-015	Enumerate the causes of vocal cord paralysis. Identify the clinical features of unilateral and bilateral abductor paralysis. Diagnose the unilateral and bilateral adductor paralysis on basis of clinical features. Discuss the principles of management of vocal cord paralysis. Explain the role of speech therapy in the management of vocal cord paralysis.	ENT	Hoarseness - vocal cord paralysis
ENT-Throat-016	Describe the etiology of vocal nodules. Explain the pathophysiology of vocal nodules. Identify the clinical features of vocal nodules. Outline the management principles of vocal nodules. Describe the etiology of vocal polyps. Explain the pathophysiology of vocal polyps. Recognize the clinical features of vocal polyps. Discuss the management of vocal polyps.		Hoarseness - Vocal nodules Vocal polyps

ENT-Throat-017	Describe the clinical presentation of acute Epiglottitis. Enumerate the complications of Acute Epiglottitis. Outline the principles of emergency management of acute epiglottitis with emphasis on airway protection. Describe the role of antibiotics and supportive care in Acute Epiglottitis.	ENT	Acute Epiglottitis
ENT-Throat-018	Enlist congenital disorders of Larynx . Describe the clinical features, diagnosis, and natural course of laryngomalacia. Discuss the presentation, complications, and management of juvenile recurrent laryngeal papillomatosis.		Congenital conditions of Larynx
ENT-Throat-019	Describe the etiology and predisposing factors of following neck infections: i. Cervical lymphadenitis and abscess ii. Cold abscess iii. Ludwig's angina iv. Parapharyngeal abscess v. Retropharyngeal abscess vi. Peritonsillar abscess Describe the clinical presentation of neck space infections including warning signs. Interpret investigations (laboratory and imaging) required for the diagnosis of neck infections. Formulate a management plan for neck space infections. Explain the potential complications of untreated neck infections.		Infections of Head and Neck Spaces
ENT-Throat-020	Enlist the common types and sources of aero-digestive tract foreign bodies. Describe the clinical presentation of a patient presenting with aero-digestive tract foreign bodies. Discuss the diagnostic approach in a patient with suspected aero-digestive tract foreign bodies.	ENT/ Emergency medicine	Aero-digestive tract foreign bodies.

	Outline the initial emergency measures definitive management of aero-digestive tract foreign bodies with possible complications of delayed diagnosis or mismanagement.		
ENT-Throat-021	Identify common signs and symptoms of laryngeal tumors. Describe appropriate investigations to confirm diagnosis Explain basic management options.	ENT	Laryngeal tumors
ENT-Throat-022	Enlist indications of tracheostomy Describe pre-procedure assessment and preparation. Outline the steps of tracheostomy. Describe postoperative care and monitoring. Identify common complications of tracheostomy.	ENT	Tracheostomy



MODULE RATIONALE

Ophthalmology is a vital medical specialty dedicated to the diagnosis, treatment, and prevention of eye diseases. It is essential for medical students to have a thorough understanding of the eye's basic anatomy, physiology, and pathology in order to manage common ocular conditions effectively. This module aims to equip medical students with the knowledge and clinical skills necessary to identify and manage a wide range of ophthalmic conditions frequently encountered in general practice and emergency settings.

MODULE OUTCOMES

- Identify common ophthalmic diseases and disorders encountered in OPD, IPD, multi-disciplinary and emergency settings.
- Apply fundamental clinical skills in the examination of the eye and adnexa, including visual acuity assessment and basic use of ophthalmic instruments.
- Formulate differential diagnosis and initial management plans for common ophthalmic conditions, including appropriate referral when necessary.
- Integrate knowledge of ophthalmic health into the broader context of systemic diseases and public health considerations.

SUBJECTS INTEGRATED IN THE MODULE

Medicine
Oncology
Pharmacology
Forensic Medicine
Rheumatology

Syllabus



THEORY			
EYE-III			
CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC
Eye3-001	Define and classify strabismus. Classify Concomitant (non- paralytic) squint Explain the causes and types of non-paralytic squint. Recognize the clinical presentation and diagnostic signs of non-paralytic squint. Plan a management strategy for non-paralytic squint, including medical and surgical correction.	Ophthalmology	Squint/ Strabismus
	Classify In-Concomitant (paralytic) squint. Describe the etiology and pathophysiology of paralytic squint. Identify the clinical features and diagnostic signs of paralytic squint. Differentiate paralytic/ In-Concomitant squint from non-paralytic/Concomitant squint based on history and examination. Outline the management plan for paralytic squint, including medical and surgical options. Describe the ocular manifestation of Myasthenia gravis.		
Eye3-002	Describe the underlying pathophysiology of papilledema in relation to raised intracranial pressure. List common causes of papilledema. Describe the clinical features of papilledema, including fundoscopic signs. List the differential diagnosis of papilledema. Discuss the principles of management of papilledema, including treating the underlying cause, reducing intracranial pressure, and preventing permanent vision loss.		Neuro-ophthalmology

	Describe the underlying pathophysiology of papilledema in relation to raised intracranial pressure. List common causes of papilledema. Describe the clinical features of papilledema, including fundoscopic signs. List the differential diagnosis of papilledema. Discuss the principles of management of papilledema, including treating the underlying cause, reducing intracranial pressure, and preventing permanent vision loss.	Ophthalmology	
	Define optic atrophy. Describe the etiology and classification of optic atrophy. Explain the underlying pathophysiology leading to optic nerve degeneration. Identify the clinical features and fundoscopic findings of optic atrophy. Discuss the relevant investigations used to diagnose optic atrophy. Formulate a differential diagnosis for optic atrophy.		
	Define optic neuritis. List the causes and types of optic neuritis. Identify the signs and symptoms of optic neuritis. Outline the key investigations including fundoscopy, visual field testing, MRI, and blood tests for systemic associations. Describe the principles of management of optic neuritis.		
Eye3-003	List the common causes and clinical features of oculomotor, trochlear, and abducens nerve palsies. Discuss the clinical significance of pupil involvement in oculomotor nerve palsy. Describe the ocular manifestations of facial nerve (VII) palsy such as lagophthalmos, impaired blink reflex, and exposure keratitis.		Visual pathways and visual field defects

	Identify ocular complications that may arise from cranial nerve palsies. Outline the management plan and strategies to protect the eye in these nerve palsies.		
Eye3-004	Describe the anatomical course of the visual pathway. Correlate lesions at different levels of the visual pathway with characteristic visual field defects. Differentiate common visual field defects based on lesion location.	Ophthalmology/ Emergency Medicine/ Forensic Medicine	Ocular trauma
Eye3-005	Describe the clinical manifestations of different types of ocular trauma. (burns, chemical injuries, blunt trauma, penetrating trauma) Discuss the early and late complications of ocular trauma. Describe the management plan for corneal and conjunctival foreign bodies. Describe the indications for referral of ocular injuries. Discuss the management plans for ocular burns and chemical injuries. Explain the medicolegal responsibilities of physicians in documentation, reporting, and evidence preservation (including photographs and medico-legal certificates) in cases of ocular trauma related to assault, accidents, and occupational injuries.	Ophthalmology/ Medicine	Systemic diseases
	Enlist the symptoms and signs of thyroid eye disease. Explain its underlying pathophysiology. Discuss possible complications of thyroid eye disease. Outline relevant investigations, including blood tests, eye-related tests, and imaging. Formulate a comprehensive treatment plan for a patient with thyroid eye disease, including medical treatment and ocular interventions.	Ophthalmology/ Nutrition	
	Describe the ocular manifestations of vitamin A deficiency including night blindness, conjunctival and	Ophthalmology/ Medicine	

	corneal xerosis, Bitot's spots, keratomalacia, xerophthalmia. Identify the methods of diagnosis including clinical signs. Discuss the management plan and prevention of ocular disease due to vitamin A deficiency.		
	Describe the ocular manifestations of hypertension and diabetes. Differentiate the vascular changes in hypertensive retinopathy from those in diabetic retinopathy Describe stages of hypertensive retinopathy Describe stages of diabetic retinopathy Outline the management plan for ocular complications in hypertension and diabetes.	Ophthalmology/ Rheumatology	
Eye3-006	Enlist the common collagen vascular diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, ankylosing spondylitis, Wegener's granulomatosis) associated with ocular involvement. Describe the ocular manifestations of collagen vascular diseases.	Ophthalmology/ Oncology	Ophthalmic Oncology
	Describe epidemiology and risk factors of retinoblastoma. Identify the common clinical signs and symptoms of retinoblastoma. Explain the diagnostic methods used in retinoblastoma, including fundoscopy and imaging. Discuss the available treatment options (enucleation, chemotherapy, radiotherapy, focal therapy, and intra-arterial chemotherapy). Outline the prognosis and long-term outcomes of retinoblastoma. Counsel patients and families regarding genetic counseling, risk of bilateral disease, and the importance of early detection.	Ophthalmology/ Oncology	

Eye3-006	Identify the risk factors and common signs and symptoms of (eyelid tumors including basal cell carcinoma, squamous cell carcinoma, sebaceous gland carcinoma, melanoma) ocular squamous cell carcinoma. Discuss the treatment plan for eyelid tumors-	Ophthalmology/ Pharmacology	Ophthalmic Therapeutics
Eye3-007	Antibiotics, Antivirals, and Antifungals: - List commonly used topical and systemic agents in ophthalmology. - Describe their indications in eye infections (e.g., conjunctivitis, keratitis, endophthalmitis). - Discuss contraindications, dosage forms, and common adverse effects. Local Anesthetics: - Explain the mechanism of action of ocular local anesthetics. - Identify their clinical uses (e.g., tonometry, minor surgical procedures). - Recognize adverse effects and precautions in ophthalmic use. Fluorescein Dye: - State the uses of fluorescein in ophthalmology (e.g., corneal ulcer, angiography). - Recognize adverse reactions and limitations. Mydriatics and Cycloplegics: - Differentiate between mydriatics and cycloplegics. - Discuss indications for their use (e.g., refraction, uveitis, fundoscopy). - Identify contraindications (e.g., narrow-angle glaucoma) and adverse effects. Corticosteroids: - Describe the role of topical steroids in ocular inflammation.	Ophthalmology	Diagnostics

	Discuss indications, contraindications, and potential complications (e.g., cataract, glaucoma, infections).		
	Explain the principle and clinical applications of visual field testing. Describe the procedure and diagnostic value of fundus fluorescein angiography (FFA). Explain the principle of optical coherence tomography (OCT) and its role in anterior segment, retinal and optic nerve disorders. Describe the principle of corneal topography and its applications in corneal and refractive conditions. Explain the principle and use of ultrasound A scan Describe the principle of ultrasound B scan and its applications in diagnosing posterior segment diseases.		





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						

A graphic for Section 04. It features a blue semi-circle with a dark grey border and a drop shadow, containing the number '04' in a dark grey outline font. Below the semi-circle is a solid grey rectangular box containing the word 'Section' in a white, cursive script font.

04

Section

VOLUME:04

C-FRC

**CLINICAL-FOUNDATION
ROTATION CLERKSHIPS**



**Modular Integrated
Curriculum 2K23**



YEAR-04



GUIDELINES FOR DEVELOPING CFRC 4th YEAR

University of Health Sciences has designed a very detailed and comprehensive CFRC- Logbook document which provides a proper guideline for all the institutions to design and implement the logbooks for Clinical rotations as these log books will be assessed in Annual Examination. For reference **“Modular Integrated Curriculum 2K23 Final Version, Volume: 1 & Volume: 2”** at UHS official website: Downloads/Syllabus MBBS /BDS (<https://www.uhs.edu.pk/Downloadslink.php>).



