

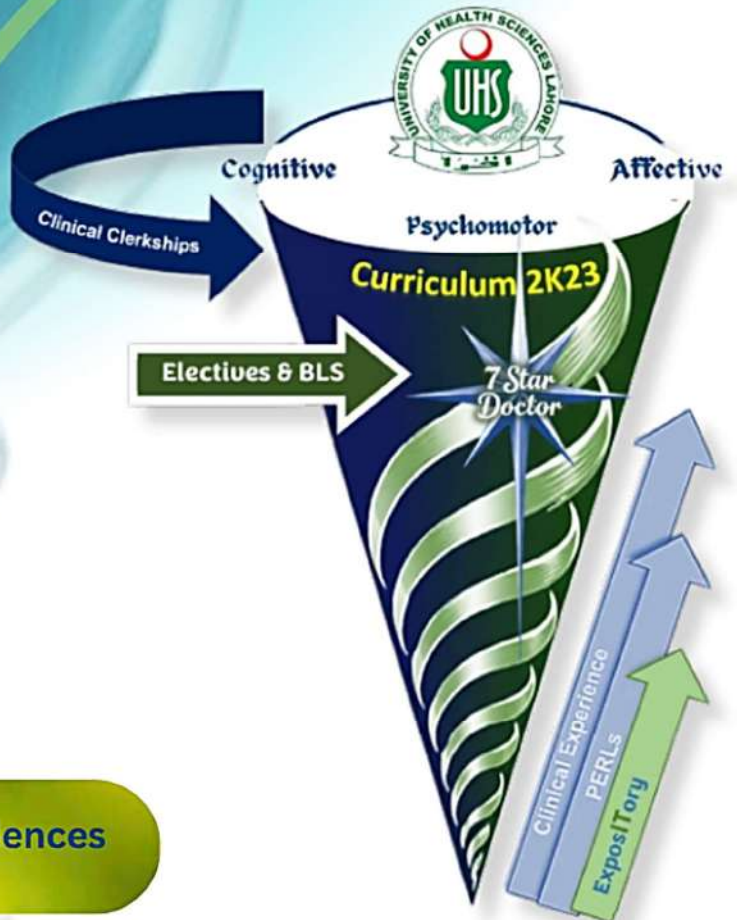
**MBBS
YEAR
04**



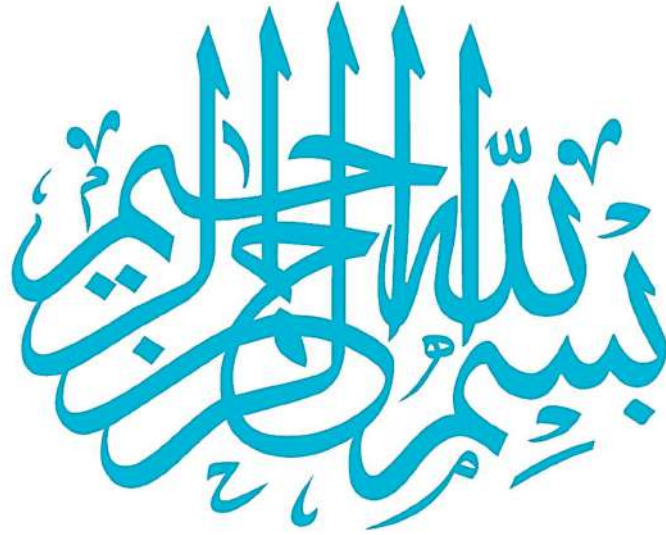
Volume-04



**Modular Integrated
Curriculum 2K23**
Final Version



**University of Health Sciences
Lahore**





Modular Integrated Curriculum 2K23

Volume-04 / Year-04

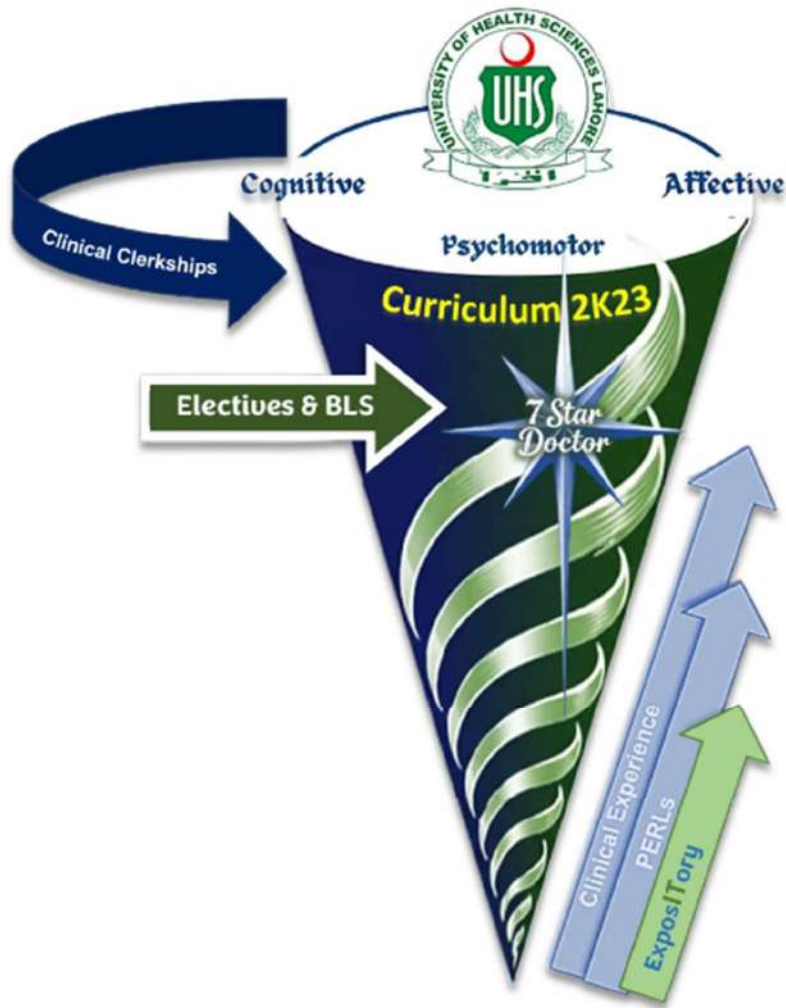




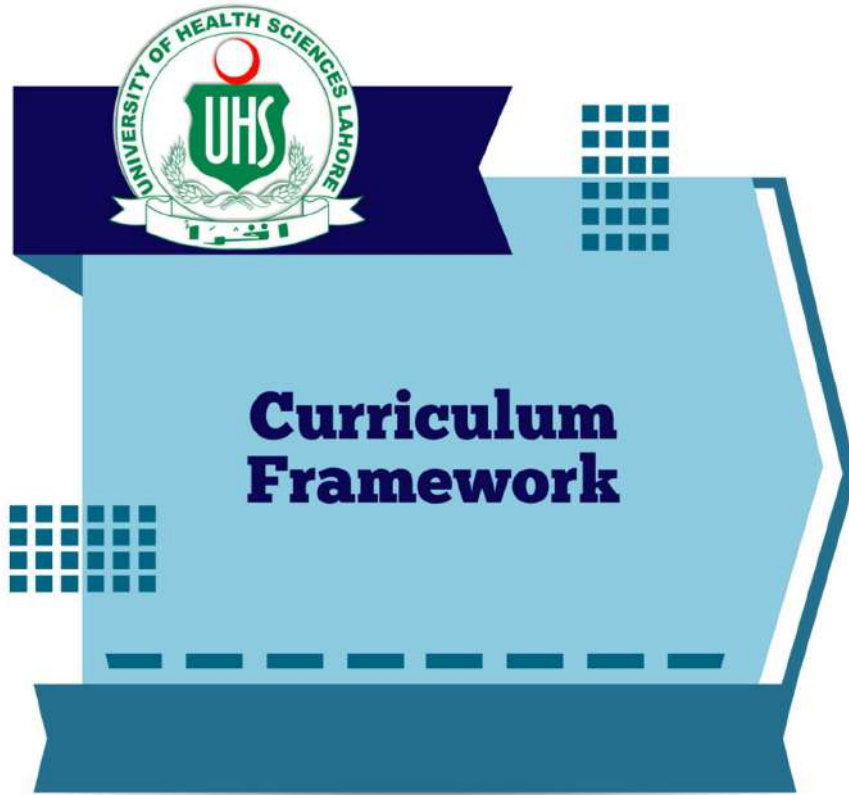
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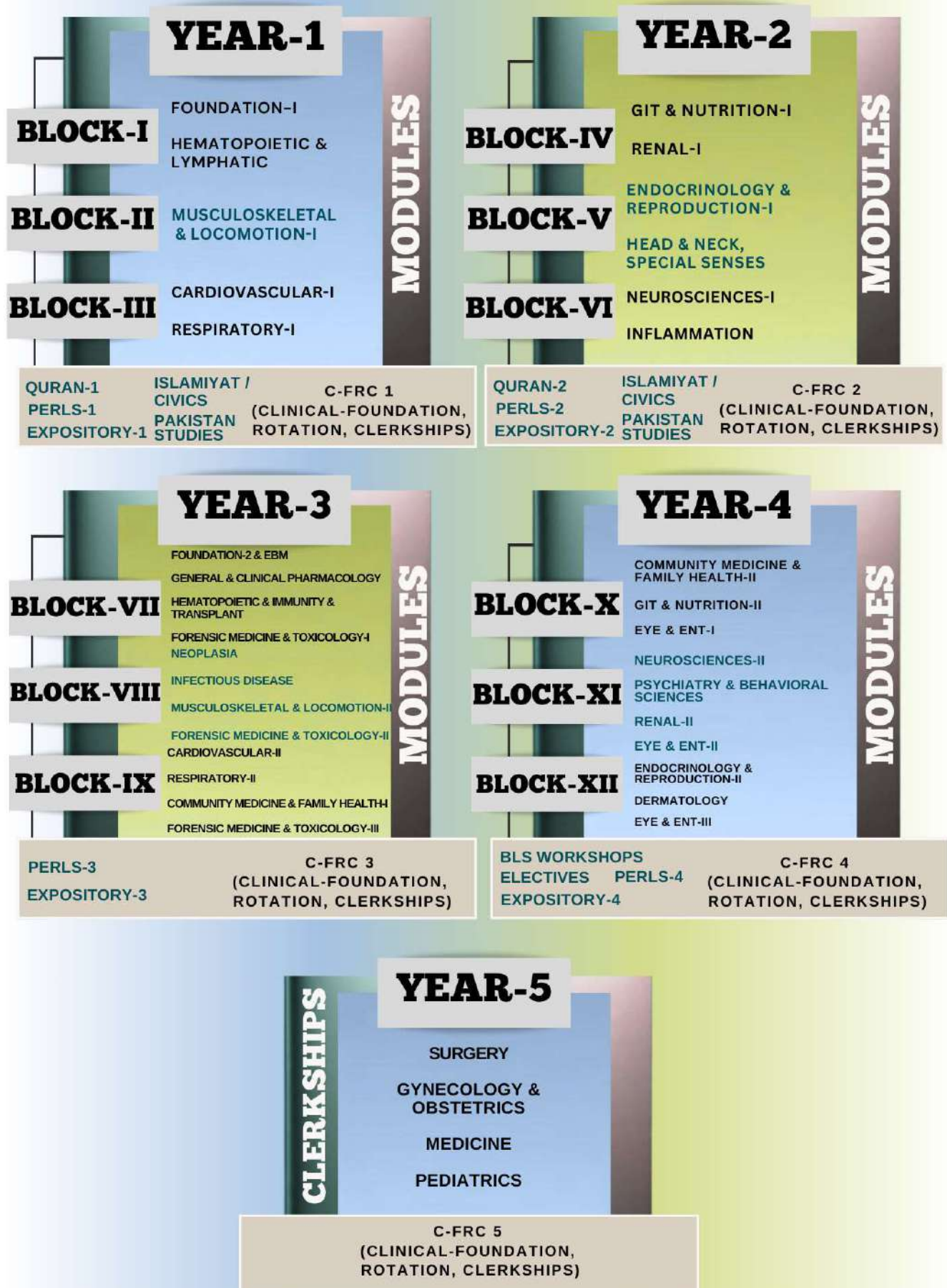
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01

Section



Modular Integrated Curriculum 2K23 Framework



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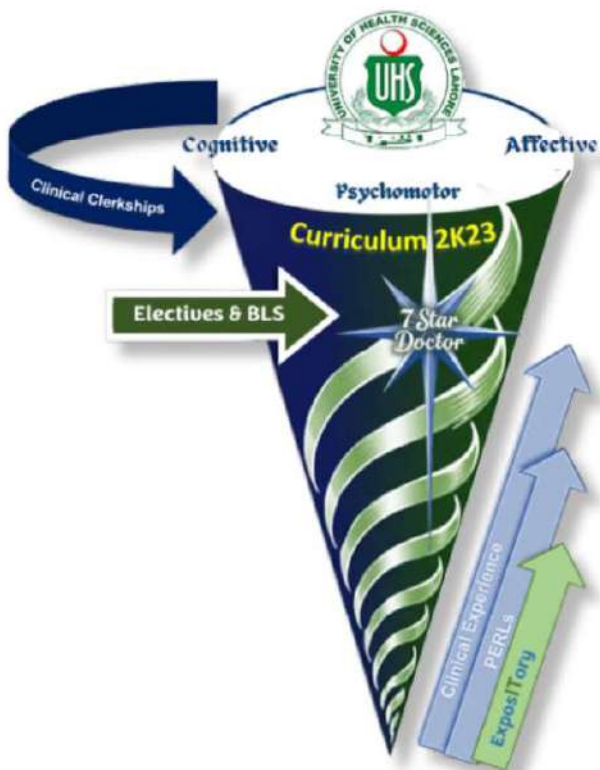
02

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, symposia, and CPCs
- Electives



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. | | |

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

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| | 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: <ol style="list-style-type: none"> 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. | | |
| CMFH2-FM-002 | Outline the treatment of migraine, tension-type, and cluster headaches. | Family Medicine/ Medicine | Fever |
| | Prescribe prophylactic treatment for recurrent primary headaches. | | |
| | Plan the management of secondary headaches according to cause. | | |
| | Advise non-pharmacological measures. | | |
| | Classify fever based on duration and pattern. Explain their clinical relevance in primary care. | | |
| 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. | | | |

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| 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 <ul style="list-style-type: none"> i. Immediate stabilization ii. Symptomatic management iii. Specific management according to cause iv. Indications for referral and hospitalization | | |
| | Discuss preventive aspects including: <ul style="list-style-type: none"> 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. | | |

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| | 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. | | |
| | 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 | | |