MODULE NO:24	
COMMUNITY MEDICINE	
Code	COMMUNITY VISIT
	Skills/Task
CFRC 4-CM- 001	Factory/hospital visit to observe occupational health hazards: • Observe the occupational health hazards associated with industrial processes. • Observe safe practices and educate the workers during the factory visit (e.g., use of PPE, adherence to safety instructions). • Observe and report potential sources of environmental and occupational hazards. (<i>Report writing</i>)
CFRC 4-CM- 002	Training and implementation of data collection for research: • Collect data according to the research question (e.g., patient demographics, symptoms, community health practices). • Record the data accurately. • Ensure ethical practices during data collection (e.g., taking consent, maintaining confidentiality).
CFRC 4-CM- 003	Data analysis hands on training: • Analyze data using SPSS software. • Compile a structure survey report.
CFRC 4-CM- 004	School visit: Record anthropometric measurements (height, weight, BMI, mid–upper arm circumference) of school-going children. Recognize environmental and social factors at school that may influence nutrition (e.g., hygiene, school meals, junk food availability). Create awareness among children and teachers on healthy eating practices and prevention of malnutrition. Assess knowledge and practices of adolescent school girls regarding menstrual health.

	Identify common menstrual health problems (e.g., dysmenorrhea, poor hygiene practices, anemia). Counsel adolescent girls on menstrual hygiene, nutrition, and breaking myths/taboo. Document and report findings from the school visit.
--	--

FAMILY HEALTH	
Code	Skills/Task
CFRC 4-FH-001	Presenting complaint: Headache • Assess a patient with headache through focused history, general and neurological examination, relevant ENT/sinus examination, and identification of psychosocial or lifestyle triggers. • Provide symptomatic treatment and counsel patients regarding lifestyle modifications, trigger avoidance, and non-pharmacological measures. (<i>under supervision</i>) • Identify and refer urgently when warning signs are present.
CFRC 4-FH-002	Presenting complaint: Fever • Take a focused history of fever (onset, duration, pattern, associated symptoms, and relevant risk factors). • Perform examination, noting vitals, hydration status, pallor, and other systemic findings. • Measure and interpret body temperature using a thermometer. • Provide initial symptomatic management counseling, and guidance on when to seek urgent medical care. (<i>under supervision</i>) • Administer I/M and S/C injection under supervision or practice on manikin.
CFRC 4-FH-003	Paediatrics History Taking Skills • Take history of unwell child including feeding, immunization, and developmental milestones. • Measure and interpret weight, height, and mid upper arm circumference. • Plot growth chart and calculate body mass index. • Counsel parents of an unwell child by explaining the condition, treatment plan, home care, and warning signs. (<i>under supervision</i>)
CFRC 4-FH-004	Presenting complaint: Generalized weakness and weight loss • Take history related to weakness and weight loss. • Perform general physical examination including assessment for pallor, lymph node enlargement, and thyroid gland. • Measure and record body mass index. • Interpret capillary blood glucose levels.

CFRC 4-FH- 005	Presenting complaint: Urogenital symptoms • Take a focused history of urogenital symptoms (dysuria, frequency, hematuria, abnormal discharge, pain, fertility concerns, menstrual/obstetric history where relevant). • Perform an abdominal examination relevant to urinary and reproductive complaints. • Perform and interpret a urine dipstick test accurately. • Identify red flag features requiring urgent referral. (<i>under supervision</i>)
CFRC 4-FH- 006	Common skin lesions • Inspect common skin lesions presented in OPD. • Perform wound dressing and care. (<i>under supervision</i>)
CFRC 4-FH- 007	Geriatrics History Taking Skills • Take history from an elderly patient of presenting complaints, comorbidities, medications, nutrition, and social support. • Perform basic functional assessment of mobility and activities of daily living. • Counsel patients and caregivers regarding lifestyle modification, nutrition, medication adherence, and fall prevention. • Identify red flag issues that need urgent attention or referral. • Apply splint or bandage for simple falls or sprains. (<i>under supervision</i>)

MODULE NO: 25	
GIT & NUTRITION-II	
Code	Clinical Skills/Task
CFRC 4- GIT2- 001	Prepare and present gastrointestinal cases (gastroesophageal reflux disease, acid peptic disease, peptic ulcer, gastritis, irritable bowel syndrome, inflammatory bowel disease (Crohn's disease and ulcerative colitis), hepatitis, cirrhosis of liver, gallstones, acute pancreatitis, colorectal carcinoma) for case-based discussion, including history, examination, differentials, and initial management.
CFRC 4- GIT2- 002	Abdominal examination Perform abdominal examination including inspection, palpation, percussion, and auscultation, and interpret findings.
CFRC 4- GIT2- 003	Nasogastric tube insertion Observe and assist in nasogastric (NG) tube insertion and feeding. Demonstrate and narrate the method to check NG tube patency and placement confirmation.
CFRC 4- GIT2- 004	Digital rectal examination Demonstrate digital rectal examination (DRE) and interpret findings.
CFRC 4- GIT2- 005	Ascites Perform clinical examination to detect ascites (shifting dullness, fluid thrill). Interpret clinical findings to differentiate ascites from other causes of abdominal distension.
CFRC 4- GIT2- 006	Investigations Interpret common laboratory and ultrasound investigations in gastrointestinal diseases, including LFTs, viral hepatitis profile, serum amylase/lipase, stool tests, and abdominal ultrasound findings.
CFRC 4- GIT2- 007	Liver palpation Perform palpation of the liver to determine its size, consistency, tenderness, and surface characteristics. Identify clinical signs of hepatomegaly. Differentiate between normal and abnormal liver findings on palpation.

CFRC 4- GIT2- 008	Spleen palpation Examine and palpate the spleen to assess size, tenderness, and clinical abnormalities.
CFRC 4- GIT2- 009	GI endoscopy & colonoscopy Observe the procedure of upper GI endoscopy and colonoscopy. Observe the indications, steps of patient preparation, and abnormal findings.
CFRC 4- GIT2- 010	Prescription writing Write prescriptions for following: i. Acid Peptic Disease ii. GERD iii. Acute Infectious Diarrhea iv. Acute Gastroenteritis with Vomiting v. Irritable Bowel Syndrome (IBS) vi. Constipation vii. Hemorrhoids
CFRC 4- GIT2- 011	Peritoneal tap Observe the procedure of a peritoneal tap, including patient preparation, aseptic technique, and procedural steps.
CFRC 4- GIT2- 012	Counsel patients on diet, nutrition, and lifestyle modifications relevant to common gastrointestinal disorders.

Disclaimer:

The clinical rotation schedule may be adjusted by each institution according to their available resources; however, the annual practical and clinical examinations will be conducted in the sequence of topics outlined below.

MODULE NO: 26	
EYE & ENT-I	
Code	EAR
	Skills/Task
CFRC 4- Ear1- 001	• History taking • Take focused ENT history in a structured and concise manner. • Clinical Examination Skills • Inspect and palpate external ear. • Examine for mastoid tenderness and fistula test. • Perform otoscopic examination. • Perform a basic hearing assessment (whisper test, free-field voice test). • Perform tuning fork tests (Rinne's test, Weber's test, Absolute Bone Conduction test). • Assess cranial nerves related to ear pathology (VII, VIII). • Interpret audiogram and tympanogram (basic level). • Identify red flags in ear symptoms (sudden hearing loss, vertigo with neurological signs, facial nerve palsy). • Perform aural toilet / ear syringing for wax and foreign body removal under supervision. • Demonstrate first aid measures for acute ear trauma / bleeding. • Narrate the steps of initial management in acute mastoiditis and suspicion of complications. • Identify Nystagmus using clinical methods.

	• Assess Vestibulo cerebellar function using clinical methods. • Counselling • Explain common ear procedures to patients in simple language. • Take informed consent. • Counsel patients on preventive measures.
Code	EYE-I
	Skills/Task
CFRC 4- Eye1- 001	• Ophthalmic History Taking • Take focused ophthalmic history in a structured and concise manner • Eye examination skills and procedures • Perform visual acuity assessment (near, far, pinhole, color vision, Amsler grid). • Inspect and palpate the adnexa. • Inspect the anterior segment and anterior segment diseases of the eye with torch light. • Demonstrate eversion of the upper eyelid. • Observe regurgitation test for lacrimal passage patency. • Perform distant direct ophthalmoscopy • OPD clinical examination instruments/ machines • Observe the functioning of the autorefractometer and slit lamp.



MODULE NO:27	
NEUROSCIENCES-II	
Code	Skills/Task
CFRC 4- NS2- 001	History taking Take and document history from patients presenting with stroke, epilepsy, headache/migraine, Parkinson's disease, or meningitis/encephalitis.
CFRC 4- NS2- 002	GCS Level Assess and record the patient's level of consciousness using the Glasgow Coma Scale.
CFRC 4- NS2- 003	Cranial Nerves Examine the function of all 12 cranial nerves.
CFRC 4- NS2- 004	Motor examination Perform a complete motor examination, including assessment of muscle strength, tone, bulk, reflexes, and coordination.
CFRC 4- NS2- 005	Sensory examination Perform sensory examination including touch, pain, temperature, vibration, and proprioception.
CFRC 4- NS2- 006	Cerebellar function tests Examine cerebellar function through coordination tests, balance, and fine motor tasks (e.g., finger-to-nose, heel-to-shin, Romberg test).
CFRC 4- NS2- 007	Gait Patterns Observe and assess different gait patterns (normal, hemiplegic, Parkinsonian, ataxic) and posture abnormalities, and document findings.
CFRC 4- NS2- 008	Deep tendon reflexes Assess deep tendon reflexes, superficial reflexes, and pathological reflexes.
CFRC 4- NS2- 009	Meningeal signs Examine a patient of meningitis for meningeal signs, including neck stiffness, Kernig's sign, and Brudzinski's sign.
CFRC 4-	Higher cortical functions

NS2-010	Assess higher cortical functions including language, memory, attention, calculation, praxis, and neglect.
CFRC 4- NS2-011	Lumbar puncture Observe and narrate the steps of lumbar puncture procedure, including patient positioning, landmark identification, needle insertion, and CSF collection with proper handling and labeling with indications, contraindications, potential complications, and precautions for lumbar puncture.(See Annexure I)

ANNEXURE-I

Collection, Transport and Storage of CSF Specimen for Culture & Sensitivity

Collection of CSF Specimen

Cerebrospinal fluid must be collected by an experienced medical officer. It must be collected aseptically to prevent organisms being introduced into the central nervous system. The fluid is usually collected from the arachnoid space. A sterile wide-bore needle is inserted between the fourth and fifth lumbar vertebrae and the CSF is allowed to drip into a dry sterile container. A ventricular puncture is sometimes performed to collect CSF from infants.

Advise the laboratory before performing a lumbar puncture so that staff are prepared to receive and examine the specimen *immediately*.

1. Take two sterile, dry, screw-capped containers and label one No. 1 (first sample collected, to be used for culture), and the other No. 2 (second sample collected, to be used for other investigations).
2. Collect about 1 ml of CSF in container No. 1 and about 2–3 ml in container No. 2.
3. *Immediately* deliver the samples with a request form to the laboratory.

Note: Collection of CSF from patient with suspected trypanosomiasis

When the CSF is to be examined for trypanosomes, it is usually collected after treatment to kill the trypanosomes in the blood has been started. This will avoid the accidental introduction of the parasites into the central nervous system.

Transport of CSF to the Microbiology Laboratory

1. Transport CSF specimen immediately to the Microbiology laboratory within half an hour of collection.
2. Maintain the temperature of the specimen at room temperature (20-25°C) and maximum at 37°C
3. Use a sterile, leak proof container with tight fitting lid to prevent leakage and contamination.
4. Never Refrigerate/Freeze the specimen

Note: A delay in examining CSF reduces the chances of isolating a pathogen. It will also result in a lower cell count due to WBCs being lysed, and to a falsely low glucose value due to glycolysis. When trypanosomes are present, they will be difficult to find because they are rapidly lysed once the CSF has been withdrawn.