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| | 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 GLANDS

| 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 |

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| | <p>Explain the pathophysiological mechanisms leading to dysphagia.</p> <p>Outline the etiology of dysphagia</p> <p>Develop a stepwise diagnostic and management plan for a patient presenting with dysphagia.</p> | | |
| GIT2-GE-013 | <p>Diagnose gastroesophageal reflux disease (GERD) on the basis of characteristic symptoms and clinical presentation.</p> <p>Enlist the etiology and pathophysiology of GERD.</p> <p>Outline differential diagnosis of GERD.</p> | Gastroenterology/Medicine | Gastroesophageal Reflux Disease (GERD) |
| GIT2-GE-014 | <p>Diagnose achalasia on the basis of characteristic symptoms and clinical presentation.</p> <p>Describe the etiology and pathophysiology of achalasia.</p> <p>Outline the diagnostic investigations for achalasia.</p> <p>Interpret the radiological and endoscopic findings in achalasia.</p> <p>Discuss the treatment options for achalasia.</p> | Gastroenterology/Medicine | Achalasia |
| GIT2-GE-015 | <p>Diagnose esophageal candidiasis based on its specific signs and symptoms.</p> <p>Enumerate the risk factors for esophageal candidiasis.</p> <p>Outline the diagnostic investigations and discuss the treatment options for esophageal candidiasis.</p> | Gastroenterology/Medicine | Esophageal candidiasis |
| GIT2-GE-016 | <p>Describe the risk factors for esophageal cancer.</p> <p>Diagnose esophageal cancer from its symptoms and clinical presentation.</p> <p>Outline the diagnostic investigations for esophageal cancer.</p> <p>Explain the staging of esophageal cancer.</p> <p>Discuss the treatment options for esophageal cancer.</p> | Gastroenterology/Medicine | Esophageal cancer |
| STOMACH AND DUODENUM | | | |
| GIT2-Pa-017 | <p>Describe the pathogenesis and morphology of acute gastritis.</p> | Pathology | Acute gastritis |

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| 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 |

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

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

SMALL & LARGE INTESTINE

| | | | |
|-------------|--|--------------|--|
| GIT2-Pa-035 | <p>Describe the morphological features of ischemic bowel disease with special emphasis on its causes and mutations involved.</p> <p>Enumerate the pathological causes of malabsorption syndrome.</p> <p>Describe the morphology, Marsh classification, and lab diagnosis of Celiac disease.</p> <p>Describe the pathogenesis and morphological features of Whipple disease.</p> | Pathology | Diseases of the Small and Large Intestines |
| GIT2-Pa-036 | <p>Enumerate the common causative agents of infectious enterocolitis including bacterial, viral, and parasitic.</p> <p>Explain the pathogenesis of enterocolitis caused by Salmonella, Mycobacterium tuberculosis, and Clostridium difficile.</p> | Microbiology | Causative agents of infectious enterocolitis |
| GIT2-Pa-037 | <p>Describe the pathogenesis, microscopic and macroscopic features, and complications of Crohn's disease and Ulcerative colitis.</p> | Pathology | Crohn's disease and ulcerative colitis |
| GIT2-Pa-038 | <p>Classify the intestinal polyps.</p> <p>Describe the morphological features of:</p> <ol style="list-style-type: none"> i. Hyperplastic polyps ii. Inflammatory polyps iii. Hamartomatous polyps iv. Peutz-Jeghers syndrome <p>Classify polyposis syndromes and describe:</p> <ol style="list-style-type: none"> i. Complications ii. Genetic mutations iii. Extra-gastrointestinal manifestations iv. Morphology | Pathology | Intestinal polyps |
| GIT2-Pa-039 | <p>Classify neoplastic polyps and describe their morphological features in detail.</p> <p>Describe in detail the pathogenesis and morphological features of colorectal carcinoma.</p> | Pathology | Neoplastic polyps and colorectal carcinoma |

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| | 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 |

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

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| | <p>Identify clinical features and complications of delayed treatment.</p> <p>Outline the diagnostic investigations and initial management.</p> | | |
| GIT2-PS-051b | <p>Define inguinal hernia and hydrocele.</p> <p>Classify them in children.</p> <p>Describe the pathophysiology of communicating and non-communicating hydrocele.</p> <p>Enumerate clinical features of hernia and hydrocele.</p> <p>Differentiate between two.</p> <p>Outline principles of management with referral for treatment to Pediatric Surgical Setting.</p> | Pediatric Surgery | Hernia (inguinal & umbilical) and Hydrocoele |
| GIT2-PS-051c | <p>Define Phimosis and Paraphimosis.</p> <p>Differentiate physiological and pathological phimosis.</p> <p>Enumerate complications.</p> <p>Outline management options.</p> | Pediatric Surgery | Phimosis and paraphimosis |
| GIT2-PS-051d | <p>Define vesical and cloacal exstrophy.</p> <p>Describe embryological basis.</p> <p>Enumerate clinical features.</p> <p>Outline management principles.</p> | | Vesical and Cloacal Exstrophy |
| HEPATOBILLARY SYSTEM | | | |
| GIT2-Pa-052 | <p>Enumerate the causes of jaundice with special emphasis on hereditary hyperbilirubinemias.</p> <p>Differentiate between cholestasis and hepatocellular jaundice.</p> <p>Describe the pathological changes in liver cirrhosis that occur at the cellular and structural levels.</p> <p>Interpret liver function tests (LFTs) and correlate abnormal results.</p> | Pathology | Jaundice |
| GIT2-Pa-053 | <p>Identify the etiology and pathogenesis of viral hepatitis (A, B, C, D, and E), including their modes of transmission and effects on the liver.</p> | Pathology | Viral hepatitis |

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

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| | 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 |

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| | 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 |

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

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

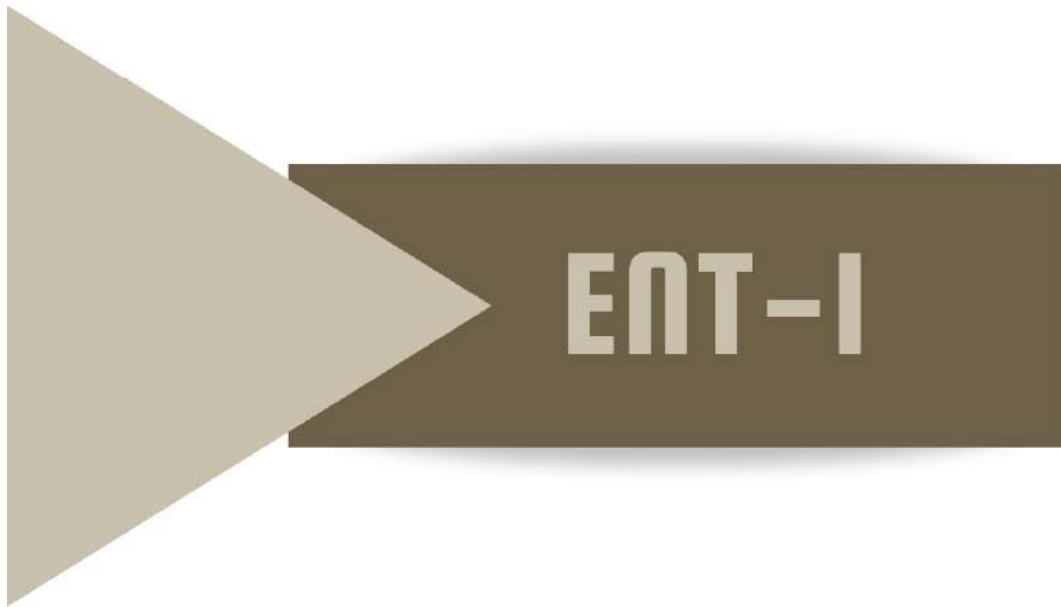
PHARMACOLOGY

| CODE | SPECIFIC LEARNING OUTCOMES | INTEGRATING DISCIPLINE | TOPIC |
|-------------|--|------------------------|------------------------|
| GIT2-Ph-078 | Write down the prescription for <ol style="list-style-type: none"> 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

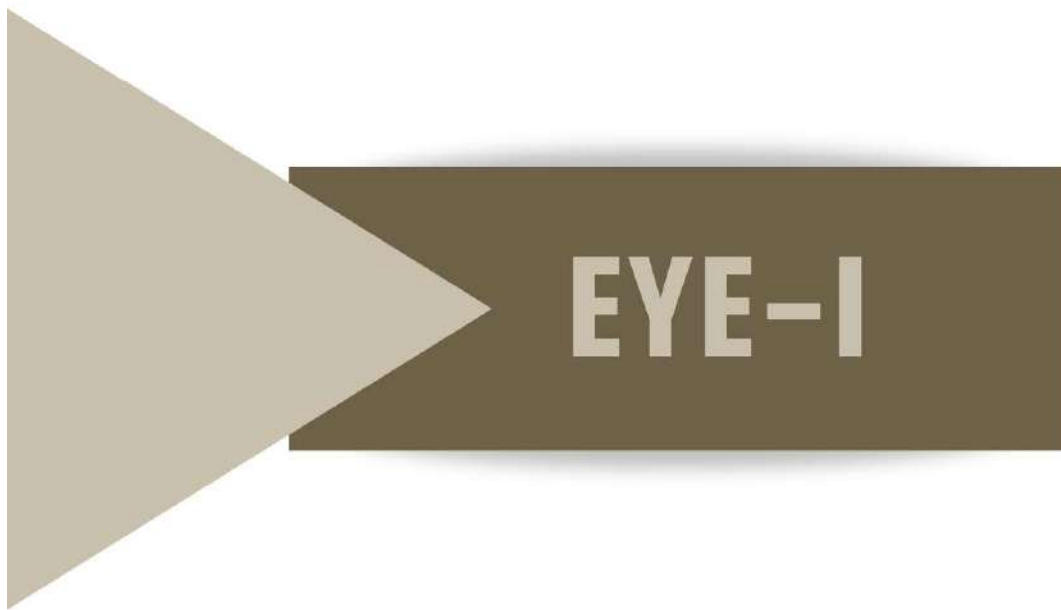
ENT-I (EAR)

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

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

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

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

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

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

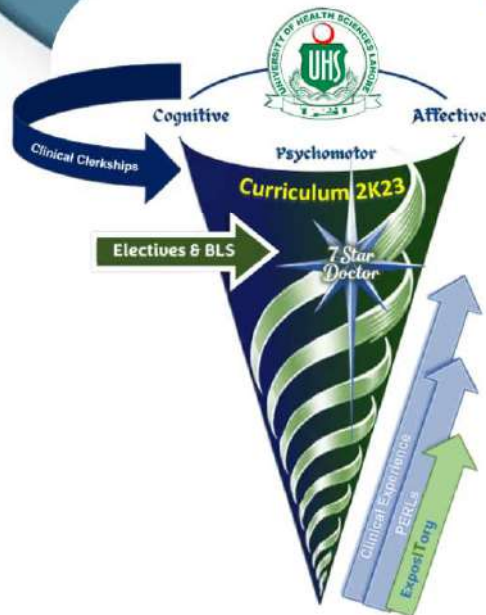
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| | <p>Describe the common indications and contraindications for contact lens use.</p> <p>Identify common complications related to contact lens wear.</p> <p>Outline preventive measures to avoid contact lens-related ocular problems.</p> | | |
| | <p>Define photorefractive surgery and list its common types (e.g., Femto LASIK, LASIK, PRK, TPRK).</p> <p>List the indications and contraindications for photorefractive surgery.</p> <p>Identify the complications of photorefractive surgery.</p> <p>Outline postoperative care and patient counseling points.</p> | Ophthalmology | |
| | <p>Define keratoconus and describe its pathophysiology.</p> <p>List the risk factors associated with keratoconus.</p> <p>Identify the clinical features and signs of keratoconus.</p> <p>Discuss the management options for keratoconus including preventive strategies to slow disease progression.</p> | 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 | | | |
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| CODE | SPECIFIC LEARNING OUTCOMES | INTEGRATING DISCIPLINE | TOPIC |
| NS2-Pa-001 | <p>Explain the etiology and pathophysiological mechanisms of acute viral, lymphocytic, and purulent meningitis.</p> <p>Describe the etiology, pathogenesis, and clinical implications of a brain abscess.</p> <p>Discuss the causative factors and pathophysiology of chronic meningitis.</p> <p>Explain the pathogenesis and complications of tuberculous meningitis.</p> <p>Explain the etiology, transmission, and neuropathological changes associated with viral encephalitis.</p> | Pathology/ Microbiology | CNS Infections |
| NS2-Neu-002 | <p>Identify signs and symptoms of meningitis.</p> <p>Enlist the diagnostic approach.</p> <p>Outline medical management plan.</p> <p>Identify the potential complications.</p> | Neurology/ Medicine | Meningitis |
| NS2-Neu-003 | <p>List the common viral and non-viral causes of encephalitis.</p> <p>Identify the typical clinical presentation.</p> <p>Outline the diagnostic workup.</p> <p>Plan the management strategies</p> <p>Identify short- and long-term complications.</p> | Neurology/ Medicine | Encephalitis |
| NS2-Neu-004 | <p>Define ischemic stroke.</p> <p>Diagnose ischemic stroke based on clinical presentation.</p> <p>Enlist investigations to determine the cause.</p> <p>Describe management including emergency intervention and prevention of ischemic stroke.</p> | Neurology/ Medicine | Ischemic stroke |
| NS2-Neu-005 | <p>Define subarachnoid and intracerebral hemorrhage.</p> <p>Enlist causes and predisposing factors.</p> | Neurology/ Medicine | Subarachnoid and intracerebral hemorrhage |

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| | <p>Identify key clinical manifestations and possible complications.</p> <p>Outline essential investigations with management and preventive measures.</p> | | |
| NS2-PS-003 | <p>Define neural tube defects and hydrocephalus.</p> <p>Classify types.</p> <p>Identify risk factors and clinical features.</p> <p>Outline management plan with early referral.</p> | Pediatric Surgery | Hydrocephalus and spinal malformations |
| NS2-Neu-004 | <p>Define epilepsy.</p> <p>Describe clinical presentations of seizures.</p> <p>Enlist different investigative modalities for diagnosis of epilepsy.</p> <p>Outline the management plan.</p> | Neurology | Epilepsy |
| NS2-Ph-005 | <p>Classify Anti-epileptics.</p> <p>Describe their mechanism of action, uses, adverse effects, drug interactions and contraindications.</p> <p>Enlist differences between sodium Valproate, Phenytoin, Carbamazepine, Gabapentin, Lamotrigine and Ethosuximide.</p> <p>Discuss role of antiseizure and benzodiazepines in essential tremors.</p> | Pharmacology | Anti-epileptics |
| NS2-Pa-006 | <p>Classify central nervous system (CNS) tumors based on the WHO classification.</p> <p>Describe the genetic mutations, pathogenesis, morphology, and clinical manifestations of major primary brain tumors, including gliomas, ependymomas, medulloblastomas, and meningiomas.</p> <p>Discuss the pathogenesis, common primary sites, and clinical features of metastatic brain tumors.</p> | Pathology | CNS tumors |
| NS2-Pa-007 | <p>Define and enlist the major types of neurodegenerative disorders affecting the central nervous system.</p> | Pathology | Neurodegenerative diseases |

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

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

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| | <p>Describe the mechanism of action, pharmacological effects, clinical uses, adverse effects, drug interactions, and contraindications of drugs used for hyperkinetic movement disorders.</p> <p>Discuss pharmacological strategies for the management of drug-induced movement disorders, including acute dystonia, akathisia, and parkinsonism.</p> <p>Explain the principles of drug selection, rationale for combination therapy, and the use of newer therapeutic agents in movement disorders.</p> | | |
| NS2-Pa-014 | <p>Explain the pathophysiology of inflammatory neuropathies, including Guillain–Barré Syndrome (Acute Inflammatory Demyelinating Polyneuropathy).</p> <p>Describe the clinical features, pathological changes, and disease progression of Guillain–Barré Syndrome.</p> <p>Explain the pathophysiology and morphological changes of poliomyelitis, including anterior horn cell involvement.</p> <p>Describe the pathogenesis, morphological features, and clinical implications of prion diseases.</p> | Pathology | Guillain–Barré Syndrome, poliomyelitis & prion diseases |
| NS2-Neu-015 | <p>Define neuropathy and classify peripheral neuropathies.</p> <p>Identify the clinical features of neuropathies.</p> <p>Explain the functional impact of neuropathies on gait, sensation, and daily activities.</p> <p>Outline the diagnostic approach and management plan.</p> | Neurology/ Medicine | Neuropathies |
| NS2-Pa-016 | <p>Describe the structural and functional differences between Type I and Type II muscle fibers.</p> <p>Explain the pathogenesis, morphological features, and diagnostic criteria of inflammatory myopathies, including dermatomyositis and polymyositis.</p> | Pathology/ Neurology | Myopathies |