MODULE NO:28	
PSYCHIATRY & BEHAVIORAL SCIENCES	
Code	Skills/Task
CFRC 4- PsyB hS- 001	Take a detailed psychiatric history from patients with common psychiatric disorders. (Depressive disorder, bipolar affective disorder, schizophrenia, generalized anxiety disorder, panic disorder, obsessive–compulsive disorder (OCD), alcoholism, ADHD, autism, personality disorders, acute suicidal ideation/attempt, acute aggression or violent behavior) Apply the non-pharmacological interventions in clinical settings (information care, breaking bad news, crisis intervention, disaster management, conflict resolution, progressive muscle relaxation & breathing exercises, and informed consent). Provide differential diagnosis based on history, MSE, and relevant investigations. Formulate a preliminary diagnosis and outline management plan.
CFRC 4- PsyB hS- 002	Mental state examination Perform mental state examination (MSE), assessing appearance, behavior, speech, mood, thought, perception, cognition, insight, and judgment. Interpret findings of MSE in common psychiatric conditions.
CFRC 4- PsyB hS- 003	Suicide risk assessment Conduct suicide risk assessment. Propose immediate management steps.
CFRC 4- PsyB hS- 004	Aggression/violence risk assessment Identify and assess risk of aggression or violence in psychiatric patients. Propose immediate management steps.
CFRC 4- PsyB hS- 005	Rapport building Establish rapport with patients and their families in a respectful, non-judgmental manner. Demonstrate empathetic listening and supportive communication in sensitive situations.
CFRC 4- PsyB hS- 006	Demonstrate respect for patient autonomy and confidentiality in psychiatric practice. Apply ethical principles in managing patients with impaired capacity or in involuntary treatment settings.

MODULE NO:29	
RENAL-II	
Code	Skills/Task
CFRC 4- Re2- 001	Take and record detailed history of patients with nephrotic syndrome, CKD, UTI, hematuria, urinary retention, BPH, or urolithiasis.
CFRC 4- Re2- 002	Examination of kidneys and urinary bladder Inspect for abdominal distension, edema, and skin changes. Palpate kidneys and bladder for size, tenderness, and masses. Percuss kidneys and bladder for enlargement or fluid. Auscultate renal arteries (bruits).
CFRC 4- Re2- 003	Urine sample collection, storage, and transport Narrate proper techniques for urine sample collection, including midstream clean-catch urine, catheterized urine samples, and pediatric urine bag collection, and correctly label and transport the specimens. (See Annexure II)
CFRC 4- Re2- 004	Renal imaging Interpret ultrasound report for hydronephrosis, stones, polycystic kidneys. Interpret CT findings for obstruction, calculi, renal masses.
CFRC 4- Re2- 005	Fluid balance Measure and interpret fluid balance: urine input/output monitoring.
CFRC 4- Re2- 006	Urinary catheterization Observe/Assist in urinary catheterization. Identify indications, contraindications, and precautions (for adult and pediatric patients).
CFRC 4- Re2- 007	Counsel patients regarding disease, management plan, lifestyle modifications, treatment adherence.

Annexure II

Collection, Transport and Storage of Urine Specimen for Routine Analysis, Culture & Sensitivity

Patient Instructions for Urine Specimen Collection

Before Collection

- Wash your hands thoroughly with soap and water.
- Use the sterile urine container with intact seal provided by the laboratory.
- Do not touch the inside of the container or lid.
- If you are menstruating, inform the laboratory staff before collection.

For Midstream clean-catch Urine Specimen

For Female Patients

- Wash your hands.
- Clean the genital area from front to back using clean water or antiseptic wipes (if provided).
- Spread the labia apart with one hand.
- Begin urinating into the toilet.
- After a few seconds, without stopping the flow, place the sterile container in the stream to collect the midstream portion.
- Remove the container before finishing urination.
- Close the lid tightly and ensure it does not leak.

For Male Patients

- Wash your hands.
- Retract the foreskin (if present) and clean the tip of the penis with clean water or antiseptic wipes.
- Begin urinating into the toilet.
- After a few seconds, place the sterile container in the urine stream to collect the midstream portion.
- Remove the container before finishing urination.
- Close the lid tightly.

Labeling and Documentation

- Each container must be clearly labeled with:
- Patient's full name and Identification number
- Date and time of collection
- Type of specimen (e.g., midstream, catheter, 24-hour)
- The accompanying laboratory requisition form should include test requests, clinical information, and collector's name.

Catheter Collections

Urine samples from indwelling catheters (i.e. foley catheters) are not recommended, since it is not possible to differentiate the bacteria that have colonized the catheter from potential pathogens. Urine samples should not be obtained from urine bags. Foley catheter tips are unsuitable for culture because they are invariably contaminated with urethral or colonizing organisms.

Suprapubic Aspiration

Suprapubic aspiration is reserved exclusively for neonates and small children. Suprapubic aspiration is indicated in the following conditions:

1. For infants, young children, or unconscious patients who cannot provide a clean-catch specimen
2. When catheterization is contraindicated or unsuccessful

Transport of Urine Specimen to the Laboratory

- The specimen should be transported to the laboratory as soon as possible, preferably within 1 hour of collection. Since Urine itself serves as a good medium for multiplication of bacteria, early transport of urine specimen to the laboratory is very important to ensure accuracy and reliability of tests results
- Delay can lead to false positive results for infection or increased bacterial counts that do not reflect the true condition of the patient.
- Use a sterile, clean, leak-proof, and properly labeled container.
- All specimens should be placed in a sealed biohazard transport bag with a separate pocket for the requisition form.
- Avoid exposure to direct sunlight or heat, as this can alter chemical and microbiological results.
- If Immediate Transport is not possible, refrigerate the specimen at 2–8°C to prevent bacterial overgrowth and chemical changes.
- Do not freeze the sample unless specifically required for certain tests.
- For urine culture, if a delay of more than 1 hour is expected, use a preservative, such as boric acid (0.1g/10ml) in the collection container to maintain specimen integrity for up to 24 hours.

Transport conditions for Specific Tests

Test Type	Transport Condition	Maximum Delay Before Processing
Routine Urinalysis	Room temp (≤ 1 hr) or 2–8°C	Within 2 hours
Urine Culture	2–8°C (or with boric acid 0.1g/10ml)	Within 24 hours

Precautions

- Handle all specimens as potentially infectious and follow biosafety precautions.
- Do not accept leaking, unlabeled, or contaminated specimens.

- Maintain a proper chain of custody if required for medicolegal or research samples.

MODULE NO:30	
EYE & ENT-II	
Code	NOSE
	Skills/Task
CFRC 4- Nose- 001	• History taking Obtain a focused history from patients presenting with nasal complaints • Clinical examination/management skills • Perform external examination of nose and paranasal sinuses by inspection and palpation. • Assess nasal patency and olfaction. • Perform anterior and posterior rhinoscopy and identify normal and abnormal findings. • Identify nasal septum deviations, turbinate hypertrophy, polyps, and foreign bodies. • Observe and assist in nasal packing for epistaxis. • Observe and assist in foreign body removal from nose. • Identify nasal fractures and their immediate and definite management. • Identify red flag symptoms requiring urgent referral (proptosis and sudden vision changes, high fever with sinusitis, massive epistaxis). • Observe and assist in surgery of nasal polypectomy, septoplasty, and FESS. • Counselling • Explain common nasal procedures to patients in simple language. • Take informed consent. • Counsel patients on preventive measures. • Medicolegal Aspects of ENT trauma • Perform medicolegal examination and documentation of ear, nose, and throat injuries, correlating clinical findings with possible mechanisms and medicolegal implications. (See Annexure III)

Code	Skills/Task
	EYE-II
CFRC 4- eye2- 001	• Eye examination skills and procedures • Perform confrontation test to assess the visual field. • Perform digital tonometry. • Perform pupillary light reflexes (direct and consensual, swinging light reflex). • Operation theatre exposure • Apply eye bandage, eye pad, and protective shield correctly • Perform eye washing in chemical injuries. • Observe steps of cataract and other surgeries • Demonstrate correct patient positioning and draping in ophthalmic surgery. • Demonstrate the correct technique for scrubbing, gowning, and gloving. • Ophthalmic Emergencies • Perform rapid eye examination in emergency cases like acute congestive glaucoma. • Exposure to Ophthalmic lasers procedures Observe YAG Laser, Argon Laser • Observe/Perform retinoscopy to elicit and interpret the reflex for determining refractive error.

ANNEXURE-III

Medico-Legal Examination Protocol

1. Authority for Examination

- Patient may be: Brought by Police under relevant provisions of CrPC for medico-legal examination, Self-reporting patient /by relative presenting directly to Emergency.
- In self-reporting cases: Immediate intimation to Police is mandatory.
- Life-saving treatment always takes precedence over medico-legal formalities.

2. Consent

- Written informed consent must be obtained: From patient if conscious and oriented, from legal guardian if patient is unconscious, minor, mentally incapacitated.
- *Consent is implied in emergencies where delay threatens life.*

3. Jurisdiction

Examination should preferably be conducted within the notified medico-legal jurisdiction of the hospital.

- Jurisdiction is secondary to life-saving management.
- If outside jurisdiction: Examination and treatment should proceed, Jurisdictional objection may be mentioned in remarks.

4. Identification of Patient

- Confirm identity through CNIC / B-Form, Hospital registration slip, Police papers (if brought by police). Note: name, age, gender, father's name, address. Record two permanent identification marks, if possible.

5. Biodata: Name, age (exact / approximate), gender, occupation, address, contact number, police station & FIR number (if applicable).

6. History (Alleged)

Record in patient's own words: Date and time of alleged incident, place of occurrence, manner of injury (assault / accident / fall / blast etc.), number of assailants, type of weapon(s) used. any history of: loss of consciousness, bleeding from nose/ear/mouth, vomiting. past medical or surgical history (if relevant)

Avoid conclusions; write "*alleged history as narrated by patient*".

7.Perform General Physical Examination:

- i. **Examination of Clothes (If Applicable):** Presence or absence noted, describe: type of clothing, blood stains (fresh/dried), tears or cuts. clothes should be: preserved, sealed, handed over to police with memo.

ii. Examination of Injuries (General Principles)

Each injury should be described separately: anatomical location, type (abrasion, bruise, laceration, fracture, burn), size (length × breadth × depth), shape and margins, fresh or healing, bleeding present or absent, swelling / tenderness, open or closed, any signs of repair/healing, photographs with scale should be taken where possible.

- iii. **Nature of Injury (As Per Law)** Mention name of injury (not PPC section). If Kept Under Observation (KUO): Clearly mention reasons (awaiting radiology / specialist opinion).

- iv. **Kind of Weapon:** Opinion based on: Injury pattern, History, Examination findings. Weapon may be: Blunt, Sharp-edged, Firearm, Explosive (blast), Chemical (corrosive). Mention: Direct evidence (Primary injury pattern), Indirect evidence (radiology, specialist input).

v. Duration of Injuries

Give probable duration based on: freshness, healing changes, clot formation, radiological findings. Mention as: "within hours", "within 24 hours", "more than ____ days"

- vi. **Fabricated / Self-Inflicted Injuries:** Opinion should be given only if strongly suggestive, with reasons: Easily accessible body parts, Uniform, superficial injuries, Absence of corresponding damage to clothes, Inconsistent history.

Avoid labelling unless evidence is convincing.

Specific Maxillofacial & ENT Injuries

A. Nasal Bone Fracture: swelling, tenderness, epistaxis, deformity, crepitus, x-ray / CT scan, displaced or non-displaced, direction of force, probable duration, ENT / radiology opinion.

B. Tympanic Membrane Rupture

- Cause: slap, blast injury, pointed object.
- Otoscopic findings
- ENT / Audiologist opinion: Conductive or sensorineural hearing loss, Temporary or permanent deafness

C. Dental Injuries: number of teeth involved, exact anatomical position, fractured / avulsed / dislocated, associated injuries: gums, lips, tongue, buccal mucosa, weapon usually blunt. Referral: Dental / Odontologist, ENT if required.

D. Mandible / Maxilla Fracture: With or without teeth involvement, swelling, tenderness, malocclusion, restricted movements, displaced or undisplaced. Imaging: X-ray, CT scan, ENT / Maxillofacial / Neuro-surgery opinion. Rule out base of skull fracture, especially in penetrating oral injuries.

Investigations: X-ray, CT scan, Audiometry (if indicated), Laboratory tests (if required)

Final Medico-Legal Opinion: Nature of injuries, Probable weapon, Probable duration, K/UO or final opinion, whether injuries are: Accidental, Assaulted, Self-inflicted (with reasons, if applicable).

✓ Key Reminder;

- Never delay treatment for paperwork
- Never mention PPC sections
- Avoid legal conclusions

- Document clearly and objectively
- Always seek senior / consultant opinion when in doubt



MODULE NO: 31	
ENDOCRINOLOGY & REPRODUCTION-II	
Code	Skills/Task
CFRC 4- EnR2- 001	Obtain and document clinical history and physical findings in patients thyroid disorders, Diabetes Mellitus, Cushing's syndrome, menstrual disorders, and infertility.
CFRC 4- EnR2- 002	Thyroid examination Examine the thyroid gland for size, shape, nodules, tenderness, and movement with deglutition. Assess for signs of hypothyroidism and hyperthyroidism through pulse rate, tremor, reflexes, and eye signs. Interpret thyroid function tests (T_3 , T_4 , TSH).
CFRC 4- EnR2- 003	Adrenal Function Assessment Perform examination for adrenal disorders, including assessment of blood pressure (lying and standing), skin pigmentation, and muscle power.
CFRC 4- EnR2- 004	Diabetic Foot Examination Perform foot examination in a diabetic patient to assess for neuropathy, ulcers, and vascular insufficiency.
CFRC 4- EnR2- 005	Bedside Glucose Monitoring Measure and interpret capillary blood glucose levels using a glucometer during patient assessment. Demonstrate urine testing for glucose and ketone bodies using dipsticks.
CFRC 4- EnR2- 006	Diagnostic Tests for Diabetes Mellitus Interpret laboratory results of fasting, postprandial, random blood glucose, HbA1c, and oral glucose tolerance tests in relation to normal reference ranges and diagnostic criteria for diabetes mellitus.
CFRC 4- EnR2- 007	Insulin Administration Demonstrate proper insulin administration technique using a syringe or insulin pen. Counsel the patient on insulin handling, injection sites, foot care, and dietary compliance.

CFRC 4- EnR2- 008	Assessment of Calcium Imbalance Perform bedside assessment for calcium imbalance (Chvostek's and Trousseau's signs).
----------------------------	---

MODULE NO:32	
DERMATOLOGY	
	Skills/Task
CFRC 4- Derm- 001	Take history of the patients with acne vulgaris, eczema, psoriasis, fungal infections, bacterial infections, scabies, urticaria, warts, vitiligo, herpes zoster, or pediculosis.
CFRC 4- Derm- 002	Identification of skin lesions Identify and differentiate skin lesions in patients.
CFRC 4- Derm- 003	Use of Magnification in Dermatological Examination Demonstrate the use of magnifying glass in examination of a patient with dermatological disease.
CFRC 4- Derm- 004	Use of Wood's lamp in Dermatological Examination Demonstrate the use of Wood's lamp in examination of a patient with dermatological diseases.
CFRC 4- Derm- 005	Skin biopsy Observe the steps of performing a skin biopsy.
CFRC 4- Derm- 006	Microscopic Examination for Fungal Infections Demonstrate the preparation and microscopic examination of skin/nail scrapings for fungal infection.
CFRC 4- Derm- 007	Skin Scraping for Scabies Perform the preparation and microscopic examination of skin scrapings for scabies mite.
CFRC 4- Derm- 008	Skin Therapeutic procedures Observe and describe the steps of common therapeutic procedures including electrosurgery, cryosurgery, phototherapy, and intralesional injections.
CFRC 4-	Assist in electrosurgical procedures.

Derm-009	
CFRC 4-Derm-010	Phototherapy Assist in the preparation and patient counseling for phototherapy.
CFRC 4-Derm-011	Use of topical medication Counsel patients regarding proper use of topical medication, particularly topical anti-scabies medication and topical steroids.
CFRC 4-Derm-012	Safe Use of Topical Skin Products Counsel patients regarding hazards of whitening creams and topical self-medication.
CFRC 4-Derm-013	Demonstrate the ability to counsel patients with stigmatizing skin conditions with empathy, focusing on disease understanding, treatment adherence, and psychosocial support.

MODULE NO:33	
EYE & ENT-III	
Code	THROAT
	Skills/Task
CFRC 4- Throat-001	• History taking • Take a focused history from patients presenting with pharyngeal and laryngeal complaints • Clinical examination/management skills • Identify trismus using clinical methods. • Inspect the oral cavity, pharynx, and laryngeal area. • Perform indirect laryngoscopy. • Palpate neck. • Examine cranial nerves IX, X, XI, XII. • Perform inspection, palpation, and auscultation of neck lumps. • Palpate for laryngeal crepitus and tracheal deviation. • Observe and narrate the steps of endotracheal intubation. • Observe and assist in tracheostomy, cricothyroidotomy. • Observe and assist in tonsillectomy. • Identify warning symptoms and signs of airway obstruction requiring urgent intervention. • Identify and describe the use of common ENT instruments used in both outpatient and operative settings. • Demonstrate back blow technique for foreign body airway obstruction on a mannequin. • Protocols for Collection, Transport and Storage of Nasopharyngeal/Throat/Ear swab for Culture & Sensitivity. (See Annexure IV)
Code	EYE-III
	Skills/Task
CFRC 4-	• Eye examination skills and procedures • Perform a squint examination. (Hirschberg test, cover–uncover test.

eye3-001	Extra ocular movements). • Perform II, III, IV, VI and VII cranial nerve examinations. • Operation theatre exposure • Observe in first aid management of ocular trauma. • Integration with systemic illnesses • Identify ocular findings of Thyroid eye disease. • Eye diagnostics machines • Observe OCT, B scan, Perimetry. • Counselling • Counsel for different vision threatening, congenital, chronic, genetic eye diseases • Medicolegal Aspects of eye trauma (Forensic Medicine) Describe the medicolegal implications of ocular trauma with proper documentation, and reporting of evidence collection, preservation, and dispatch. • Assess the extent of injury (life threatening or otherwise). • Identify manner (self-inflicted, fabricated, homicidal, suicidal or non-suicidal), dating, causative weapon/agent, and impairment from injury for legal implications. • MLC report (as per Punjab Government) should be timely, credible, factual, and relevant. • Issuance of report to police/relatives. • Application of Qisas & Diyat law.
----------	---

ANNEXURE IV

Collection, Transport and Storage of Nasopharyngeal/Throat Swab for Culture & Sensitivity

The **collection and transport of a Nasopharyngeal Swab/Throat swab** is a critical step in diagnosing respiratory infections, including those caused by bacteria (e.g., *Streptococcus pyogenes*) and viruses (e.g., SARS-CoV-2, Influenza). Proper technique ensures accurate test results.

Patient Preparation:

1. Explain the procedure to the patient.
2. Have the patient blow their nose if there's excessive mucus.
3. Position the patient with their head tilted slightly back.

Collection Procedure:

1. Perform hand hygiene and put on PPE.
2. Open the swab package without touching the swab tip.
3. Gently insert the swab into one nostril, aiming **straight back (not upwards)** along the nasal floor.
4. Advance the swab until resistance is felt (5–7 cm in adults).
5. Rotate the swab gently for 5–10 seconds to absorb secretions.
6. Slowly withdraw the swab.
7. Immediately place the swab into the transport medium (Viral Transport medium VTM) and secure the cap.

Throat Swab:

1. Explain the procedure to the patient and obtain informed consent.
2. Ask the patient to tilt their head back and open their mouth wide.
3. Use a tongue depressor to hold down the tongue for better visualization.
4. Swab the tonsillar area and posterior pharynx:
 - i. Avoid touching the tongue, cheeks, or teeth.
 - ii. Swab both tonsils (or tonsillar pillars) and the posterior pharyngeal wall.
 - iii. Use a gentle but firm motion; rotate the swab to collect epithelial cells and secretions.
5. Withdraw the swab carefully without contaminating it.

Transport and Storage

- Insert the swab immediately into the transport medium (Amies Transport Medium/VTM)
- Break off the stick at the scored point (if applicable) to fit the tube.
- Seal the container tightly.
- Label the sample clearly with: Patient name, Date of birth, Time and date of collection, Test requested
- Place the tube in a biohazard bag with a requisition form in the outer pocket.
- Transport to the Microbiology laboratory promptly: Ideally within 2 hours. If delay is expected, store at **2–8°C** (refrigerated) and transport within 48–72 hours.