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| | <p>Discuss the etiology, pathophysiology, and histopathological characteristics of inherited skeletal muscle diseases, including Duchenne and Becker muscular dystrophies.</p> <p>Correlate pathological findings with clinical presentation and disease progression in the above disorders.</p> | | |
| NS2-Neu-017 | <p>Define and classify paraplegia.</p> <p>Differentiate paraplegia from quadriplegia and hemiplegia.</p> <p>Differentiate between upper and lower motor neuron lesions.</p> <p>Identify the key clinical features that help localize the spinal cord lesion.</p> <p>Discuss the management and identify potential complications.</p> | Neurology/ Medicine | Paraplegia |
| NS2-Neu-018 | <p>Describe multiple sclerosis with its types and clinical variants.</p> <p>Explain the etiology, immunopathogenesis, and risk factors associated with multiple sclerosis.</p> <p>Identify the characteristic clinical features.</p> <p>Outline the diagnostic approach.</p> <p>Describe the management strategies.</p> | Neurology/ Medicine | Multiple Sclerosis |
| NS2-Ph-019 | <p>Describe the pharmacological classification of anti-migraine drugs.</p> <p>Explain the mechanism of action of triptans and ergot alkaloids in the management of migraine.</p> <p>Describe the pharmacokinetic properties and clinical uses of different triptans and ergot derivatives.</p> <p>Describe the adverse effects, contraindications, and drug interactions.</p> | Pharmacology | Anti-migraine drugs |

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| NS2-Ph-020 | <p>Classify local anesthetic agents based on their chemical structure and duration of action.</p> <p>Explain the mechanism of action, pharmacological effects, and clinical applications of local anesthetics.</p> <p>Compare amide and ester local anesthetics in terms of metabolism, stability, and allergic potential.</p> <p>Describe the rationale, benefits, and risks of adding vasoconstrictors to local anesthetic preparations.</p> <p>Identify commonly used agents for short-, intermediate-, and long-duration procedures, including minor and major peripheral nerve blocks.</p> <p>Discuss the adverse effects, contraindications, and significant drug interactions of local anesthetics.</p> | Pharmacology/ Anesthesia | Local Anesthetics |
| NS2-Ph-021 | <p>Classify general anesthetic agents based on their route of administration and duration of action.</p> <p>Describe the clinical uses, adverse effects, contraindications, and major drug interactions of commonly used general anesthetics.</p> <p>Discuss the principles and agents used for the reversal and recovery from anesthesia.</p> | Pharmacology/ Anesthesia | General Anesthetics |
| NS2-Neu-022 | <p>Define coma and unconsciousness.</p> <p>Describe the pathophysiology underlying loss of consciousness.</p> <p>Apply the Glasgow Coma Scale for assessment.</p> <p>Outline the diagnostic approach.</p> <p>Discuss the complications, prognosis, and criteria for brain death determination.</p> | 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
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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 | <p>Explain the bio-psycho-social model of health and its application in patient care.</p> <p>Differentiate normalcy versus abnormalcy.</p> | Behavioral Sciences | Bio-psycho-social model of health |
| PsyBhS1 -BhS- 002 | <p>Describe sensation, perception, attention, and concentration, and explain their relevance in clinical practice.</p> <p>Define memory, describe its stages and types, and suggest methods to improve it.</p> <p>Define thinking and describe its types.</p> <p>Define cognition and describe its levels.</p> <p>Discuss problem-solving and decision-making steps, barriers, and strategies in clinical practice.</p> | Behavioral Sciences | Understanding Behavior |
| PsyBhS1 -BhS- 003 | <p>Define personality and its types.</p> <p>Explain developmental theories of personality.</p> <p>Explain defense mechanisms.</p> <p>Explain its significance in clinical practice.</p> <p>Define intelligence and describe its types.</p> <p>Explain the relevance of IQ and EQ in a doctor's professional and personal life.</p> <p>Discuss methods to enhance emotional intelligence (EQ) and intellectual intelligence (IQ).</p> | Behavioral Sciences | Individual differences - Personality & Intelligence |
| PsyBhS1 -BhS- 004 | <p>Elaborate emotions and motivation and explain their influence on health and illness behavior.</p> <p>Apply basic motivational strategies to enhance patient adherence and lifestyle modification.</p> | Behavioral Sciences | Emotions & Motivation |
| PsyBhS1 -BhS- 005 | <p>Explain the relationship between stress, stressors, and illness.</p> <p>Define coping skills and describe their role in managing stress.</p> | Behavioral Sciences | Stress management |

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| | 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 |
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| 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 |

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

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

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

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

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

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

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| | 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 | |

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

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MODULE

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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 |
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| Re2-Pa-001 | <p>Describe the etiological factors causing nephrotic syndrome (primary and secondary including diabetic nephropathy).</p> <p>Explain the pathogenesis of proteinuria, hypoalbuminemia, and edema.</p> <p>Describe the gross and microscopic changes in glomeruli associated with nephrotic syndrome.</p> <p>Diagnose nephrotic syndrome based on clinical presentation and findings.</p> | Pathology | Nephrotic Syndrome |
| Re2-Pa-002 | <p>Explain the etiopathogenesis and morphology of podocytopathies:</p> <ul style="list-style-type: none"> • Minimal Change Disease • Focal Segmental Glomerulosclerosis (FSGS) | Pathology | Podocytopathies |
| Re2-Pa-003 | <p>Enumerate the etiological factors including idiopathic and secondary causes.</p> <p>Explain the pathogenesis and morphology of membranous nephropathy.</p> | Pathology | Membranous Nephropathy |
| Re2-Neph-004 | <p>Enumerate the common causes of nephritic syndrome.</p> <p>Explain the pathophysiological mechanisms of glomerular inflammation and injury.</p> <p>Correlate the clinical presentation with underlying morphological changes.</p> <p>Analyze the laboratory findings characteristic of nephritic presentations.</p> <p>Outline the management strategies and potential complications.</p> | Nephrology | Nephritic Syndrome |

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| Re2-Pa-005 | <p>Describe the etiology and precipitating infections leading to PSGN.</p> <p>Explain the immunopathogenesis involving immune complex deposition.</p> <p>Identify the gross and microscopic features characteristic of PSGN.</p> | Pathology | Post-Streptococcal Glomerulonephritis (PSGN) |
| Re2-Neph-006 | <p>Describe the etiological factors and risk associations of IgA-mediated renal disease.</p> <p>Explain the pathogenesis focusing on IgA immune complex deposition in the mesangium and small vessels.</p> <p>Identify the characteristic gross and microscopic changes in renal tissue.</p> <p>Correlate histopathological features with clinical manifestations.</p> <p>Outline the relevant laboratory investigations for diagnosis, monitoring, and follow-up.</p> <p>Discuss the management plan.</p> <p>Describe prognostic factors and potential progression to chronic kidney disease.</p> <p>Differentiate IgA nephropathy from Henoch–Schönlein Purpura based on clinical presentation, systemic involvement, and severity.</p> | Nephrology/ Pathology | IgA Nephropathy (Berger's Disease) and Henoch - Schönlein Purpura (IgA Vasculitis) |
| Re2-Pa-007 | <p>Enumerate the etiological and immunological types of RPGN.</p> <p>Explain the pathogenesis of crescent formation and rapid renal failure.</p> <p>Describe the gross and microscopic features of each type.</p> | Pathology | Rapidly Progressive Glomerulonephritis (RPGN) |
| TUBULOINTERSTITIAL DISORDERS | | | |
| Re2-Pa-008 | <p>Define acute tubular necrosis and differentiate it from other causes of acute kidney injury.</p> <p>Describe the etiological factors of ischemic and nephrotoxic ATN.</p> | Pathology/ Nephrology | Acute tubular necrosis |

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| | <p>Explain the pathogenesis and sequence of tubular injury and repair.</p> <p>Describe the gross and microscopic changes in ischemic and nephrotoxic ATN.</p> <p>Correlate pathological changes with clinical features and laboratory findings.</p> <p>Outline the principles of management and prognosis.</p> | | |
| Re2-Pa-009 | <p>Classify tubulointerstitial nephritis (TIN) into acute and chronic forms.</p> <p>Describe the etiological factors, predisposing conditions, and commonly implicated drugs causing renal injury.</p> <p>Explain the pathogenesis and mechanisms of tubular and interstitial injury, including drug-induced nephritis.</p> <p>Correlate pathological changes with clinical presentation and laboratory findings.</p> <p>Outline the principles of diagnosis, management, and prognosis for both idiopathic and drug-induced forms.</p> | Nephrology | Tubulointerstitial and drug-induced nephritis |
| Re2-Pa-010 | <p>Describe the etiological and genetic factors of polycystic kidney disease.</p> <p>Explain the pathogenesis of cyst formation in PKD.</p> <p>Describe the gross and microscopic morphological features.</p> <p>Correlate pathological features with clinical manifestations.</p> <p>Enumerate the laboratory and imaging investigations used in diagnosis.</p> <p>Outline the principles of management and prognosis.</p> | Pathology | Polycystic kidney disease |

RENAL FAILURE AND ITS PROGRESSION

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| Re2-Neph-001 | <p>Describe the etiology and risk factors of Acute Renal Failure.</p> <p>Explain the underlying mechanism.</p> <p>Identify the clinical features and potential complications.</p> <p>Interpret the laboratory investigations.</p> <p>Outline the management plan.</p> <p>Discuss the role and limitations of diuretics in the management of Acute Renal Failure.</p> | Nephrology | Acute Renal failure |
| Re2-Neph-002 | <p>Describe the etiology and risk factors of Chronic Renal Failure.</p> <p>Identify the clinical features and systemic manifestations.</p> <p>Interpret the laboratory investigations and diagnostic criteria.</p> <p>Outline management plan.</p> | Nephrology | Chronic Renal failure (Chronic Kidney Disease) |
| Re2-Neph-003 | <p>Describe end-stage renal disease.</p> <p>Discuss the pathophysiology and progression of chronic kidney disease to ESRD.</p> <p>Enumerate the indications for initiating dialysis.</p> <p>Describe types of dialysis.</p> <p>Explain the purpose, and care of an arteriovenous fistula.</p> <p>Discuss the treatment options for ESRD.</p> <p>Identify the complications associated with dialysis and their management principles.</p> <p>Outline the principles of patient education and long-term follow-up in dialysis care.</p> | Nephrology | End-stage renal disease and Dialysis (hemodialysis and peritoneal dialysis) |

METABOLIC AND SYSTEMIC RENAL DISORDERS

| | | | |
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| Re2-Neph-004 | <p>Describe diabetic nephropathy with its clinical significance.</p> <p>Identify the structural and functional renal changes.</p> | Nephrology | Diabetic nephropathy |
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| | <p>Enlist the laboratory investigations used for diagnosis and monitoring.</p> <p>Outline the principles of prevention, early detection, and management.</p> <p>Describe the complications and prognosis.</p> | | |
| Re2-Neph-005 | <p>Define hypertensive nephrosclerosis.</p> <p>Differentiate benign and malignant forms.</p> <p>Describe the structural and functional renal changes.</p> <p>Correlate clinical manifestations with renal function impairment.</p> <p>Outline investigations and management plan.</p> <p>Discuss the prognosis and long-term outcomes.</p> | Nephrology | Hypertensive nephrosclerosis |
| Re2-Neph-006 | <p>Describe the role of kidneys in electrolyte and acid–base balance regulation.</p> <p>Explain the pathophysiological mechanisms underlying hypo- and hypernatremia, and hypo- and hyperkalemia.</p> <p>Describe the compensatory responses in metabolic acidosis and metabolic alkalosis.</p> <p>Interpret clinical and laboratory findings in common electrolyte and acid–base disorders.</p> <p>Correlate abnormalities in serum electrolytes and arterial blood gases with underlying renal dysfunction.</p> <p>Outline the investigations, management and complications.</p> | Nephrology | Electrolyte and Acid–Base Disorders |
| OBSTRUCTIVE AND INFECTIVE DISORDERS OF THE URINARY TRACT | | | |
| Re2-Uro-007 | <p>Define obstructive uropathy and hydronephrosis.</p> <p>Describe etiology and clinical presentation.</p> <p>Enlist the investigations.</p> <p>Outline management plan.</p> <p>Identify complications.</p> | Urology/ Surgery | Obstructive Uropathy and Hydronephrosis |

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

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| | <p>Explain the pathophysiology of bladder dysfunction in neurological diseases.</p> <p>Correlate clinical features with the level of neural lesion.</p> <p>Discuss diagnostic methods and management principles, including catheterization and rehabilitation</p> | | |
| Re2-Uro-013 | <p>Define urinary retention and urinary incontinence.</p> <p>Classify types of incontinence based on mechanism.</p> <p>Describe the etiological factors and pathophysiology of each condition.</p> <p>Discuss clinical features, investigations, and management approaches.</p> | Urology | Urinary Retention and Incontinence |
| Re2-Ph-014 | <p>Enumerate the drugs used in the management of urinary retention, including</p> <ol style="list-style-type: none"> i. α-adrenergic blockers ii. 5-α reductase inhibitors iii. Muscarinic agonists iv. Cholinesterase inhibitors v. Phosphodiesterase inhibitors <p>Explain the mechanism of action, indications, and adverse effects of each drug class in improving bladder emptying or relieving outlet obstruction.</p> | Pharmacology | Pharmacotherapy of Urinary Retention |
| Re2-Ph-015 | <p>Enlist the drugs used in the management of urinary incontinence.</p> <p>Explain the mechanism of action of antimuscarinic agents and β3-adrenergic agonists in overactive bladder.</p> <p>Describe the role of duloxetine and estrogen in stress urinary incontinence.</p> <p>Outline the use of botulinum toxin in neurogenic detrusor overactivity.</p> <p>State the common adverse effects and contraindications of these drugs.</p> | Pharmacology | Pharmacotherapy of Urinary Incontinence |

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| | 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 | |
| Re2-Uro-008 | Describe the anatomy and physiology of the prostate gland. Differentiate between benign and malignant prostatic diseases. Describe clinical features of: <ul style="list-style-type: none"> • BPH • Prostatitis • Prostate cancer Discuss diagnostic evaluation, including PSA testing and imaging. Outline management plan. | Urology | Prostatic Diseases (BPH, Prostatitis, Prostate Cancer) |
| 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) |