Developed by

Prof. Sumera Ehsan

HOD Medical Education
University of Health Sciences Lahore

Dr. Anam Zahra

Assistant Professor Medical Education
University of Health Sciences Lahore

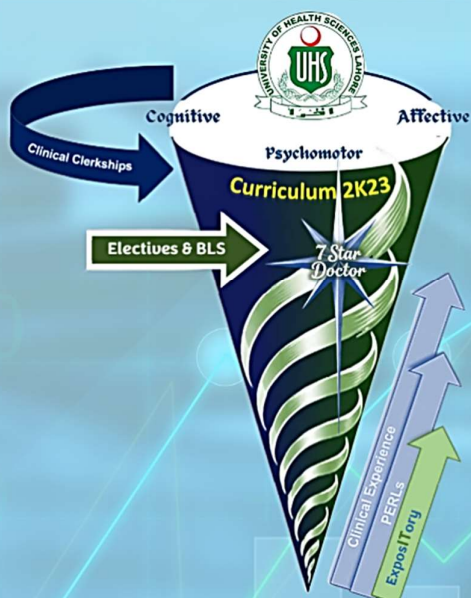




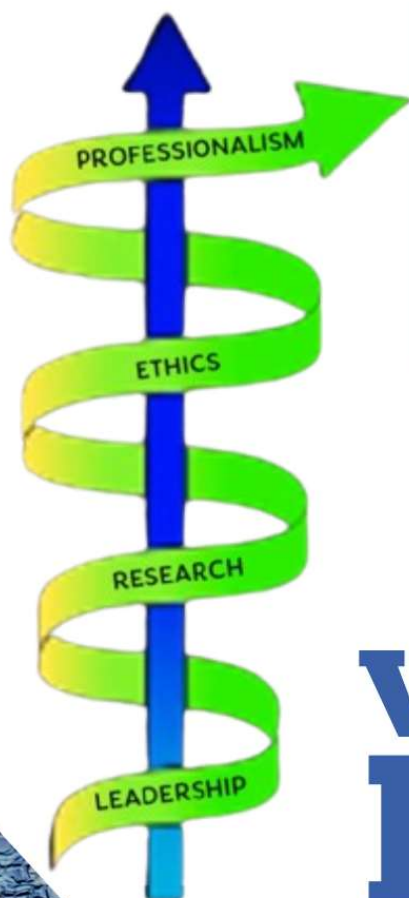
University of Health
Sciences Lahore

Modular Integrated Curriculum 2K23 MBBS Year-04

YEAR-4



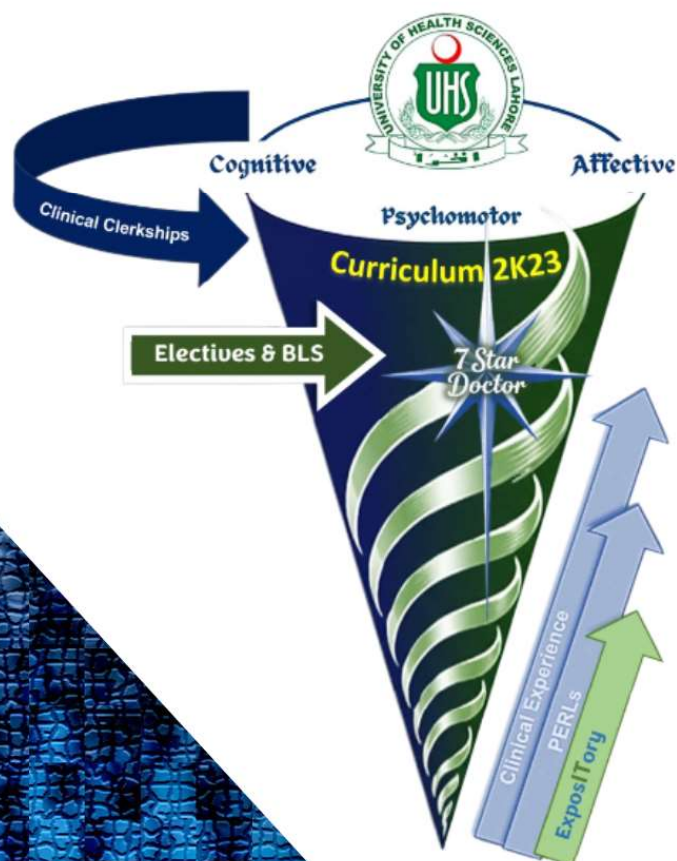
PERLS



Modular Integrated Curriculum 2K23

MBBS Year-4

Volume-4 PERLs-4



PROFESSIONALISM			
Block	Topic	Learning Objectives	Teaching mode/ Task
X	Social accountability	Discuss the concept of social accountability in healthcare, focusing on the responsibility of healthcare professionals to address the community's health needs and contribute to public well-being.	Students presentations on said topics.
	Addressing a local health issue as health professional	Analyze a local health issue and formulate a concise action plan describing how healthcare professionals can contribute to addressing it.	Students presentations on said topics.
	A Professional Doctor	Demonstrate a professional doctor-like persona by adopting appropriate clinical attire, maintaining confident and respectful body language, and communicating with patients and colleagues clearly, empathetically, and ethically.	-
XI	Mental Health of Doctors	Identify everyday stressors faced by healthcare professionals Discuss the Importance for maintaining mental well-being as a healthcare professional Explore strategies to manage stress, prevent burnout, and promote resilience in the demanding healthcare field.	Interactive lecture
	Compassion and Empathy in Health Profession	Discuss the importance of compassion and empathy in patient care and how these qualities enhance the patient-provider relationship and improve health outcomes.	

		Describe strategies for building empathy and compassion, e.g. active listening, perspective-taking, mindfulness training, and reflective practice.	
XII	Providing information for Elective Procedures	Provide accurate and clear information to patients regarding elective procedures, ensuring informed understanding of indications, benefits, risks, alternatives, and post-procedure expectations.	Interactive lecture/small group discussion
		Evaluate a clinical scenario in maternal or neonatal care, identifying how patient-centred care principles were applied to ensure the patient's preferences and needs were respected throughout the treatment process.	Students presentations on said topics.

ETHICS			
Block	Topic	Learning Objectives	Teaching mode/ Task
X	Principles of Community Ethics	Learn the ethical principles that guide community health practices, including respect for autonomy, justice, and fairness in allocating health resources.	Students presentations on said topics.
		Evaluate an ethical dilemma in community healthcare (e.g., vaccination distribution or resource allocation) and propose a solution based on ethical principles.	Students presentations on said topics.
	Organ Transplant Ethics	Describe ethical principles involved in organ transplantation, including issues related to patient autonomy, consent, allocation of scarce resources, and cultural/religious perspectives on organ donation.	Interactive lecture
	Equitable Access to Care	Discuss the ethical principles of equitable access to eye care services, focusing on the challenges and responsibilities of providing fair healthcare to all patients, regardless of socio-economic status, geographic location, or cultural background.	Interactive lecture
		Case study of successful equitable access to care.	Case based discussion
XI	Autonomy in dialysis, Renal transplant ethics	Analyze a case study for the ethical principles of autonomy as they relate to patient decision-making in dialysis and renal transplantation, including the challenges and implications of these principles in clinical practice	Case based discussion

	Informed Consent and Patient Autonomy	Describe ethical principles of informed consent and patient autonomy in ENT care, focusing on ensuring patients are fully informed and empowered to make decisions about their treatment.	Case based discussion
		Analyze a case about preprocedural informed consent.	
XII	Ethical Issues in Infertility & Abortions	Understand the ethical challenges surrounding infertility treatments and abortion, including patient autonomy, religious and cultural considerations, and the ethical responsibilities of healthcare providers.	Interactive lecture/ case based discussion
		Analyze cases related to infertility or abortion, identifying the ethical dilemmas involved, such as patient autonomy, consent, and cultural or religious beliefs, and propose ethical solutions based on professional guidelines.	
	Autonomy in cosmetic surgery, consent in elective procedures	Critically evaluate case studies involving autonomy and consent in cosmetic surgery and elective procedures, analyzing the ethical dilemmas that arise and proposing solutions to enhance patient autonomy and informed consent processes.	Interactive lecture/ case based discussion

RESEARCH			
Block	Topic	Learning Objectives	Teaching mode/ Task
<i>*Research (R) in the PERL curriculum will be delivered by the Department of Community Medicine as a longitudinal component from the first to the fourth year of the MBBS program. At the end of the fourth year, students' research projects will be assessed through a dedicated PERL station.</i>			
X	Data collection	Collect data in field/clinical settings. Apply quality control during data collection.	Group work
	Data Management using Excel/SPSS	Perform data entry, and basic analysis using software. Enter and manage data using Excel/SPSS basics. Explain basics of descriptive statistics (mean, median, mode, SD, rates). Interpret outputs (frequencies, charts, p-values, CI, chi-square, t-test). Discuss the principles of inference and significance.	Interactive lecture/ hands on training
XI	Research manuscript writing	Write a complete scientific article (Introduction, Methods, Results, Discussion).	Group work (dedicated time slot in timetable to complete the task in current block)
XII	Proofreading and submission of research article	Prepare tables, graphs, and reference lists using referencing software.	Group work under supervision of supervisor
		Revise and proofread drafts with peer and mentor feedback.	
		Select a relevant journal. Submit research to a journal or conference. Prepare and deliver an oral/poster presentation at institutional/research day.	

LEADERSHIP			
Block	Topic	Learning Objectives	Teaching mode/ Task
X	Professional Identity Formation	Explore professional identity formation through the lens of the PMDC 7-Star Doctor framework, reflecting on the essential roles of a healthcare professional and conducting a self-assessment of progress in these areas.	Interactive lecture
		Perform a self-rating based on their current professional development, identifying areas for growth in the PMDC 7-star Doctor Framework.	
XI	Digital Transformation in Healthcare	Explore the impact of digital transformation in healthcare, including the roles of telemedicine, digital health tools, AI, and the importance of data privacy in modern healthcare delivery.	Student presentations
	Public Trust and Leadership in Society	Explore the role of healthcare professionals as leaders in society, focusing on how building public trust is essential for effective leadership and the responsibilities of healthcare professionals in maintaining this trust.	
		Explore the role of healthcare professionals as leaders in society, focusing on how building public trust is essential for effective	

		leadership and the responsibilities of healthcare professionals in maintaining this trust.	
		Analyze a case where public trust in healthcare leadership was challenged, identifying key leadership strategies that could rebuild trust and strengthen the healthcare professional's role in society, identifying key leadership strategies that could rebuild trust and strengthen the healthcare professional's role in society.	Case based discussion/ student presentations
XII	Role Modelling/ Mentoring Session VIII	Participate in a mentoring session where they will discuss their strengths and weaknesses with their mentor, receive feedback, and collaboratively create an action plan for personal and professional development	Mentoring session

Developed by

Dr. Noor-i- Kiran Naeem
HOD Medical Education
ABWA Medical College, Faisalabad

Prof. Dr. Sumera Ehsan
HOD Medical Education
University of Health Sciences Lahore

Volume-04



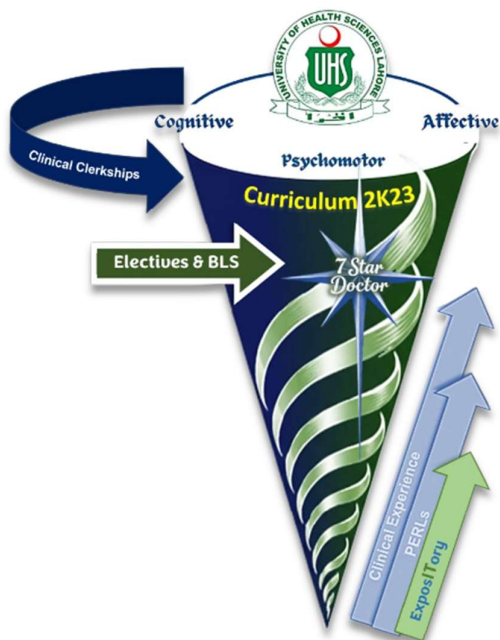
STUDENT PORTFOLIO

YEAR-04





Curriculum 2K23 Year-04



MODULE: COMMUNITY MEDICINE & FAMILY HEALTH II

DATE FROM: _____

DATE TO: _____

CHECKED BY: _____

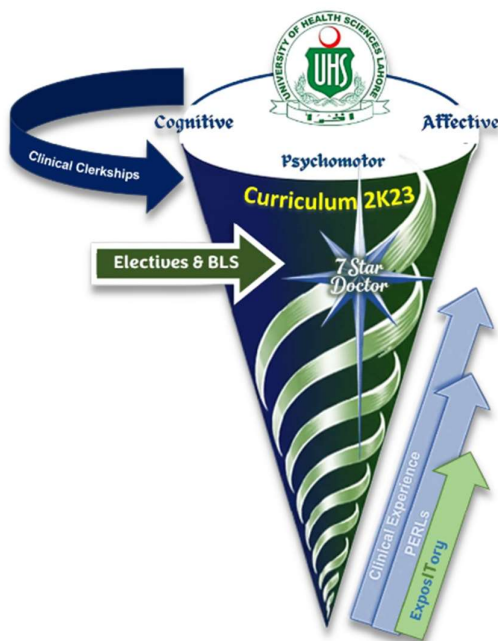
Roll No:	
Assignment Topic:	
Date:	
Submit a reflective case analysis of an ethical dilemma in community healthcare, discussing the principles of community ethics and how they guided your proposed solution.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Evidence of submitting a completed ethical approval application for your research project to your assigned Research Mentor.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Submit a self-assessment based on the PMDC 7-Star Doctor competencies. Reflect on your strengths and areas for improvement in each role, and propose a personal action plan for further development in the areas where you feel least confident	
Facilitator Remarks:	



Curriculum 2K23 Year-04



MODULE: GIT & NUTRITION-II

DATE FROM: _____

DATE TO: _____

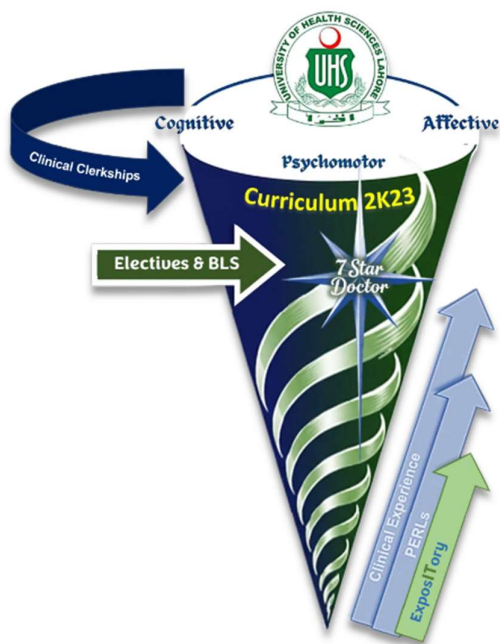
CHECKED BY: _____

Roll No:	
Assignment Topic:	
Date:	
Submit a case analysis on the ethical issues surrounding an organ transplant scenario. Discuss how principles like fairness, consent, and cultural or religious views were considered in the decision-making process	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Household Survey Evidence	
Facilitator Remarks:	



Curriculum 2K23 Year-04



MODULE: ENT & EYE-I

DATE FROM: _____

DATE TO: _____

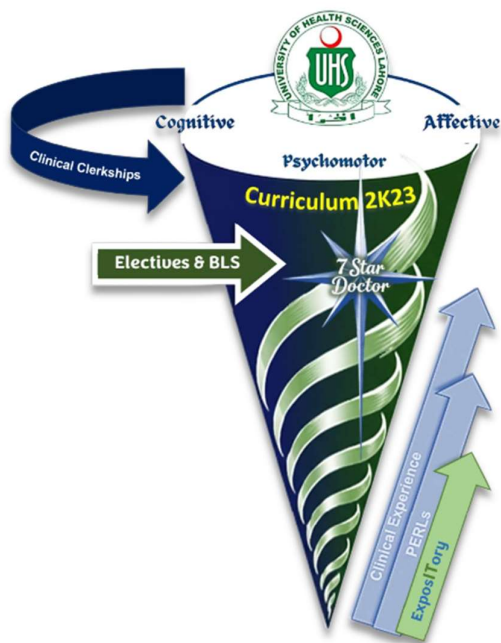
CHECKED BY: _____

Roll No:	
Assignment Topic:	
Date:	
Submit a case reflection where you observed or practised obtaining informed consent in an ENT scenario. Discuss how patient autonomy was respected and any challenges faced in ensuring the patient was fully informed.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Evidence of Data Analysis /Interpretation report submission to Research Mentor	
Facilitator Remarks:	



Curriculum 2K23 Year-04



MODULE: NEUROSCIENCES-II

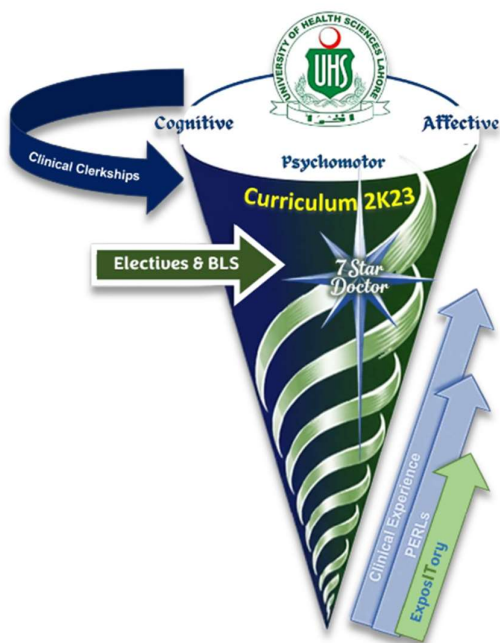
DATE FROM: _____

DATE TO: _____

CHECKED BY: _____



Curriculum 2K23 Year-04



MODULE: PSYCHIATRY & BEHAVIORAL SCIENCES

DATE FROM: _____

DATE TO: _____

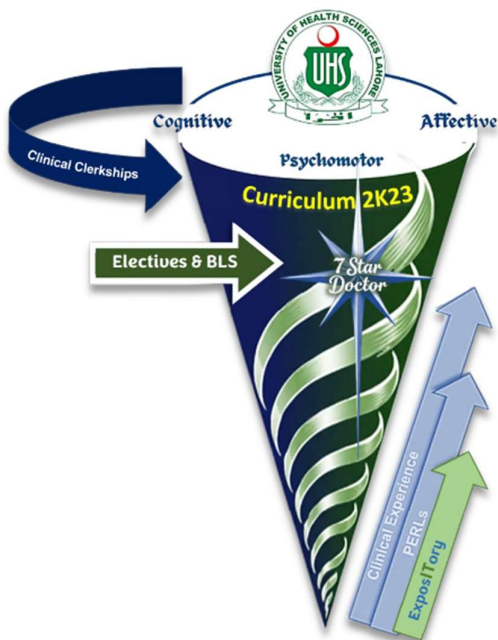
CHECKED BY: _____

Roll No:	
Assignment Topic:	
Date:	
Submit a reflection on self-assessment validated tools for stress: Perceived Stress Scale (PSS), COPE Inventory, and Professional Quality of Life Scale (ProQOL)	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Evidence: Drafted Informed consent sheet for your research.	
Facilitator Remarks:	



Curriculum 2K23 Year-04



MODULE: RENAL-II

DATE FROM: _____

DATE TO: _____

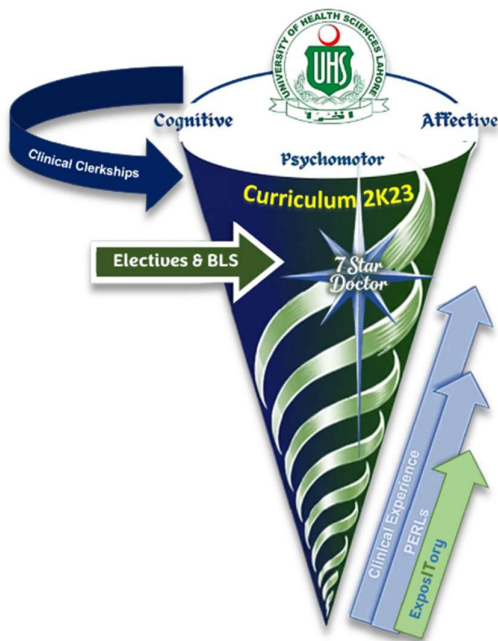
CHECKED BY: _____

Roll No:	
Assignment Topic:	
Date:	
Submit a patient information sheet regarding renal dialysis, ensuring all risks, benefits, and alternatives and informed consent are covered.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Submit a video recording of your research presentation along with a reflective essay. In the essay, discuss your approach to organizing the presentation, how you engaged your audience, and what you learned from the feedback received	
Facilitator Remarks:	



Curriculum 2K23 Year-04



MODULE: ENT & EYE-II

DATE FROM: _____

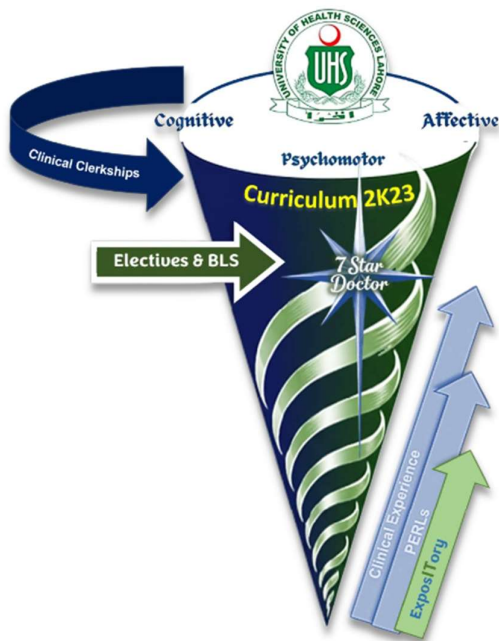
DATE TO: _____

CHECKED BY: _____

Roll No:	
Assignment Topic:	
Date:	
Submit a reflective essay or presentation discussing a case where public trust in healthcare was tested. Outline strategies healthcare leaders could use to restore and maintain trust, and the role of ethical leadership in society	
Facilitator Remarks:	



Curriculum 2K23 Year-04



MODULE: ENDOCRINOLOGY & REPRODUCTION-II

DATE FROM: _____

DATE TO: _____

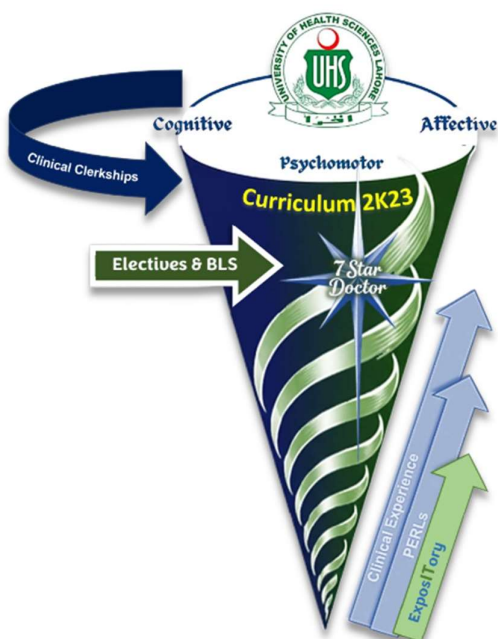
CHECKED BY: _____

Roll No:	
Assignment Topic:	
Date:	
Submit a Research Manuscript for your research.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Submit a reflective case analysis discussing the ethical issues surrounding a case of infertility treatment or abortion. Focus on how healthcare providers can navigate these challenges while respecting patient autonomy, legal considerations, and cultural sensitivities	
Facilitator Remarks:	



Curriculum 2K23 Year-04



MODULE: DERMATOLOGY

DATE FROM: _____

DATE TO: _____

CHECKED BY: _____

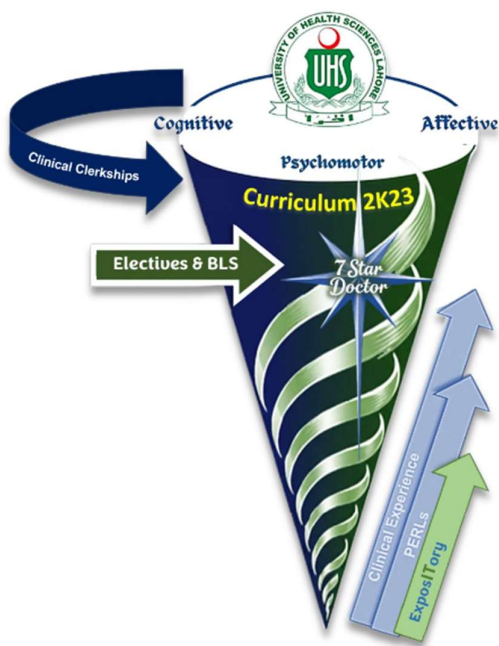
Roll No:	
Assignment Topic:	
Date:	
Submit a reflective analysis of a case involving autonomy in cosmetic surgery or consent in an elective procedure. Discuss how ethical principles were applied or challenged, the impact on patient care, and strategies for improving the informed consent process.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Submit a summary of your mentoring session, including feedback, areas identified for improvement, and the action plan you developed with your mentor to enhance your professional growth.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
As a team, create a simple poster or video presentation on how you managed team dynamics to achieve project goals. Focus on key takeaways and provide basic recommendations for effective team leadership in healthcare settings.	
Facilitator Remarks:	



Curriculum 2K23 Year-04



MODULE: EYE & ENT-III

DATE FROM: _____

DATE TO: _____

CHECKED BY: _____

Roll No:	
Assignment Topic:	
Date:	
Submit the key factors in success of providing equitable access to care based on Case Study.	
Facilitator Remarks:	

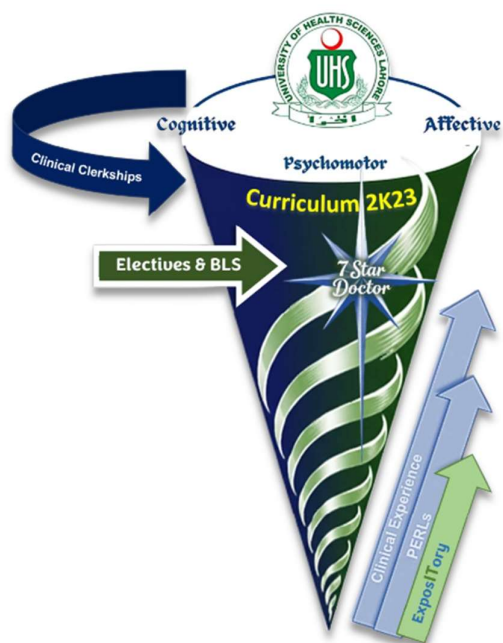
Roll No:	
Assignment Topic:	
Date:	
Evidence of submitting Final Proposal to Research Mentor.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Evidence of Obtained Ethical Approval Attached	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Evidence of Obtained Ethical Approval Attached Submit a summary of your mentoring session, including feedback, areas identified for improvement, and the action plan you developed with your mentor to enhance your professional growth.	
Facilitator Remarks:	



Curriculum 2K23 Year-04



MODULE: Expository Writing IV
Capstone in Expository Writing & Advanced Research IT
Tools

DATE FROM: _____

DATE TO: _____

Roll No:	
Assignment Topic:	Abstract and Manuscript Preparation
Date:	
Attach a reflective entry detailing the process, challenges faced in condensing research, and how feedback was incorporated into the final version.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	Short Communication or Letter to the Editor
Date:	
Include a completed short communication piece or a letter to the editor addressing a current medical or community issue. Demonstrate the process from idea generation to final submission.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	Patient Education Material
Date:	
Attach a colored scanned copy of patient education brochures or leaflets created with digital tools like Canva or Microsoft Publisher. Ensure these materials are clear, informative, and patient-friendly.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	Letter to Editor Group Project
Date:	
Work collaboratively on a group project to write and submit a letter to the editor. Use online tools (e.g., Google Docs) to show collaborative writing.	
Facilitator Remarks:	





**Modular Integrated
Curriculum 2K23
MBBS Year-04**

EXPOSITORY

Volume: 04

Modular Integrated

Curriculum 2K23



Module Rationale

To integrate Expository Writing with an Introduction to Information Technology (IT) course for undergraduate medical students, we can align the IT skills taught each year with the writing tasks and objectives. The aim is to enhance students' digital literacy and writing skills, which is crucial for modern medical practice.