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| | <p>Correlate pathological features with clinical manifestations and complications.</p> <p>Discuss the prognostic factors influencing outcome and survival.</p> <p>Outline the principles of diagnosis and management.</p> | | |
| Re2-Pa-010 | <p>Define Wilms' tumor and describe its epidemiological features.</p> <p>Explain the genetic and developmental basis of its pathogenesis.</p> <p>Describe the gross and microscopic morphological features of Wilms' tumor.</p> <p>Correlate the pathological findings with clinical manifestations.</p> <p>Discuss the prognostic factors influencing outcome and survival.</p> <p>Outline the basic principles of diagnosis and management.</p> | Pathology/ Nephrology | Wilms Tumor (Nephroblastoma) |
| Re2-Pa-011 | <p>Describe the etiology and risk factors of Urothelial cell carcinoma.</p> <p>Explain the pathogenesis and morphological features (gross and microscopic).</p> | Pathology | |
| Re2-Uro-012 | <p>Describe the clinical features and common presentations of Urothelial cell carcinoma</p> <p>Enlist the diagnostic investigations used in the evaluation.</p> <p>Outline management plan and factors affecting prognosis.</p> | Urology | Urothelial cell carcinoma |
| Re2-Pa-013 | <p>Classify testicular tumors.</p> <p>Describe etiology, pathogenesis, and morphology of germ cell and sex cord tumors of testis.</p> <p>Describe the lab diagnosis of testicular tumors including tumor markers.</p> | Pathology | Testicular tumors |

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

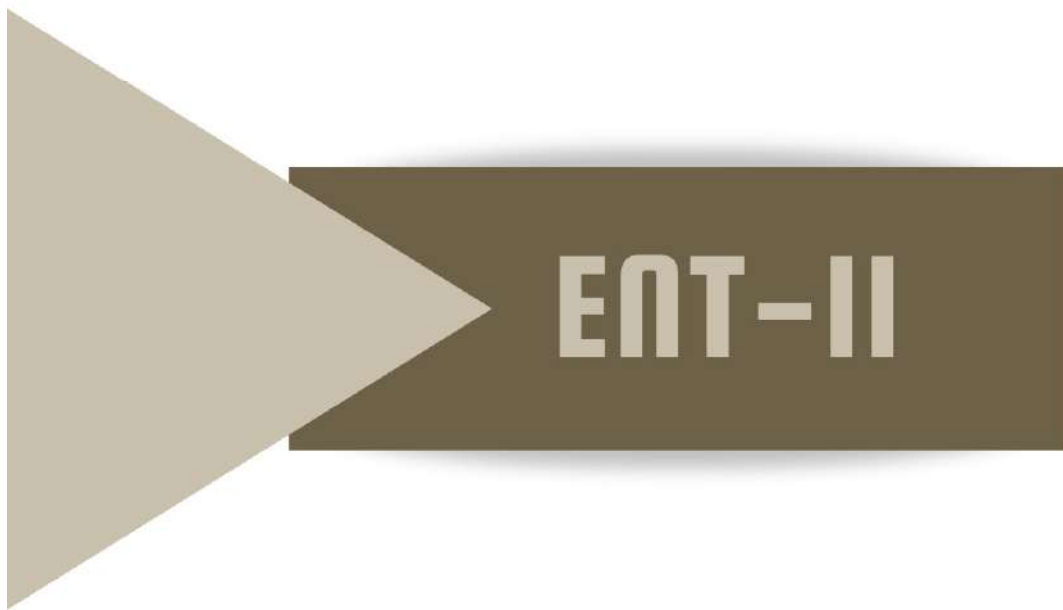
PRACTICAL / LAB WORK

| 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

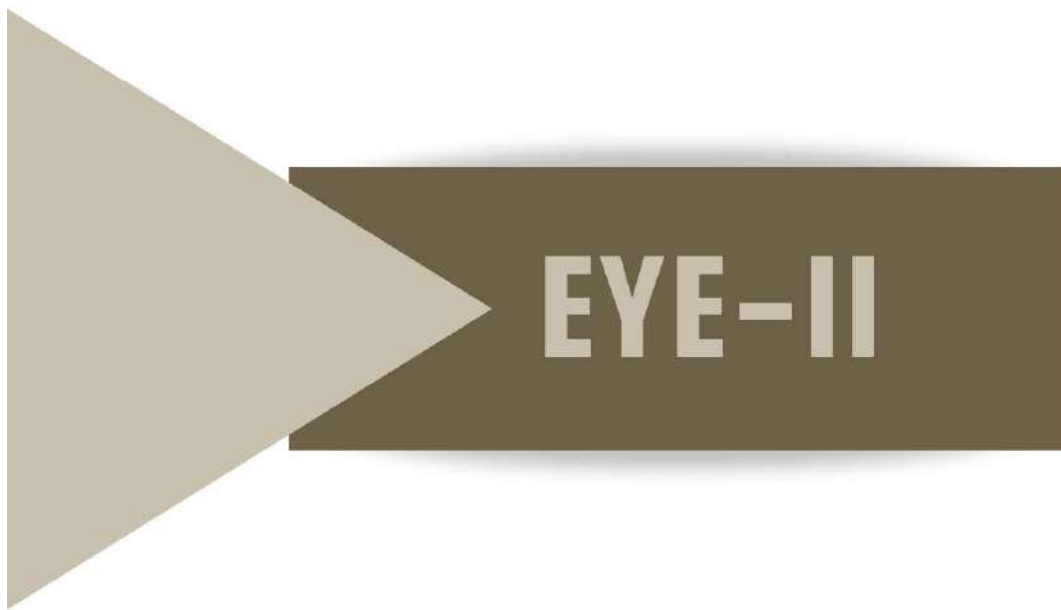
ENT-II (NOSE)

| CODE | SPECIFIC LEARNING OUTCOMES | INTEGRATING DISCIPLINE | TOPIC |
|---------------|--|------------------------|---|
| ENT2-Nose-001 | <p>Identify important structures in the surgical anatomy of the nose that require care during surgery.</p> <p>Describe the surgical anatomy of the paranasal sinuses, emphasizing relations with vital structures.</p> <p>Describe mucociliary clearance and its role in sinus health and postoperative outcomes.</p> <p>Correlate surgical anatomy and physiology with common clinical conditions (e.g., epistaxis, sinusitis) and their surgical management.</p> | ENT/Anatomy/Physiology | Surgical anatomy and physiology of nose and paranasal sinuses |
| ENT2-Nose-002 | <p>Describe the clinical features, management, and complications of following infections.</p> <ol style="list-style-type: none"> i. Boil ii. Cellulitis iii. Vestibulitis <p>Diagnose on basis of the clinical features, outline management plan, and discuss the complications of following:</p> <ol style="list-style-type: none"> i. Foreign bodies in nose ii. Maggots nose iii. Rhinolith | ENT | Diseases of the External Nose and Nasal Vestibule |
| ENT2-Nose-003 | <p>Differentiate between simple snoring and obstructive sleep apnea syndrome (OSAS).</p> <p>Explain the underlying mechanisms and causes.</p> <p>Describe the clinical presentation and complications.</p> <p>Identify the diagnostic methods and investigations.</p> <p>Discuss the various treatment options.</p> | | Snoring and Sleep Apnea |
| ENT2-Nose-004 | <p>Identify the etiology of Deviated Nasal Septum (DNS) and its types.</p> <p>Describe clinical presentation.</p> | | Nasal Septum Deformities |

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| | <p>Enlist the surgical procedures to correct DNS.</p> <p>Identify complications of nasal septal surgery.</p> <p>Enlist the causes of Septal Perforation.</p> <p>Describe its clinical presentation.</p> <p>Enlist investigations to rule out cause of septal perforation.</p> <p>Outline the management plan.</p> <p>Enlist the causes of Septal Abscess.</p> <p>Identify its clinical presentation and complications.</p> <p>Outline the treatment of septal abscess.</p> | | |
| ENT2-Nose-005 | <p>Define and classify Rhinitis.</p> <p>Describe clinical features of infective rhinitis with management.</p> <p>Describe the clinical features of following types of non-infective rhinitis and their management:</p> <ol style="list-style-type: none"> i. Allergic Rhinitis ii. Vasomotor Rhinitis iii. Atrophic Rhinitis iv. Hypertrophic Rhinitis v. Rhinitis Medicamentosa | ENT | Rhinitis (Infective and Non-infective) |
| ENT2-Nose-006 | <p>Define Sinusitis.</p> <p>Describe clinical presentation.</p> <p>Enlist investigations.</p> <p>Describe the treatment of acute and chronic Sinusitis.</p> <p>Enlist the surgical procedures done in case of chronic Sinusitis.</p> <p>Identify complications of Sinusitis.</p> | | Infections of the Paranasal Sinuses |
| ENT2-Nose-007 | <p>Define Nasal Polyp.</p> <p>Describe its etiology and clinical features.</p> <p>Differentiate between Antro choanal and ethmoidal polyps.</p> <p>Outline the management plan.</p> | ENT | Nasal Polyps |
| ENT2-Nose-008 | <p>Enlist the causes of Epistaxis.</p> <p>Describe its clinical features.</p> <p>Outline initial management and preventive strategies.</p> | | Epistaxis |

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| ENT2- Nose- 009 | <p>Identify clinical features of maxillofacial trauma.</p> <p>Enlist necessary investigations.</p> <p>Outline steps for initial management.</p> <p>Discuss the management of the following:</p> <ol style="list-style-type: none"> i. Fracture nasal bone ii. Mandibular fracture iii. Maxillary bone fracture iv. Zygomatic fracture v. Orbital blowout fracture <p>Enlist the etiology of CSF Rhinorrhoea.</p> <p>Describe its clinical presentation.</p> <p>Outline investigations and management plan.</p> <p>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)</p> | ENT/Forensic medicine | Facial Trauma (Maxillofacial) |
| ENT2- Nose- 010 | <p>Describe the clinical features and ENT manifestations of Nasal Tuberculosis.</p> <p>Explain the pathology, clinical presentation, and complications of leprosy involving the nose.</p> <p>Discuss the clinical features, diagnosis, and management of invasive Aspergillosis of the paranasal sinuses.</p> <p>Describe the presentation, rapid progression, and surgical importance of Mucormycosis.</p> <p>Explain the nasal and systemic manifestations of Wegener's granulomatosis and its diagnostic approach.</p> <p>Describe ENT features of Systemic Lupus Erythematosus with emphasis on nasal involvement.</p> <p>Discuss the clinical features and diagnostic findings of Sarcoidosis affecting the nose and paranasal sinuses.</p> | ENT | Granulomatous Disorders of Nose & Paranasal Sinuses |

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| ENT2- Nose- 011 | <p>Describe the pathology, clinical features, and surgical importance of Inverted Papilloma.</p> <p>Explain the clinical presentation, diagnosis, and management principles of Transitional cell carcinoma of the sinonasal region.</p> <p>Correlate the surgical anatomy of the sinonasal region with the spread and complications of these neoplasms.</p> | ENT/Pathology | Sino nasal neoplasm |
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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 | | | |
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| EYE-II | | | |
| CODE | SPECIFIC LEARNING OUTCOMES | INTEGRATING DISCIPLINE | TOPIC |
| Eye2-001 | <p>Define uveitis and classify based on anatomical location and etiology.</p> <p>Describe the pathophysiology of uveitis.</p> <p>Identify the key clinical features of uveitis.</p> <p>Differentiate uveitis from other causes of red eye using history and clinical examination.</p> <p>Explain the principles of treatment, including corticosteroid therapy, immunosuppressive agents, and management of complications.</p> | Ophthalmology | Uveal tract |
| Eye2-002 | <p>Describe the normal pupillary reactions (direct light reflex, consensual light reflex, and accommodation reflex).</p> <p>Describe abnormal pupillary reactions (Marcus Gunn pupil/RAPD, Argyll Robertson pupil, Adie's pupil and Horner's syndrome with their underlying causes).</p> | | Pupil |
| Eye2-003 | <p>Classify cataract.</p> <p>Describe cataract secondary to systemic diseases.</p> <p>Explain the symptoms, signs, investigations, and management plan for congenital cataract.</p> <p>Diagnose acquired cataract based on symptoms, signs, pathophysiology and investigation findings.</p> <p>Justify selection of treatment options for acquired cataract.</p> <p>Enumerate the per and post-operative complications of cataract surgery</p> <p>Explain congenital cataract secondary to TORCH infections.</p> | | Lens |
| Eye2-004 | <p>Define glaucoma.</p> <p>Classify the different types of glaucoma.</p> | | Ophthalmology |

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

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

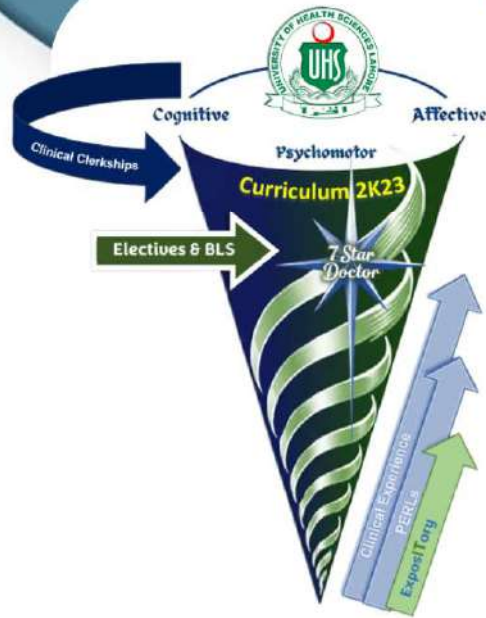
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| | <p>Explain the optical and anatomical basis of each refractive error.</p> <p>Identify key clinical features and diagnostic methods used to detect refractive errors.</p> <p>Outline the main management options, including spectacles, contact lenses,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

Syllabus



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

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| | <p>Describe its etiology.</p> <p>Outline investigation and discuss management plan.</p> <p>Identify potential complications.</p> <p>Diagnose acromegaly on the basis of characteristic signs and symptoms.</p> <p>Differentiate acromegaly from gigantism.</p> <p>Describe the underlying etiology.</p> <p>Outline the approach to investigation and discuss management strategies.</p> <p>Enlist complications.</p> | | |
| EnR-Pa-006 | <p>Classify pituitary adenomas.</p> <p>Describe etiopathogenesis of pituitary adenomas.</p> <p>Describe their gross and microscopic pathological features.</p> <p>Correlate the clinical features with the type of hormone secreted (prolactinoma, somatotroph adenoma, corticotroph adenoma).</p> <p>Discuss the complications.</p> <p>Outline the diagnostic approach including hormonal assays, imaging findings, and histopathology.</p> | Pathology | Pituitary Adenomas |
| EnR-En-007 | <p>Diagnose SIADH based on signs and symptoms.</p> <p>Explain underlying mechanism leading to the development of SIADH.</p> <p>List the investigations and plan management.</p> <p>List the potential complications of SIADH.</p> | Endocrinology/ Medicine | SIADH |
| EnR-En-008 | <p>Describe the role of melatonin in regulating circadian rhythm.</p> <p>Recognize clinical implications of melatonin deficiency or excess.</p> <p>Outline the use of melatonin supplements in clinical practice.</p> | Endocrinology /Medicine | Pineal Dysfunction and Sleep Disorders |
| EnR-Ph-009 | <p>Classify hypothalamic and pituitary hormones and state their functions.</p> <p>Describe the pharmacokinetics of pituitary and hypothalamic hormones.</p> | Pharmacology | Hypothalamic and Pituitary Hormones |

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| | <p>Explain the mechanism of action of these hormones.</p> <p>Discuss the pharmacological effects of pituitary and hypothalamic hormones.</p> <p>Identify their clinical uses.</p> <p>List potential adverse effects.</p> <p>Describe drug interactions involving hypothalamic and pituitary hormones.</p> <p>Enlist contraindications for the use of hypothalamic and pituitary hormones.</p> | | |
| EnR-Ph-010 | <p>Enlist prolactin antagonists (dopamine agonists).</p> <p>Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications.</p> | Pharmacology | Prolactin Antagonists (Dopamine Agonists) |
| EnR-Ph-011 | <p>Describe the pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications of oxytocin.</p> | Pharmacology | Oxytocin |
| EnR-Ph-012 | <p>Describe the pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications of vasopressin.</p> <p>Enumerate vasopressin antagonists and describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications.</p> | Pharmacology | Vasopressin and Vasopressin Antagonists |