This integrated spiral of Expository Writing and IT ensures that as students advance in their medical education, they also develop digital literacy skills. These skills complement their writing abilities and prepare them for modern medical practice, where digital communication, research, and data management are essential. By the end of the 4-year program, students will be proficient in writing and using technology to support their work as healthcare professionals.

Year 4: Capstone: Medical Expository Writing and Scholarly Projects + IT: Advanced Research and Publishing Tools

THEORY

Code	Subject: Expository writing & IT		Total Hours =10
	Specific Learning Outcome	Integrating Disciplines	Topics
EXP-O4	Expository Writing Focus: 1. To write full-length research papers and case studies. 2. To prepare abstracts and manuscripts for submission to journals or conferences. 3. To create patient education materials.	PERLS, Pharmacology, Community Medicine, Pathology, Forensic Medicine	i. Writing and formatting full-length research papers ii. Preparing abstracts and manuscripts iii. Statistical analysis (SPSS, R) - Introduction to LaTeX for journal formatting iv. Design patient education materials (Canva)
	IT Integration: IT Skills: 4. To use advanced research tools (PubMed, EndNote), medical data analysis (SPSS, R), and digital publishing (LaTeX for formatting research articles). Writing Application: 5. To apply advanced citation tools (EndNote, Mendeley) to manage extensive references in research papers. 6. To use data analysis tools for research-related writing, integrating statistical results into reports. 7. To prepare manuscripts using publishing tools and ensure correct formatting for journal submission. 8. To create patient-friendly materials using digital design tools (Canva, Microsoft Publisher) to enhance communication.		

Developed by

Dr. Ambreen Khalid

Professor of Physiology
Central Park Medical College, Lahore

Lt. Col. (R) Dr. Khalid Rahim Khan TI (M)

Ex-Director Medical Education
University of Health Sciences
Lahore





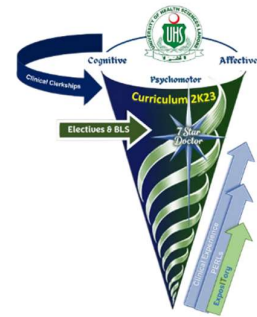
**Department of Medical
Education**

*Innovating &
Strategizing Healthcare
Academia*



ELECTIVES

MODULAR INTEGRATED CURRICULUM 2K23



ELECTIVES

Curriculum
2K23



**ELECTIVES
PROGRAM**



Message by the Vice Chancellor University of Health Sciences Lahore

Alhamdulillah,

The **University of Health Sciences (UHS)**, Lahore, remains steadfast in its commitment to advancing the quality and scope of medical education across its constituent and affiliated medical and dental colleges. After three successful years of implementing and continuously refining the Integrated Modular Curriculum (2K23), UHS now enters an exciting new phase, the launch of the **Elective Rotations Program**.

This landmark initiative represents a significant advancement in our pursuit of excellence. It aims to enrich the learning experience of our students by providing structured opportunities to explore diverse clinical disciplines and healthcare environments beyond the core curriculum. It will be an integral part of the **Curriculum 2K23**. Through this program, learners will not only deepen their clinical exposure but also acquire essential competencies required for the development of competent, compassionate, and confident future healthcare professionals.

To become reliable and safe medical doctors, MBBS students must acquire a comprehensive set of clinical competencies that form the foundation of effective patient care. These include history taking, physical examination, diagnostic reasoning, communication skills, and proficiency in performing essential clinical procedures such as blood pressure measurement, venipuncture, and intramuscular injections — all developed through a blend of academic learning, simulation-based training, and supervised hands-on practice with patient consent. Equally vital are skills in ECG interpretation, basic emergency management, and wound care, which are cultivated through structured clinical exposure, observation, and active participation in both patient interactions and simulated clinical environments within skills laboratories. Recognizing the importance of these competencies, the Electives Program has now been integrated as an essential component of the MBBS Curriculum 2K23, enabling students to further refine and expand their clinical abilities through guided experiences across varied healthcare settings.



The Electives Program under the **Curriculum 2K23** has been carefully designed to promote experiential learning and to cultivate higher-order clinical reasoning, patient-centered care, and effective multidisciplinary teamwork. By engaging in elective rotations across UHS constituent units and affiliated teaching hospitals, students will benefit from diverse patient populations, clinical practices, and institutional cultures. Each learner's participation and performance in these electives will be formally documented and reflected on their official academic transcript, recognizing their initiative, skill acquisition, and professional commitment. **University of Health Sciences Lahore**, greatly values the collaboration of its affiliated and constituent institutions, whose continued support and dedication make this transformative step possible. Together, we are building a unified ecosystem of cross-institutional and cross-healthcare system learning — breaking traditional boundaries, encouraging innovation, and promoting shared excellence in medical education and patient care.

This initiative reinforces the University's mission to provide a dynamic, student-centered, and contextually relevant educational framework that aligns with both national health priorities and global standards of clinical education. It will strengthen professional networks, mobilize academic dynamism, and contribute to developing a more integrated and resilient healthcare workforce for **Pakistan**.

I extend my sincere appreciation to all the faculty members, institutional leaders, and curriculum committees whose collective vision and hard work have shaped this important milestone. Together, we look forward to witnessing the positive and lasting impact of the Electives Program on our learners, our institutions, and the healthcare system at large.

Prof. Ahsan Waheed Rathore
Vice Chancellor
University of Health Sciences Lahore



Electives Policy

Curriculum 2K23

Preamble

The University of Health Sciences (UHS), Lahore, had incorporated the elective rotations in the **Curriculum 2K23**. This year the class of 2023 will be reaching the fourth year which is the designated year for the elective rotations. University of Health Sciences Lahore's commitment to modernizing undergraduate medical education, has integrated electives into the **Curriculum 2K23**.

Vice Chancellor, University of Health Sciences, has the vision to develop a culture across all affiliated colleges and healthcare system for collaborative practices and context-based learning. One of the cardinal step in this regard is the inculcation of the undergraduate clinical electives. The electives program will enable all the students to be able to look beyond their own unique institutions and have a grasp on the diversity of learning situations.

The electives program of the **Curriculum 2K23** will provide students with structured opportunities to explore clinical and non-clinical domains of medicine beyond the prescribed curriculum. It will help the medical students to customize part of their education in alignment with personal career goals, broaden their exposure to diverse healthcare settings, and develop professional competencies necessary for international medical practice.

This policy applies to all **48 affiliated medical colleges of UHS, Lahore**. The Electives Program will serve to enhance the educational experience of MBBS students for flexibility, self-directed learning, and professional exploration within a structured framework.

Objectives

By undertaking electives, students will:

- Gain exposure to disciplines not extensively covered during core rotations.
- Develop self-directed learning habits and critical inquiry skills.
- Understand healthcare delivery in diverse settings, including underserved communities.
- Explore areas of personal interest for informed postgraduate career decisions.

Structure and Duration

- **Timing:** Electives will be undertaken during the **summer break** of the 4th academic year
- **Duration:** Two to four weeks.
 - **Option 1:** Two weeks Clinical
 - **Option 2:** Two weeks Clinical + Two Weeks Non Clinical



- **Option 2:** Four weeks Clinical.
- **Sites:** Electives may be conducted at:
 - UHS-affiliated medical colleges (other than parent institution).
 - University-approved hospitals and healthcare facilities.
 - Recognized research organizations, NGOs, or community health setups.
 - International institutions (subject to approval by the Department of Medical Education UHS).

Roles and Responsibilities

University of Health Sciences, Lahore

- Issue and update the electives policy and guidelines.
- Maintain and circulate a list of approved institutions offering electives.
- Establish mechanisms for monitoring, evaluation, and conflict resolution.
- Record successful elective completion in the University database and transcripts.

Parent Institution

- Orient students regarding elective opportunities, processes, and expectations.
- Guide students in elective selection aligning with career and learning goals.
- Maintain communication with host institutions regarding placements.
- Incorporate elective reports and supervisor feedback into student records.
- Intimate the details of the electives and the attending students to UHS.
- **Department of Medical Education** of every affiliated college will have the process of electives, documentation requirements and procedure of collaboration approved by their respective **academic council**.

Host Institution / Healthcare Setup

- Provide structured, supervised learning opportunities.
- Declare the curriculum / learning opportunities and structure of the electives explicitly on their website.
- Assign a faculty supervisor/mentor to oversee student activities.



- Ensure students have access to relevant learning resources and safe environments.
- Monitor attendance, performance, and professional behavior.
- Issue a **Certificate of Completion** and provide feedback to the parent institution.

Student

- Take personal responsibility for elective planning, timely applications, and compliance with procedures.
- Abide by all professional, ethical, and institutional norms of the host institution.
- Maintain a **logbook/portfolio** of activities and reflections.
- Submit a structured **Elective Report** to the parent college within two weeks of completion.

Student Guide

Opportunities for Students

The electives program of the **Curriculum 2K23** will engage the fourth-year students in diverse clinical experiences to broaden their skills through exposure to various specialties and sub-specialties. The program will also provide opportunities to participate in research, medical education, community health, or public health initiatives for the students' professional development and understanding of healthcare systems. The students will also be able to establish valuable connections with professionals and institutions at both national and international levels, enhancing a collaborative potential. The entire workup will strengthen individuals' portfolio for competitive postgraduate opportunities.

How to maximize the benefits

Students should:

- Choose electives aligned with their professional interests and future career goals.
- Engage actively and responsibly in all assigned activities.
- Keep a reflective journal to capture insights and experiences.
- Seek regular feedback from elective supervisors.
- Respect culture, values, and rules of the host institute.

Eligibility and Application Process

To ensure fairness, quality, and alignment with the University's academic standards, only students who meet the following criteria shall be eligible for electives:



- **Academic Standing**
 - Students must have successfully cleared the Third Professional MBBS Examination of the University of Health Sciences, Lahore.
 - Students must be in good academic standing, with no outstanding academic deficiencies, failures, or incomplete courses.
- **Conduct and Discipline**
 - Students must have a record free from major disciplinary violations.
 - A formal certification of “good conduct” from the parent college administration is required.
- **Health and Fitness**
 - Students must provide a Health Clearance Certificate from the parent college medical officer/health authority, certifying that they are fit to participate in the elective.
- **Administrative Requirements**
 - Applications must be submitted within the announced deadlines (at least three months prior to the start of electives).
 - Electives must be planned in consultation with the Departmental Heads and the Electives Coordinator at the parent college.
- **Special Provisions**
 - For overseas electives, students must demonstrate good academic and research standing, provide valid travel/health insurance, and ensure that the host institution is recognized by relevant national/international accreditation bodies.
- **Application Procedure:**
 - Students complete an **Elective Application Form** and **Elective Documentation** available from the Department of Medical Education of the parent institute.
 - Required documents as approved by the institutions’ academic council and as published by the Department of Medical Education will
 - Parent college submit the electives report to the UHS within 2 weeks of completion.
- **Deadline for individual electives approval:** As decided by the Director Medical Education

Documentation Requirements

Documents Required for Electives Application

The following documents must be submitted along with the application form:

- Completed Elective Application Form (UHS format).