THYROID AND PARATHYROID DISORDERS

| CODE | SPECIFIC LEARNING OUTCOMES | DISCIPLINE | TOPIC |
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| EnR-En-013 | <p>Enlist causes of hypothyroidism.</p> <p>Discuss the pathophysiology of decreased thyroid hormone production.</p> <p>Identify the clinical features and complications of hypothyroidism.</p> <p>Interpret diagnostic tests of TSH, T₃, T₄.</p> | Endocrinology /Medicine | Hypothyroidism |

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| | Outline treatment plan and long-term follow-up. | | |
| EnR-En-014 | <p>Explain the pathophysiology of excessive thyroid hormone production and its systemic effects.</p> <p>Enlist etiology of hyperthyroidism.</p> <p>Explain the autoimmune mechanism and clinical triad of Graves' disease.</p> <p>Diagnose hyperthyroidism based on the symptoms and signs, laboratory and imaging diagnostic findings.</p> <p>Discuss medical and surgical management strategies.</p> <p>Explain the pathophysiology, precipitating factors, clinical features, and emergency management of thyroid storm.</p> <p>Explain the importance of long-term monitoring and patient education regarding medication adherence and follow-up.</p> | Endocrinology /Medicine | Hyperthyroidism |
| EnR-Pa-015 | <p>Classify thyroid tumors based on histopathological types: papillary, follicular, medullary, anaplastic.</p> <p>Identify clinical presentation, risk factors, and diagnostic approaches including molecular testing.</p> <p>Identify prognostic indicators and follow-up requirements.</p> | Pathology | Thyroid Neoplasms |
| EnR-Ph-016 | <p>Describe different thyroid preparations.</p> <p>Describe the pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications of thyroid preparations.</p> | Pharmacology | Thyroid Preparations |
| EnR-Ph-017 | <p>Classify anti-thyroid drugs.</p> <p>Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications.</p> | Pharmacology | Anti-Thyroid Drugs |
| EnR-Ph-018 | Describe the Jod-Basedow phenomenon caused by iodides. | Pharmacology | Iodides and Related Phenomena |

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

| PANCREATIC DISORDERS | | | |
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| CODE | SPECIFIC LEARNING OUTCOMES | DISCIPLINE | TOPIC |
| EnR-En-025 | <p>Describe the underlying pathophysiology of pancreatic β-cells leading to insulin deficiency.</p> <p>Diagnose Type 1 Diabetes Mellitus based on clinical presentation and diagnostic findings.</p> <p>Identify acute complications of T1DM.</p> <p>Describe the pathophysiology, clinical manifestations, and laboratory findings of diabetic ketoacidosis.</p> <p>Outline the management principles of Type 1 Diabetes Mellitus, focusing on insulin therapy, dietary regulation, lifestyle modification, and self-monitoring of blood glucose.</p> | Endocrinology/ Medicine/ Pathology | Diabetes Mellitus Type 1 |
| EnR-En-026 | <p>Identify clinical presentation of Type 2 Diabetes and differentiate it from type 1 diabetes.</p> <p>Describe the pathophysiology of insulin resistance and relative insulin deficiency.</p> <p>Identify risk factors.</p> <p>Discuss diagnosis and monitoring.</p> <p>Outline management strategies and patient counselling.</p> | | Diabetes Mellitus Type 2 |
| EnR-Ph-027 | Classify oral antidiabetic drugs | Pharmacology | Oral Antidiabetic Drugs |
| EnR-Ph-029 | <p>Classify insulins.</p> <p>Describe the pharmacokinetics of different insulin preparations.</p> <p>Explain the mechanism of action of insulin.</p> <p>Describe the pharmacological effects and efficacy of insulin.</p> <p>Enumerate the clinical uses of insulin.</p> <p>Discuss adverse effects, drug interactions, and contraindications of insulin.</p> | Pharmacology | Insulin |

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| | 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 |

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| EnR-En-037 | <p>Describe the pathophysiology of Cushing's Syndrome.</p> <p>Differentiate between Cushing's syndrome and Cushing's disease.</p> <p>Diagnose Cushing's syndrome based on key clinical features.</p> <p>Interpret relevant diagnostic investigations including cortisol levels and dexamethasone suppression test.</p> <p>Outline the principles of management, including surgical and medical options.</p> | Endocrinology/ Medicine | Cushing's Syndrome |
| EnR-En-038 | <p>Explain the pathophysiology of adrenal insufficiency leading to Addison's disease.</p> <p>Diagnose Addison's disease based on key clinical presentation.</p> <p>Interpret diagnostic tests including serum cortisol, ACTH, and electrolyte levels.</p> <p>Outline the management plan.</p> | Endocrinology/ Medicine | Addison's Disease |
| EnR-En-039 | <p>Explain the underlying pathophysiology of Conn's Syndrome.</p> <p>Identify the key clinical manifestations and correlate them with the underlying biochemical changes.</p> <p>Interpret the laboratory findings and diagnostic tests used to confirm Conn's syndrome.</p> <p>Outline the principles of management, including medical and surgical treatment options.</p> | Endocrinology/ Pathology | Conn's Syndrome |
| EnR-Pa-040 | <p>Classify adrenal tumors.</p> <p>Describe the etiopathogenesis of pheochromocytoma.</p> <p>Explain the morphological features of pheochromocytoma.</p> <p>Describe the clinical manifestations due to excess catecholamine secretion.</p> <p>Interpret relevant laboratory and imaging findings used in the diagnosis of adrenal tumors.</p> | Pathology/ Endocrinology | Tumors of the adrenal cortex and medulla |

| | Outline the principles of management, including surgical, medical, and supportive treatment approaches. | | |
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| 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 |

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| | <p>Classify benign, premalignant, and malignant tumors of breast.</p> <p>Enumerate molecular types of breast carcinoma.</p> <p>Describe the incidence, epidemiology, risk factors, pathogenesis, and morphology of breast carcinomas.</p> <p>Describe the prognostic and predictive factors for invasive carcinoma of breast.</p> <p>Describe grading and staging of breast carcinoma.</p> <p>Describe the role of FNAC, biopsy, and immunohistochemistry in diagnosis of breast cancer.</p> <p>Enumerate stromal tumors of breast.</p> <p>Describe the morphology of fibroadenoma and Phyllodes tumors.</p> | | |
| EnR-En-045 | <p>Describe causes of Hyperprolactinemia.</p> <p>Explain the pathophysiology of hyperprolactinemia.</p> <p>Identify clinical presentation and interpret diagnostic tests.</p> <p>Outline management plan.</p> | Endocrinology/ Medicine | Hyperprolactinemia |
| EnR-Pa-046 | <p>Describe the morphological features of uterine fibroids.</p> <p>Classify the types of fibroids based on location: submucosal, intramural, subserosal, and pedunculated.</p> <p>Explain the pathogenesis of fibroid development, including hormonal influences (estrogen and progesterone) and genetic factors.</p> | Pathology | Uterine Fibroids |
| EnR-Gyn-047 | <p>Define female Subfertility and its significance in reproductive health</p> <p>Describe type of Subfertility (primary, secondary).</p> <p>Describe the common causes of female Subfertility, including ovulatory disorders, structural abnormalities, and endocrine issues.</p> <p>Discuss the impact of lifestyle factors on female fertility.</p> | Gynaecology | Female Subfertility |

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

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| | <p>Enlist the investigations.</p> <p>Interpret the Semen Analysis parameter.</p> | | |
| EnR-Ph-050 | <p>Enumerate anabolic steroids.</p> <p>Describe pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions and contraindications of Testosterone</p> | Pharmacology | Anabolic steroids |
| EnR-Pa-051 | <p>Define premalignant uterine conditions, including endometrial hyperplasia and its types.</p> <p>Describe the pathophysiology and histological classification of endometrial hyperplasia.</p> <p>Describe the pathophysiology and histological features of Hydatidiform mole.</p> <p>Explain the pathological mechanisms underlying progression from atypical endometrial hyperplasia to endometrial carcinoma.</p> <p>Classify uterine carcinoma based on histological type (endometrial carcinoma, uterine sarcoma) and describe its pathophysiology and staging.</p> <p>Discuss the prognosis of uterine carcinoma based on stage, grade, and histological type.</p> | Pathology | Premalignant and Malignant Conditions of Uterus |
| EnR-Pa-052 | <p>Define benign cervical lesions and CIN.</p> <p>Differentiate between benign and premalignant cervical lesions based on histopathology.</p> <p>Explain the principles of cervical cytology, including Pap smear technique, interpretation, and the Bethesda reporting system.</p> <p>Describe the pathological significance of HPV infection in cervical lesions.</p> <p>Identify indications for cervical biopsy during colposcopy.</p> | Pathology | Benign and Premalignant Lesions of the Cervix |
| EnR-Pa-053 | <p>Define benign ovarian cysts and classify them (functional cysts, dermoid cysts).</p> <p>Describe the pathophysiology and histological features of functional ovarian cysts (follicular and corpus luteum cysts).</p> | Pathology | Benign and malignant ovarian tumors |

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| | <p>Define malignant ovarian neoplasms and categorize them into epithelial, germ cell, and sex-cord stromal tumors.</p> <p>Explain the pathophysiology and molecular mechanisms involved in ovarian tumor development.</p> | | |
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PRACTICAL / LAB WORK

| CODE | SPECIFIC LEARNING OUTCOMES | INTEGRATING DISCIPLINE | TOPIC |
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| 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 |
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| 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 |

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| Derm2-006 | <p>Explain the etiology and role of Malassezia, sebum, immune factors.</p> <p>Identify clinical features of seborrheic dermatitis.</p> <p>Differentiate seborrheic dermatitis from psoriasis, atopic dermatitis, and pediculosis.</p> <p>Outline treatment and preventive strategies for relapse control.</p> | Dermatology | Seborrheic Dermatitis |
| Derm2-007 | <p>Differentiate between irritant and allergic contact dermatitis in terms of etiopathogenesis, and clinical features.</p> <p>Identify the clinical features of contact dermatitis.</p> <p>Differentiate contact dermatitis from atopic dermatitis, urticaria, and scabies.</p> <p>Outline treatment plan and preventive measures.</p> | Dermatology | Contact Dermatitis |
| Derm2-008 | <p>Describe the etiology and pathophysiology of urticaria.</p> <p>Identify clinical features.</p> <p>Differentiate urticaria from contact dermatitis, scabies, and drug reactions on basis of sign and symptoms.</p> <p>Outline emergency management for angioedema/anaphylaxis.</p> | Dermatology/ Medicine | Urticaria |
| Derm2-009 | <p>Define bullous disorders.</p> <p>Classify immune-mediated bullous disorders.</p> <p>Explain the pathogenesis of:</p> <ol style="list-style-type: none"> i. Pemphigus vulgaris ii. Bullous pemphigoid iii. Dermatitis herpetiformis <p>Describe the clinical presentation and lesion morphology of each disorder.</p> <p>Differentiate between these disorders on the basis of site, blister type, and mucosal involvement.</p> <p>Enlist appropriate diagnostic tests.</p> <p>Outline management plan.</p> <p>Enlist potential complications and their preventive measures.</p> | Dermatology | Bullous disorders |
| | Define epidermolysis bullosa. | Dermatology | |

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| | <p>Explain the underlying molecular and genetic mechanisms leading to skin fragility in EB.</p> <p>Describe the clinical features and complications associated with EB.</p> <p>Outline the diagnostic approaches and principles of management.</p> | | |
| | <p>Define infective bullous disorders.</p> <p>Classify them based on causative agents.</p> <p>Identify the etiological factors and common pathogens.</p> <p>Describe characteristic clinical features of major infective bullous disorders (bullous impetigo and staphylococcal scalded skin syndrome) with complications.</p> <p>Outline the principles of management.</p> | Dermatology | |
| Derm2-010 | <p>Explain the etiopathogenesis of acne vulgaris.</p> <p>Identify the clinical features and types of acne lesions.</p> <p>Differentiate acne vulgaris from other acneiform eruptions.</p> <p>Outline the treatment plan including preventive and long-term management strategies.</p> <p>Explain mechanism of action and adverse effects of drugs used in acne.</p> | Dermatology/ Pharmacology | Acne Vulgaris |
| Derm2-011 | <p>Describe the etiopathogenesis of psoriasis.</p> <p>Identify the clinical features and common variants.</p> <p>Outline treatment modalities with preventive and lifestyle strategies.</p> | Dermatology | Psoriasis |
| Derm2-012 | <p>Describe the etiopathogenesis of lichen planus.</p> <p>Identify the classical clinical features.</p> <p>Enlist the differential diagnosis of lichen planus.</p> <p>Outline the treatment plan.</p> <p>Discuss preventive and long-term considerations, including malignant transformation risk.</p> | Dermatology/ Pathology | Lichen Planus |
| Derm2-013 | <p>Differentiate erythema multiforme and erythema nodosum in terms of etiology, clinical features, morphology,</p> | Dermatology | Erythema Multiforme and erythema nodosum |

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| | distribution, associated conditions, and principles of management. | | |
| Derm2-014 | Identify drug causing Stevens–Johnson syndrome. Describe the characteristic signs and symptoms. Outline management plan. | | 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. | Dermatology/ Pharmacology | 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. Identify acute bacterial skin infections caused by Streptococcus pyogenes. Describe their clinical patterns including non-bullous impetigo, ecthyma, and erysipelas. Identify the role of group A β -hemolytic streptococci (and occasionally groups B, C, G) as causative organisms. Outline the clinical course, complications, and management including systemic antibiotics. | Dermatology/ Microbiology | Acute bacterial skin infections |
| Derm2-017 | Describe the etiological agent and routes of infection of cutaneous tuberculosis. Identify the major clinical forms of cutaneous tuberculosis. Outline the diagnostic approach and treatment. | Dermatology/ Microbiology | |

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| | <p>Describe the causative organism, transmission, and pathogenesis of leprosy.</p> <p>Identify the clinical spectrum of leprosy and cardinal signs of diagnosis.</p> <p>Explain the complications and deformities resulting from nerve involvement in leprosy.</p> <p>Outline the diagnostic approach and management principles.</p> | Dermatology/ Microbiology | |
| Derm2-018 | <p>Describe the etiology and types of warts.</p> <p>Identify the clinical presentation of warts.</p> <p>Enlist the differential diagnosis.</p> <p>Outline the management options with preventive measures.</p> | Dermatology | Viral skin infections |
| | <p>Explain the etiology and mode of transmission of molluscum contagiosum virus.</p> <p>Identify the clinical features and distribution of molluscum contagiosum lesions.</p> <p>Differentiate molluscum contagiosum from warts, milia, and basal cell carcinoma on basis of clinical features.</p> <p>Discuss treatment options and prevention strategies.</p> | Dermatology/ Microbiology | |
| | <p>Explain the etiopathogenesis of herpes zoster (Shingles) including reactivation of varicella-zoster virus.</p> <p>Describe the clinical features, dermatomal distribution, and prodromal symptoms.</p> <p>Differentiate herpes zoster from HSV, contact dermatitis, and impetigo on basis of clinical features.</p> <p>Outline management and prevention strategies.</p> | Dermatology/ Microbiology | |
| | <p>Identify the etiology and types of herpes simplex.</p> <p>Discuss the clinical presentation of primary and recurrent HSV infections.</p> <p>Discuss differential diagnosis of herpes simplex.</p> <p>Outline the management plan.</p> | Dermatology/ Microbiology | |
| Derm2-019 | <p>Describe the etiology of tinea.</p> <p>Discuss the clinical features of different types of tinea.</p> | Dermatology | Fungal skin infections |

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

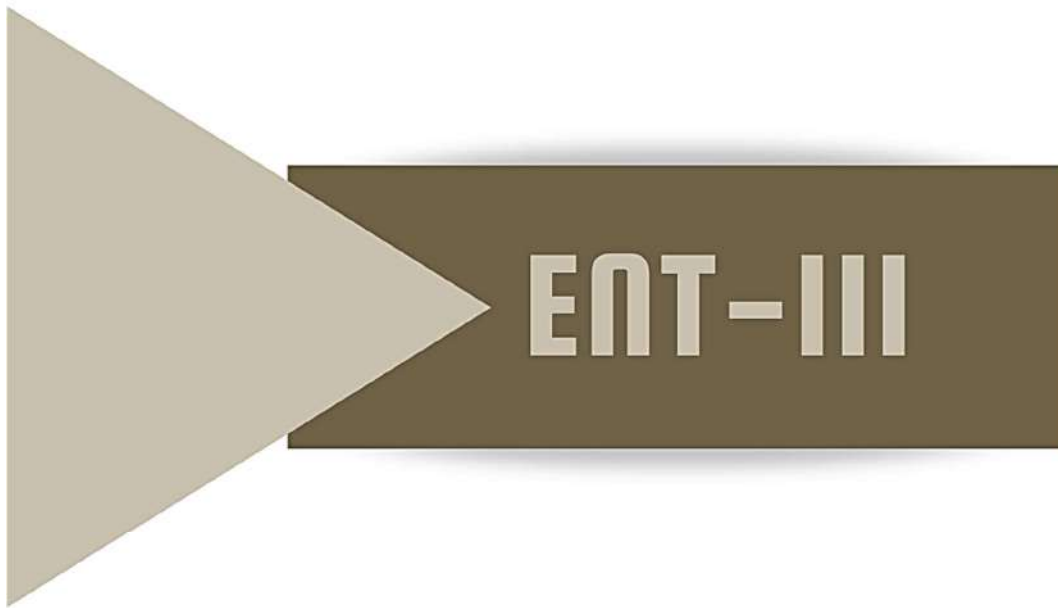
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| Derm2-023 | <p>Describe the clinical features of onychomycosis and paronychia.</p> <p>Describe nail changes in psoriasis and lichen planus.</p> <p>Identify common traumatic nail changes.</p> <p>Describe systemic associations of nail changes.</p> <p>Describe the importance of emollients and early antifungal treatment in nail care.</p> | Dermatology/ Medicine | Disorders of nails |
| | <p>Define alopecia areata.</p> <p>Explain the etiological and immunological basis of alopecia areata.</p> <p>Describe the clinical features and patterns of presentation.</p> <p>Outline the differential diagnosis.</p> <p>Discuss the management options for alopecia areata.</p> | Dermatology | |
| Derm2-024 | <p>Define and classify androgenic alopecia.</p> <p>Explain the hormonal and genetic factors contributing to androgenic alopecia.</p> <p>Describe the clinical features and diagnostic criteria.</p> <p>Outline the management plan.</p> | Dermatology | Disorders of hairs |
| | <p>Define hirsutism and differentiate it from hypertrichosis.</p> <p>Identify the common causes of hirsutism.</p> <p>Outline the diagnostic workup for hirsutism.</p> <p>Discuss medical, cosmetic, and lifestyle-based management strategies.</p> | Dermatology/ Medicine | |
| Derm2-025 | <p>Discuss types of naevi with reference to clinical and morphological features.</p> <p>Differentiate benign nevi from malignant melanoma on the basis of clinical signs.</p> | Pathology/ Dermatology | Naevi |
| Derm2-026 | <p>Describe the signs and symptoms of malignant melanoma.</p> <p>Enlist the risk factors.</p> <p>Outline the diagnostic investigations and management.</p> <p>Explain the importance of early detection for survival outcomes.</p> | Pathology/ Dermatology | Cutaneous tumors |

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|--|---|---------------------------|--|
| | 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)

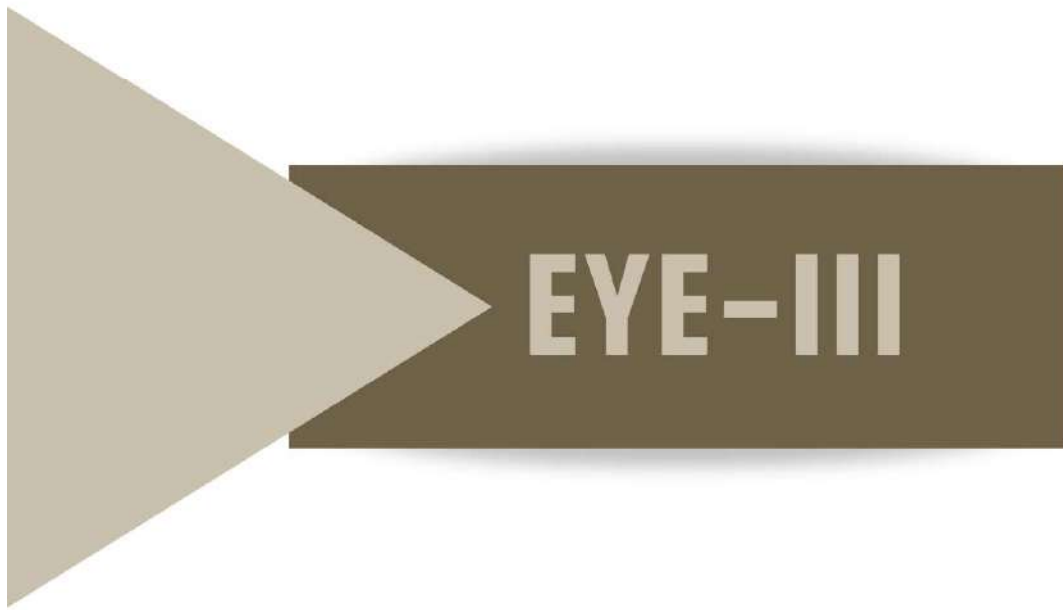
| CODE | SPECIFIC LEARNING OUTCOMES | INTEGRATING DISCIPLINE | TOPIC |
|----------------|--|------------------------|-------------------------------|
| ENT-Throat-001 | <p>Enlist cystic lesions of oral cavity.</p> <p>Discuss differential diagnosis of following cystic lesions of oral cavity and their treatment</p> <ol style="list-style-type: none"> i. Mucoceles ii. Ranula iii. Dermoid cyst | ENT | Cystic lesions of oral cavity |
| ENT-Throat-002 | <p>Identify the clinical features and order investigations of sialadenitis, sialolithiasis, and sialectasis.</p> <p>Outline the treatment plan for sialadenitis, sialolithiasis, and sialectasis</p> | | Salivary Gland Disorders |
| ENT-Throat-003 | <p>Describe the etiology and risk factors of aphthous ulcer.</p> <p>Explain the morphological features of aphthous ulcer.</p> <p>Differentiate aphthous ulcers from other oral ulcers.</p> <p>Outline the management plan of aphthous ulcer.</p> | | Aphthous ulcer |
| ENT-Throat-004 | <p>Describe the etiology, predisposing factors, and clinical features of Vincent's angina.</p> <p>Differentiate Vincent's angina from diphtheria.</p> <p>Discuss the diagnostic approach, including clinical examination and smear findings.</p> <p>Enlist the complications associated with Vincent's angina.</p> <p>Outline the management plan of Vincent's angina.</p> | | Vincent's angina |
| ENT-Throat-005 | <p>Describe the clinical features, differential diagnosis, and management of leukoplakia and erythroplakia of the tongue.</p> | | Leukoplakia and erythroplakia |
| ENT-Throat-006 | <p>Describe the surgical anatomy of the nasopharynx, oropharynx, and hypopharynx.</p> <p>Identify important anatomical relations and structures at risk during surgery.</p> | | ENT/Anatomy |

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| 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 |

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

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| ENT-Throat-017 | <p>Describe the clinical presentation of acute Epiglottitis.</p> <p>Enumerate the complications of Acute Epiglottitis.</p> <p>Outline the principles of emergency management of acute epiglottitis with emphasis on airway protection.</p> <p>Describe the role of antibiotics and supportive care in Acute Epiglottitis.</p> | | Acute Epiglottitis |
| ENT-Throat-018 | <p>Enlist congenital disorders of Larynx .</p> <p>Describe the clinical features, diagnosis, and natural course of laryngomalacia.</p> <p>Discuss the presentation, complications, and management of juvenile recurrent laryngeal papillomatosis.</p> | | Congenital conditions of Larynx |
| ENT-Throat-019 | <p>Describe the etiology and predisposing factors of following neck infections:</p> <ol style="list-style-type: none"> i. Cervical lymphadenitis and abscess ii. Cold abscess iii. Ludwig’s angina iv. Parapharyngeal abscess v. Retropharyngeal abscess vi. Peritonsillar abscess <p>Describe the clinical presentation of neck space infections including warning signs.</p> <p>Interpret investigations (laboratory and imaging) required for the diagnosis of neck infections.</p> <p>Formulate a management plan for neck space infections.</p> <p>Explain the potential complications of untreated neck infections.</p> | ENT | Infections of Head and Neck Spaces |
| ENT-Throat-020 | <p>Enlist the common types and sources of aero-digestive tract foreign bodies.</p> <p>Describe the clinical presentation of a patient presenting with aero-digestive tract foreign bodies.</p> <p>Discuss the diagnostic approach in a patient with suspected aero-digestive tract foreign bodies.</p> | ENT/ Emergency medicine | Aero-digestive tract foreign bodies. |

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

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

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

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

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| Eye3-006 | <p>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.</p> <p>Discuss the treatment plan for eyelid tumors-</p> | Ophthalmology/ Pharmacology | Ophthalmic Therapeutics |
| Eye3-007 | <p>Antibiotics, Antivirals, and Antifungals:</p> <ul style="list-style-type: none"> 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. <p>Local Anesthetics:</p> <ul style="list-style-type: none"> 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. <p>Fluorescein Dye:</p> <ul style="list-style-type: none"> State the uses of fluorescein in ophthalmology (e.g., corneal ulcer, angiography). Recognize adverse reactions and limitations. <p>Mydriatics and Cycloplegics:</p> <ul style="list-style-type: none"> Differentiate between mydriatics and cycloplegics. Discuss indications for their use (e.g., refraction, uveitis, funduscopy). Identify contraindications (e.g., narrow-angle glaucoma) and adverse effects. <p>Corticosteroids:</p> <ul style="list-style-type: none"> Describe the role of topical steroids in ocular inflammation. | Ophthalmology | Diagnostics |

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

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03

Section



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

| Block-XI | | | | | | |
|--|-------------------------------------|------------------|---|---------------------------------------|---|------------------|
| Modules | Theory | | Practical | | | |
| | MCQs <i>(1 mark each)</i> | Marks | OSPE/OSCE <i>(8 marks each)</i> | OSVE <i>(10 marks each)</i> | Short Case <i>(20 marks each)</i> | 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 | OSPE/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 | | | | | | |

| MBBS YEAR-4 | | | | | | |
|---|---------------|--------------|--|-------------------------------|--------------|--------------------|
| BLOCK-X | | | | | | |
| Modules | Theory | | Practical | | | Total Marks |
| Community Medicine & Family Health-II, GIT & Nutrition-II, Eye and ENT-I | MCQs (140) | 140 Marks | OSCE | 10 stations x 8 marks=80 | 140 Marks | 280 Marks |
| | | | OSVE | 02 Stations x 10 marks=20 | | |
| | | | Short case Eye-I | 1 short case x 20 marks=20 | | |
| | | | Short case ENT-I | 1 short case x 20 marks=20 | | |
| Internal Assessment (10%) Theory | | 35 Marks | Internal Assessment (10%) Practical | | 35 Marks | 70 Marks |
| Total=350 Marks | | | | | | |
| BLOCK-XI | | | | | | |
| Modules | Theory | | Practical | | | Total Marks |
| Neuroscience-II, Psychiatry & Behavioural Sciences, Renal-II, Eye and ENT-II | MCQs (140) | 140 Marks | OSCE | 10 stations x 8 marks=80 | 140 Marks | 280 Marks |
| | | | OSVE | 02 Stations x 10 marks=20 | | |
| | | | Short case Eye-II | 1 short case x 20 marks=20 | | |
| | | | Short case ENT-II | 1 short case x 20 marks=20 | | |
| Internal Assessment (10%) Theory | | 35 Marks | Internal Assessment (10%) Practical | | 35 Marks | 70 Marks |
| Total=350 Marks | | | | | | |
| BLOCK-XII | | | | | | |
| Module | Theory | | Practical | | | Total Marks |
| Endocrine and Reproduction-II, Dermatology, Eye and ENT-III | MCQs (140) | 140 Marks | OSCE | 10 stations x 8 marks=80 | 140 Marks | 280 Marks |
| | | | OSVE | 02 Stations x 10 marks=20 | | |
| | | | Short case Eye-III | 1 short case x 20 marks=20 | | |

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|-------------------------------------|--|-------------|-----------------------|--|-------------|-----------------|
| | | | Short case ENT-III | 1 short case x 20 marks=20 | | |
| Internal Assessment (10%) Theory | | 35 Marks | | Internal Assessment (10%) Practical | 35 Marks | 70 Marks |
| Total=350 Marks | | | | | | |
| GRAND TOTAL=1050 Marks | | | | | | |

| ANNUAL EXAMINATION (MBBS YEAR-04) | | | |
|--|---|--------------|----------------------------|
| Annual Theory Exam Scheme | | | |
| Theory exam | MCQs (1 mark each) | Marks | Internal Assessment |
| Paper 1 (BLOCK X) | 140 | 140 marks | 35 marks |
| Paper 2 (BLOCK XI) | 140 | 140 marks | 35 marks |
| Paper 3 (BLOCK XII) | 140 | 140 marks | 35 marks |
| Total Marks Theory=525 Marks | | | |
| Annual Practical Exam Scheme | | | |
| Clinical Skill Exam | OSCE & OSVE | Marks | Internal Assessment |
| PS1: General Clinical Skills | OSCE: 10 Stations x 8 marks = 80 marks OSVE: 04 Stations x 15 marks = 60 marks | 140 marks | 35 marks |
| PS2: EYE | OSCE: 10 Stations x 8 marks = 80 marks Short case: 03 x 20 marks = 60 marks | 140 marks | 35 marks |
| PS3: ENT | OSCE: 10 Stations x 8 marks = 80 marks Short case: 03 x 20 marks = 60 marks | 140 marks | 35 marks |
| Total Marks Practical=525 Marks | | | |
| GRAND TOTAL=1050 Marks | | | |
| Note: | | | |
| <ul style="list-style-type: none"> • The time allotted for theory exam shall be 2hrs 30mins. • Time duration for each OSPE/OSCE/OSVE station will be 06 minutes and short case will be 10 minutes. | | | |