- Learning Agreement signed by student, parent college, and host institution.
- Two recent passport-size photographs.
- Proof of passing Third Professional MBBS Examination.
- Statement of Purpose (Motivation Letter) (500–700 words).
- Health Clearance Certificate (from parent college/authorized medical officer).
- Letter of Good Standing from the Principal/Vice Principal/Head of Institution.
- Elective Preferences (up to three departments/institutions, in order of priority).
- For international electives:
 - Proof of acceptance from the host institution.
 - Insurance certificate (health/travel/accident).
 - Copy of valid passport & visa.
- The following documents must be submitted after the completion of electives:
 - Portfolio/Logbook documenting activities, reflections, and supervisor's weekly feedback.
 - Certificate of Completion issued by host institution.
 - Final Elective Report (2,000 words) summarizing learning outcomes, challenges, and reflections.

Policy on Conduct and Safety

- Students must strictly follow the **Code of Conduct of University of Health Science Lahore**, parent college, and host institution.
- Dress code, punctuality, confidentiality, and professional etiquette are compulsory.
- Students are responsible for their **travel, accommodation, and living expenses**.
- For electives outside Pakistan, valid **health/accident insurance** and international travel clearance are mandatory.
- Misconduct, absenteeism, or breach of rules will result in disciplinary action and may invalidate the elective.



Types of Electives

Clinical Electives

- Core disciplines: Medicine, Surgery, Pediatrics, Obstetrics & Gynecology, Psychiatry, Dermatology.
- Subspecialties: Emergency Medicine, Cardiology, Neurology, Orthopedics, etc.

Non-Clinical Electives

- Basic Sciences (Anatomy, Physiology, Biochemistry, Pharmacology, Pathology, Forensic Medicine).
- Research projects (clinical or laboratory-based).
- Medical Education and Curriculum Development.
- Public/Community Health, Epidemiology, Health Policy.
- Ethics, Humanities, and Global Health.

Learning Outcomes

Upon completion, students will be able to:

- Demonstrate additional knowledge and clinical/non-clinical skills specific to chosen elective.
- Apply principles of professionalism, ethics, and patient safety in diverse settings.
- Reflect critically on their elective experiences and articulate their impact on career planning.
- Exhibit effective teamwork and communication with multidisciplinary professionals.
- Produce scholarly work (portfolio/report) meeting UHS academic standards.

Credit and Recognition

- Completion is documented in the University transcript and student portfolio.
- Exceptional elective projects may be recognized with **University Elective Awards**
- Opportunity for presentation at the **UHS Conferences**.



Post-Electives Process

At the conclusion of the elective period, students must fulfill the following requirements to ensure credit and recognition:

1. Supervisor Evaluation

- The host institution supervisor will complete a structured evaluation form, rating student attendance, engagement, professionalism, and learning achievements.
- This evaluation will be submitted to the parent college's Electives Coordinator.

2. Certificate of Completion

- The host institution shall issue an official certificate confirming successful completion of the elective, with dates, department, and supervisor signature/stamp.
- This certificate must be submitted to the parent college administration within two weeks of return.

3. Elective Logbook & Portfolio

- Students must maintain and submit the logbook/portfolio documenting daily/weekly activities, reflections, and supervisor signatures.

4. Final Elective Report

- **Each student must submit a comprehensive written report (2,000 words) summarizing:**
 - Activities undertaken.
 - Skills and knowledge gained.
 - Reflections on personal and professional growth.
 - Challenges faced and strategies for overcoming them.
 - Recommendations for future electives.
- This report must be submitted to the parent college electives coordinator.

5. Feedback Mechanism

- Students will complete a Post-Elective Feedback Form regarding the quality, supervision, and relevance of the elective.
- Feedback will inform the University's quality assurance process for host institutions.

6. Recognition and Credit

- Upon verification of documentation and satisfactory assessment, UHS will record the elective completion in the official student transcript.
- Outstanding elective reports/projects may be nominated for University Awards or presentation at the Annual UHS Medical Education Conference.



Frequently Asked Questions (FAQs)

Q1. Can I do all four weeks in clinical rotations?

Yes. Students may opt for four weeks of clinical electives.

Q2. Are international electives allowed?

Yes, subject to required documentation, and host institution recognition.

Q3. Who arranges placements?

Students initiate placements, while parent colleges and UHS facilitate verification and approval.

Q4. Are electives graded?

Electives are not numerically graded but assessed on **satisfactory completion** through reports, logbooks, and supervisor feedback.

Approval and Implementation

This document constitutes the **official Electives Policy** of the University of Health Sciences, Lahore. All affiliated medical colleges are required to adopt and implement this policy uniformly. UHS will periodically review and revise the policy to ensure ongoing relevance and effectiveness in medical education.



Annexures



Annexure I

Sample Elective Application Form & Learning Agreement

University of Health Sciences, Lahore

Electives Application and Learning Agreement

(To be completed in triplicate: Student copy, Parent College copy, UHS copy)

Section A: Student Information

- Full Name: _____
- Father's Name: _____
- Roll Number / Registration Number: _____
- Year of Study: _____
- Parent Medical College: _____
- Contact Number: _____
- Email Address: _____

Section B: Elective Details

- Elective Type: Clinical ☐ Non-Clinical ☐ Mixed (2+2 weeks) ☐
- Duration: From _____ to _____ (total 4 weeks)
- Proposed Host Institution: _____
- Department / Specialty / Unit: _____
- Supervisor's Name & Designation (if known): _____

Section C: Student Statement of Purpose

(Attach a one-page Motivation Letter outlining your reasons for choosing this elective and expected learning outcomes.)

Section D: Required Attachments

- CV ☐
- Academic Transcript ☐
- Motivation Letter ☐



- Health Clearance Certificate ☐
- Consent Form (Parent/Guardian) ☐
- Insurance Document (for overseas electives) ☐

Section E: Learning Agreement

The undersigned agree to the following terms for the elective period:

1. **Student Responsibilities:** Attend regularly, follow institutional policies, maintain professionalism, complete logbook and report.
2. **Host Institution Responsibilities:** Provide supervised learning opportunities, mentorship, feedback, and certificate of completion.
3. **Parent College Responsibilities:** Facilitate application, maintain communication with host institution, ensure student preparedness.
4. **UHS Responsibilities:** Approve elective placements, oversee quality, and record completion in transcript.

Signatures:

- Student: _____ Date: _____
 - Parent College Focal Person: _____ Date: _____
 - Host Institution Supervisor: _____ Date: _____
 - Dean/Principal (Parent College): _____ Date: _____
 - UHS Approval: _____ Date: _____
-
-



Annexure II

Elective Logbook Template

University of Health Sciences, Lahore

Elective Logbook & Portfolio

(To be maintained by the student during elective and submitted to parent college at completion.)

Student Information

- Name: _____
- Roll Number: _____
- Parent College: _____
- Host Institution: _____
- Elective Type: Clinical ☐ Non-Clinical ☐ Hybrid ☐
- Elective Duration: From ____ to ____

Section A: Weekly Activity Record

Week Dates Activities Undertaken Skills Observed/Practiced Supervisor's Feedback & Signature

1

2

3

4

Section B: Daily Reflection Notes

(Students to write short reflective notes each day focusing on what they learned, challenges faced, and how the experience contributes to their professional growth.)

Date: _____

Reflection:

Section C: Midpoint Review (End of Week 2)

Supervisor Feedback:



Student Comments:

Section D: Final Supervisor Evaluation

- Attendance: Satisfactory ☐ / Unsatisfactory ☐
- Professionalism: Satisfactory ☐ / Unsatisfactory ☐
- Engagement & Participation: Satisfactory ☐ / Unsatisfactory ☐
- Overall Performance: Satisfactory ☐ / Unsatisfactory ☐

Supervisor Name & Signature: _____ Date: _____

Section E: Student Final Reflection

In 2000 words, reflect on your elective experience covering:

- Key learning outcomes achieved.
- Skills and insights gained.
- Challenges and how they were addressed.
- How this elective influences your future career pathway.

Student Signature: _____ Date: _____

Section F: Completion Certificate

This is to certify that **Mr./Ms.** _____ successfully completed a **4-week elective rotation** at _____ from ____ to ____.

Supervisor Name: _____ Signature: _____ Date: _____

Seal/Stamp of Host Institution



Annexure III

Types of Non-Clinical Electives for MBBS Students

1. Basic Medical Sciences

- Anatomy (advanced dissection techniques, radiological anatomy, clinical correlations)
- Physiology (experimental physiology, exercise physiology, neurophysiology)
- Biochemistry (clinical biochemistry, molecular biology, laboratory medicine)
- Pharmacology (drug trials, pharmacogenomics, rational prescribing)
- Pathology (histopathology techniques, hematology, cytogenetics)
- Forensic Medicine & Toxicology (forensic case studies, toxicology labs, medicolegal ethics)

2. Research-Oriented Electives

- Clinical Research Methodology
- Epidemiology and Biostatistics
- Evidence-Based Medicine (systematic reviews, meta-analysis)
- Translational Medicine (bench-to-bedside research)
- Laboratory Research in Genetics, Immunology, or Microbiology

3. Public & Community Health

- Community Medicine and Public Health Projects
- Health Promotion & Disease Prevention Programs
- Maternal and Child Health Interventions
- Non-communicable Diseases (NCDs) prevention strategies
- Rural or Underserved Community Health Programs
- NGO/Community Organization Fieldwork

4. Medical Education & Leadership

- Curriculum Development & Instructional Design
- Student Mentorship & Peer-Assisted Learning
- Assessment & Evaluation in Medical Education
- Educational Technology in Medicine (simulation, e-learning)
- Leadership and Management in Healthcare

5. Health Systems, Policy & Management



- Health Policy and Systems Research
- Hospital Administration and Quality Assurance
- Healthcare Financing and Insurance Models
- Global Health Policy & Comparative Health Systems
- Health Informatics and Digital Health

6. Ethics, Humanities & Professional Development

- Medical Ethics and Professionalism
- Narrative Medicine (reflective writing, storytelling in healthcare)
- Medical Humanities (history of medicine, literature, philosophy)
- Communication Skills and Counseling Training
- Palliative Care, End-of-Life Decision Making
- Law and Medicine (patient rights, malpractice, regulations)

7. Innovation & Emerging Fields

- Artificial Intelligence and Machine Learning in Healthcare
- Telemedicine & Digital Health Systems
- Medical Journalism & Health Communication
- Disaster Medicine & Humanitarian Response
- Climate Change and Health



Developed by

Lt. Col. (R) Dr. Khalid Rahim Khan TI (M)
Ex-Director Medical Education
University of Health Sciences
Lahore



08

Section



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	1 st Year / 2 nd Year	2 days	Eligibility requirement for appearing in the 4 th Professional Examination
2.	Advanced Life Support	3 rd Year / 4 th Year	1 day	Eligibility requirement for appearing in the Surgical Clerkship examination
3.	Cardiac First Response	3 rd Year / 4 th Year	1 day	Eligibility requirement for appearing in the Medicine Clerkship examination
4.	Trauma first responders	3 rd Year / 4 th Year	1 day	Eligibility requirement for appearing in the Surgical Clerkship examination
5.	Emergency Neonatal Resuscitation	3 rd Year / 4 th Year	1 day	Eligibility requirement for appearing in the Pediatrics Clerkship examination
6.	Emergency Obstetrics Resuscitation	3 rd Year / 4 th Year	1 day	Eligibility requirement for appearing in the Gynecology / Obstetrics Clerkship Examination



**University of
Health Sciences
Lahore**



**Department of Medical
Education**

*Innovating & Strategizing
Healthcare Academia*