Table of Specification (MBBS Year-04)

| THEORY | | |
|--|-----------------------|------------------|
| Block-X | | |
| Modules | MCQs (1 mark each) | Marks |
| Community Medicine-II & Family health-II | 25 + 15 | 40 |
| GIT & Nutrition-II | 35 + 5 | 40 |
| Eye-I | 30 | 30 |
| ENT-I | 30 | 30 |
| Total | 140 MCQs | 140 Marks |
| Block-XI | | |
| Modules | MCQs (1 mark each) | Marks |
| Neuroscience-II | 38 | 38 |
| Psychiatry & Behavioural Sciences | 20+07 | 27 |
| Renal-II | 25 | 25 |
| Eye-II | 25 | 25 |
| ENT-II | 25 | 25 |
| Total | 140 MCQs | 140 Marks |
| Block-XII | | |
| Modules | MCQs (1 mark each) | Marks |
| Endocrine & Reproduction-II | 47 | 47 |
| Dermatology | 23 | 23 |
| Eye-III | 35 | 35 |
| ENT-III | 35 | 35 |
| Total | 140 MCQs | 140 Marks |

| PRACTICAL | | | | | | | |
|----------------------------|--------------------------------|-------------------------------|---|--|--|------------------|------------------|
| Clinical Skill Exam | Assessment tool | Block X | Block XI | Block XII | Total Marks | Total | |
| PS1 | General clinical skills | OSCE (8 marks each) | 3 (Community Medicine & family health-II + GIT & nutrition-II) | 4 (Neuroscience -II + Psychiatry & behavioural sciences + Renal-II) | 3 (Endocrine and reproduction-II + Dermatology) | 10 x 8 marks=80 | 140 Marks |
| | | OSVE (15 marks each) | 2 (Research-PERL + GIT & nutrition-II) | 1 (Neuroscience -II + Psychiatry & behavioural sciences + Renal-II) | 1 (Endocrine and reproduction-II + Dermatology) | 4 x 15 marks= 60 | |
| PS2 | EYE | OSCE (8 marks each) | 4 Eye-I | 3 Eye-II | 3 Eye-III | 10 x 8 marks=80 | 140 Marks |
| | | Short case (20 marks each) | 1 Eye-I | 1 Eye-II | 1 Eye-III | 3 x 20 marks =60 | |
| PS3 | ENT | OSCE (8 marks each) | 3 ENT-I | 3 ENT-II | 4 ENT-III | 10 x 8 marks=80 | 140 Marks |
| | | Short case (20 marks each) | 1 ENT-I | 1 ENT-II | 1 ENT-III | 3 x 20 marks =60 | |

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 grey rectangular box with the word 'Section' written in a white, cursive-style 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 | <p>Factory/hospital visit to observe occupational health hazards:</p> <ul style="list-style-type: none"> • 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 | <p>Training and implementation of data collection for research:</p> <ul style="list-style-type: none"> • 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 | <p>Data analysis hands on training:</p> <ul style="list-style-type: none"> • Analyze data using SPSS software. • Compile a structure survey report. |
| CFRC 4-CM- 004 | <p>School visit:</p> <p>Record anthropometric measurements (height, weight, BMI, mid–upper arm circumference) of school-going children.</p> <p>Recognize environmental and social factors at school that may influence nutrition (e.g., hygiene, school meals, junk food availability).</p> <p>Create awareness among children and teachers on healthy eating practices and prevention of malnutrition.</p> <p>Assess knowledge and practices of adolescent school girls regarding menstrual health.</p> |

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| | <p>Identify common menstrual health problems (e.g., dysmenorrhea, poor hygiene practices, anemia).</p> <p>Counsel adolescent girls on menstrual hygiene, nutrition, and breaking myths/taboo.</p> <p>Document and report findings from the school visit.</p> |
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| FAMILY HEALTH | |
|----------------------|--|
| Code | Skills/Task |
| CFRC 4-FH- 001 | <p>Presenting complaint: Headache</p> <ul style="list-style-type: none"> • 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 | <p>Presenting complaint: Fever</p> <ul style="list-style-type: none"> • 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 | <p>Paediatrics History Taking Skills</p> <ul style="list-style-type: none"> • 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 | <p>Presenting complaint: Generalized weakness and weight loss</p> <ul style="list-style-type: none"> • 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. |

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| CFRC 4-FH- 005 | <p>Presenting complaint: Urogenital symptoms</p> <ul style="list-style-type: none"> • 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 | <p>Common skin lesions</p> <ul style="list-style-type: none"> • Inspect common skin lesions presented in OPD. • Perform wound dressing and care. <i>(under supervision)</i> |
| CFRC 4-FH- 007 | <p>Geriatrics History Taking Skills</p> <ul style="list-style-type: none"> • 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. |

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| CFRC 4- GIT2- 008 | <p>Spleen palpation</p> <p>Examine and palpate the spleen to assess size, tenderness, and clinical abnormalities.</p> |
| CFRC 4- GIT2- 009 | <p>GI endoscopy & colonoscopy</p> <p>Observe the procedure of upper GI endoscopy and colonoscopy.</p> <p>Observe the indications, steps of patient preparation, and abnormal findings.</p> |
| CFRC 4- GIT2- 010 | <p>Prescription writing</p> <p>Write prescriptions for following:</p> <ul style="list-style-type: none"> 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 | <p>Peritoneal tap</p> <p>Observe the procedure of a peritoneal tap, including patient preparation, aseptic technique, and procedural steps.</p> |
| CFRC 4- GIT2- 012 | <p>Counsel patients on diet, nutrition, and lifestyle modifications relevant to common gastrointestinal disorders.</p> |

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 | <ul style="list-style-type: none"> • History taking <ul style="list-style-type: none"> • Take focused ENT history in a structured and concise manner. • Clinical Examination Skills <ul style="list-style-type: none"> • 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. |

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| | <ul style="list-style-type: none"> • Assess Vestibulo cerebellar function using clinical methods. • Counselling <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Ophthalmic History Taking <ul style="list-style-type: none"> • Take focused ophthalmic history in a structured and concise manner • Eye examination skills and procedures <ul style="list-style-type: none"> • 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 |

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| 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 | <p>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)</p> <p>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).</p> <p>Provide differential diagnosis based on history, MSE, and relevant investigations.</p> <p>Formulate a preliminary diagnosis and outline management plan.</p> |
| CFRC 4- PsyB hS- 002 | <p>Mental state examination</p> <p>Perform mental state examination (MSE), assessing appearance, behavior, speech, mood, thought, perception, cognition, insight, and judgment.</p> <p>Interpret findings of MSE in common psychiatric conditions.</p> |
| CFRC 4- PsyB hS- 003 | <p>Suicide risk assessment</p> <p>Conduct suicide risk assessment.</p> <p>Propose immediate management steps.</p> |
| CFRC 4- PsyB hS- 004 | <p>Aggression/violence risk assessment</p> <p>Identify and assess risk of aggression or violence in psychiatric patients.</p> <p>Propose immediate management steps.</p> |
| CFRC 4- PsyB hS- 005 | <p>Rapport building</p> <p>Establish rapport with patients and their families in a respectful, non-judgmental manner.</p> <p>Demonstrate empathetic listening and supportive communication in sensitive situations.</p> |
| CFRC 4- PsyB hS- 006 | <p>Demonstrate respect for patient autonomy and confidentiality in psychiatric practice.</p> <p>Apply ethical principles in managing patients with impaired capacity or in involuntary treatment settings.</p> |

| 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 | <p>Examination of kidneys and urinary bladder</p> <p>Inspect for abdominal distension, edema, and skin changes.</p> <p>Palpate kidneys and bladder for size, tenderness, and masses.</p> <p>Percuss kidneys and bladder for enlargement or fluid.</p> <p>Auscultate renal arteries (bruits).</p> |
| CFRC 4- Re2- 003 | <p>Urine sample collection, storage, and transport</p> <p>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)</p> |
| CFRC 4- Re2- 004 | <p>Renal imaging</p> <ul style="list-style-type: none"> • Interpret ultrasound report for hydronephrosis, stones, polycystic kidneys. • Interpret CT findings for obstruction, calculi, renal masses. |
| CFRC 4- Re2- 005 | <p>Fluid balance</p> <p>Measure and interpret fluid balance: urine input/output monitoring.</p> |
| CFRC 4- Re2- 006 | <p>Urinary catheterization</p> <p>Observe/Assist in urinary catheterization. Identify indications, contraindications, and precautions (for adult and pediatric patients).</p> |
| CFRC 4- Re2- 007 | <p>Counsel patients regarding disease, management plan, lifestyle modifications, treatment adherence.</p> |

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 | <ul style="list-style-type: none"> • History taking Obtain a focused history from patients presenting with nasal complaints • Clinical examination/management skills <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • Explain common nasal procedures to patients in simple language. • Take informed consent. • Counsel patients on preventive measures. • Medicolegal Aspects of ENT trauma <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Eye examination skills and procedures <ul style="list-style-type: none"> • Perform confrontation test to assess the visual field. • Perform digital tonometry. • Perform pupillary light reflexes (direct and consensual, swinging light reflex). • Operation theatre exposure <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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.
- Otoloscopic 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 | <p>Obtain and document clinical history and physical findings in patients thyroid disorders, Diabetes Mellitus, Cushing's syndrome, menstrual disorders, and infertility.</p> |
| CFRC 4- EnR2- 002 | <p>Thyroid examination</p> <p>Examine the thyroid gland for size, shape, nodules, tenderness, and movement with deglutition.</p> <p>Assess for signs of hypothyroidism and hyperthyroidism through pulse rate, tremor, reflexes, and eye signs.</p> <p>Interpret thyroid function tests (T₃, T₄, TSH).</p> |
| CFRC 4- EnR2- 003 | <p>Adrenal Function Assessment</p> <p>Perform examination for adrenal disorders, including assessment of blood pressure (lying and standing), skin pigmentation, and muscle power.</p> |
| CFRC 4- EnR2- 004 | <p>Diabetic Foot Examination</p> <p>Perform foot examination in a diabetic patient to assess for neuropathy, ulcers, and vascular insufficiency.</p> |
| CFRC 4- EnR2- 005 | <p>Bedside Glucose Monitoring</p> <p>Measure and interpret capillary blood glucose levels using a glucometer during patient assessment.</p> <p>Demonstrate urine testing for glucose and ketone bodies using dipsticks.</p> |
| CFRC 4- EnR2- 006 | <p>Diagnostic Tests for Diabetes Mellitus</p> <p>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.</p> |
| CFRC 4- EnR2- 007 | <p>Insulin Administration</p> <p>Demonstrate proper insulin administration technique using a syringe or insulin pen.</p> <p>Counsel the patient on insulin handling, injection sites, foot care, and dietary compliance.</p> |

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

| | |
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| 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 | <ul style="list-style-type: none"> • History taking <ul style="list-style-type: none"> • Take a focused history from patients presenting with pharyngeal and laryngeal complaints • Clinical examination/management skills <ul style="list-style-type: none"> • 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- | <ul style="list-style-type: none"> • Eye examination skills and procedures <ul style="list-style-type: none"> • Perform a squint examination. (Hirschberg test, cover–uncover test. |

| | |
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| eye3-001 | <p>Extra ocular movements).</p> <ul style="list-style-type: none"> • Perform II, III, IV, VI and VII cranial nerve examinations. <ul style="list-style-type: none"> • Operation theatre exposure <ul style="list-style-type: none"> • Observe first aid management of ocular trauma. • Integration with systemic illnesses <ul style="list-style-type: none"> • Identify ocular findings of Thyroid eye disease. • Eye diagnostics machines <ul style="list-style-type: none"> • Observe OCT, B scan, Perimetry. • Counselling • Counsel for different vision threatening, congenital, chronic, genetic eye diseases • Medicolegal Aspects of eye trauma (Forensic Medicine) <p>Describe the medicolegal implications of ocular trauma with proper documentation, and reporting of evidence collection, preservation, and dispatch.</p> <ul style="list-style-type: none"> • 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. |
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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

A graphic featuring a blue semi-circle with a dark grey border, containing the number '05' in a stylized font. Below the semi-circle is a grey rectangular box containing the word 'Section' in a white, cursive font.

05

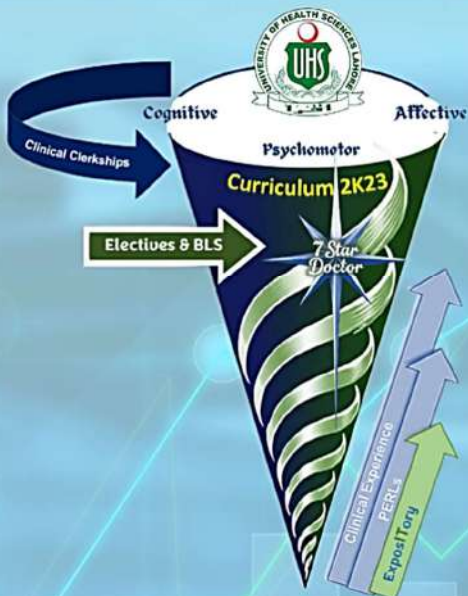
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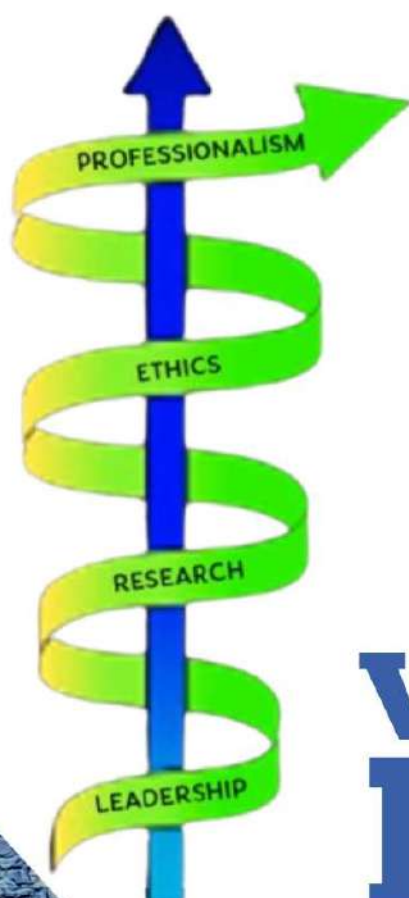
University of Health
Sciences Lahore

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

YEAR-4



PERLS

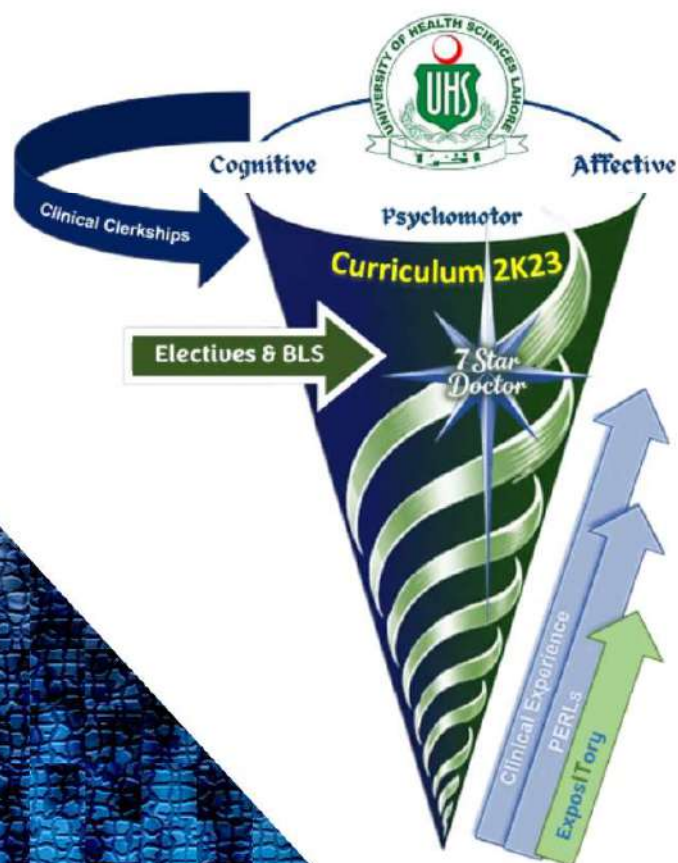


Modular Integrated Curriculum 2K23

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. | |

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| | | 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 |

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| | 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 |
| <p><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></p> | | | |
| X | Data collection | <p>Collect data in field/clinical settings.</p> <p>Apply quality control during data collection.</p> | Group work |
| | Data Management using Excel/SPSS | <p>Perform data entry, and basic analysis using software.</p> <p>Enter and manage data using Excel/SPSS basics.</p> <p>Explain basics of descriptive statistics (mean, median, mode, SD, rates).</p> <p>Interpret outputs (frequencies, charts, p-values, CI, chi-square, t-test).</p> <p>Discuss the principles of inference and significance.</p> | 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. | |
| | | Students are encouraged to submit their research in relevant journal. | |

| 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. | |
| | 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. | |

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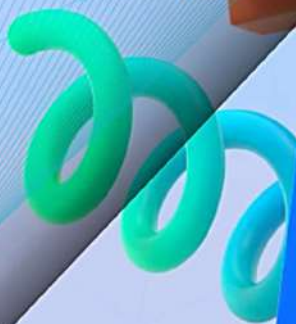
Prof. Dr. Sumera Ehsan
HOD Medical Education
University of Health Sciences Lahore

Volume-04



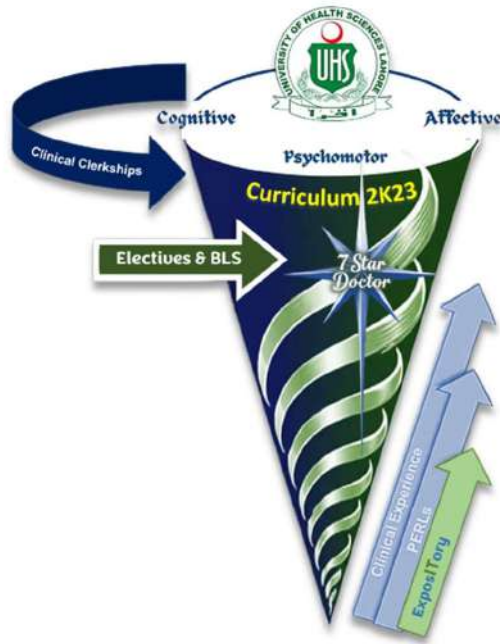
STUDENT PORTFOLIO

YEAR-04





Curriculum 2K23 Year-04



MODULE: COMMUNITY MEDICINE & FAMILY HEALTH II

DATE FROM: _____

DATE TO: _____

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| Roll No: | |
| Assignment Topic: | |
| Date: | |
| Submit a short report detailing a community health issue and propose an action plan for how healthcare professionals can fulfil their social accountability by addressing it. | |
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| Facilitator Remarks: | |

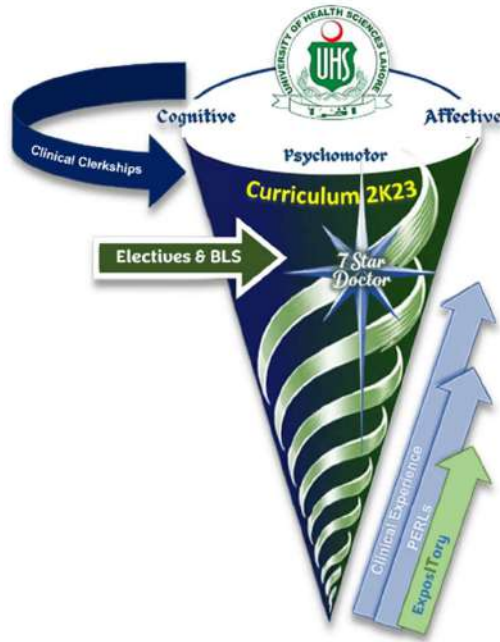
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| Roll No: | |
| Assignment Topic: | |
| Date: | |
| Submit a reflective case analysis of an ethical dilemma in community healthcare, discussing the principles of community ethics and how they guided your proposed solution. | |
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|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

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

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| Roll No: | |
| Assignment Topic: | |
| Date: | |
| <p>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</p> | |
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| Facilitator Remarks: | |



Curriculum 2K23 Year-04



MODULE: GIT & NUTRITION-II

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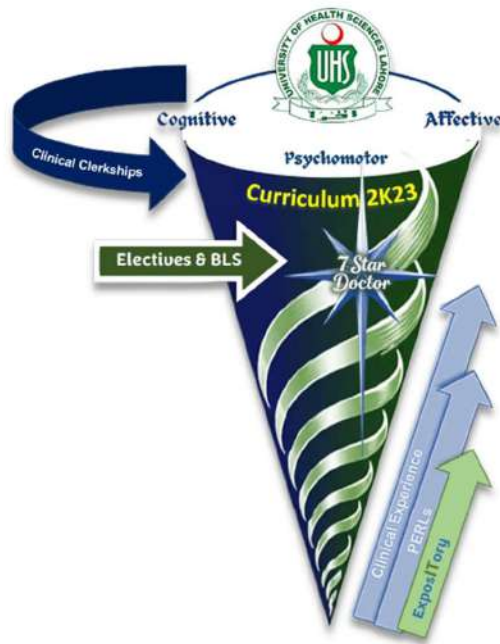
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| Roll No: | |
| Assignment Topic: | |
| Date: | |
| Submit a case analysis on the ethical issues surrounding an organ transplant scenario. Discuss how principles like fairness, consent, and cultural or religious views were considered in the decision-making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

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



Curriculum 2K23 Year-04



MODULE: ENT & EYE-I

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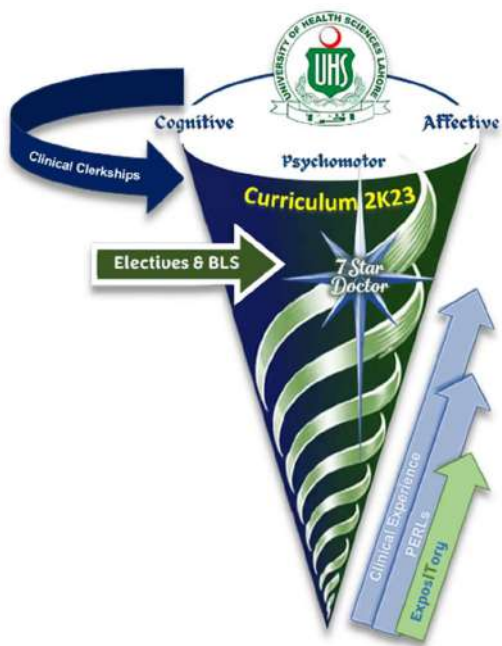
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| Roll No: | |
| Assignment Topic: | |
| Date: | |
| <p>Submit a case reflection where you observed or practised obtaining informed consent in an ENT scenario. Discuss how patient autonomy was respected and any challenges faced in ensuring the patient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

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



Curriculum 2K23 Year-04



MODULE: NEUROSCIENCES-II

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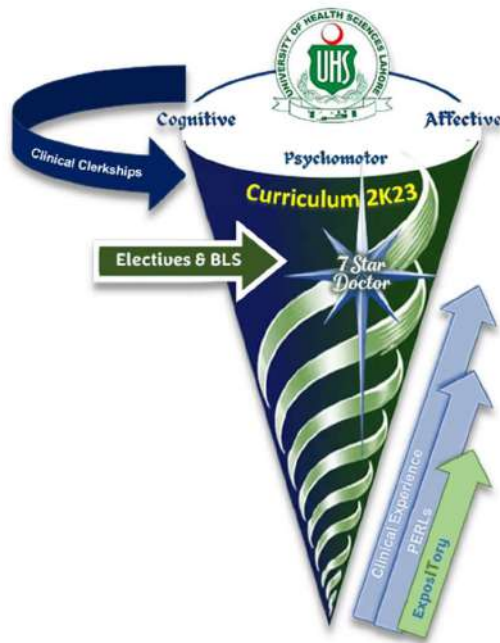
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| Roll No: | |
| Assignment Topic: | |
| Date: | |
| Submit a case study or presentation on using a digital health tool, telemedicine, or AI in healthcare, focusing on its benefits and challenges. | |
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| Facilitator Remarks: | |

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| Roll No: | |
| Assignment Topic: | |
| Date: | |
| Progress report on Data Collection for study | |
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| Facilitator Remarks: | |



Curriculum 2K23 Year-04



MODULE: PSYCHIATRY & BEHAVIORAL SCIENCES

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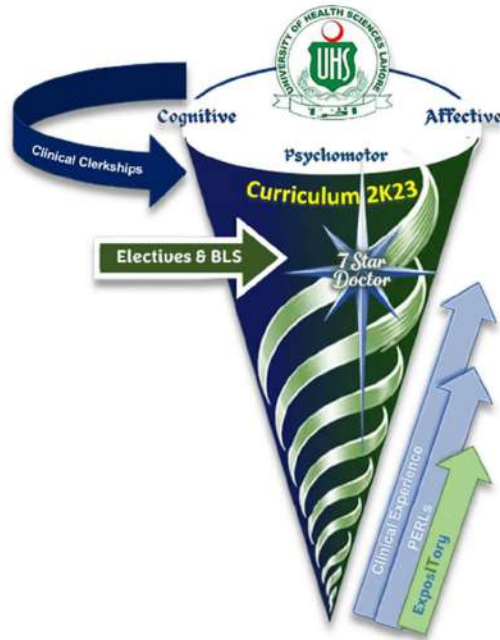
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| Roll No: | |
| Assignment Topic: | |
| Date: | |
| Submit a reflection on self-assessment validated tools for stress: Perceived Stress Scale (PSS), COPE Inventory, and Professional Quality of Life Scale (ProQOL) | |
| | |
| Facilitator Remarks: |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

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



Curriculum 2K23 Year-04



MODULE: RENAL-II

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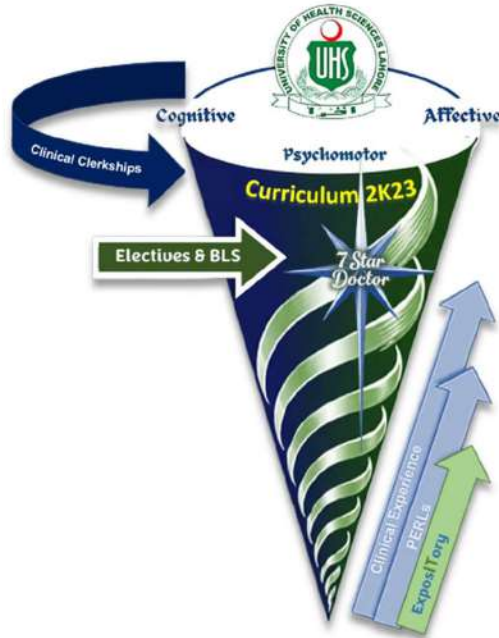
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| Roll No: | |
| Assignment Topic: | |
| Date: | |
| Submit a patient information sheet regarding renal dialysis, ensuring all risks, benefits, and alternatives and informed consent are covered. | |
| | |
| Facilitator Remarks: | |



Curriculum 2K23 Year-04



MODULE: ENT & EYE-II

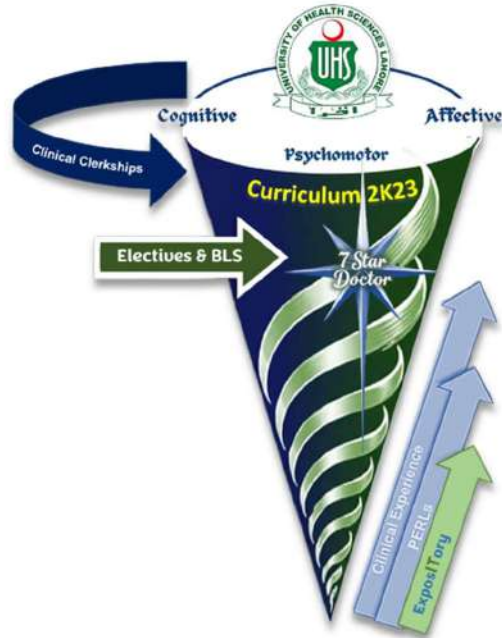
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Curriculum 2K23 Year-04



MODULE: ENDOCRINOLOGY & REPRODUCTION-II

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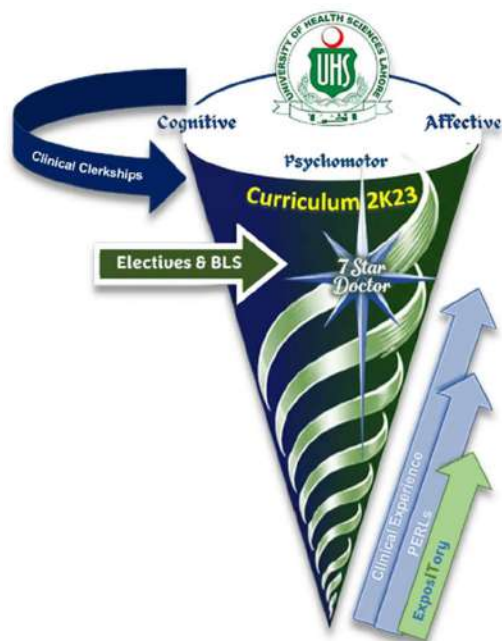
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| Roll No: | |
| Assignment Topic: | |
| Date: | |
| Submit a Research Manuscript for your research. | |
| | |
| Facilitator Remarks: | |

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| 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

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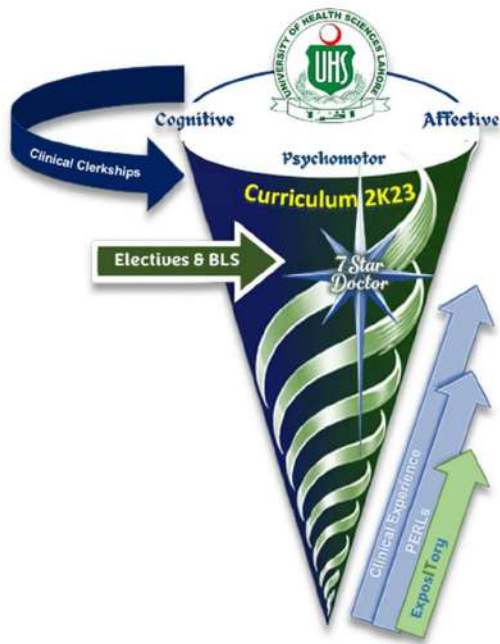
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| Roll No: | |
| Assignment Topic: | |
| Date: | |
| <p>Submit a reflective analysis of a case involving autonomy in cosmetic surgery or consent in an elective procedure. Discuss how ethical principles were applied or challenged, the impact on patient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

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| 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: | |

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| Roll No: | |
| Assignment Topic: | |
| Date: | |
| <p>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.</p> | |
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| Facilitator Remarks: | |



Curriculum 2K23 Year-04



MODULE: EYE & ENT-III

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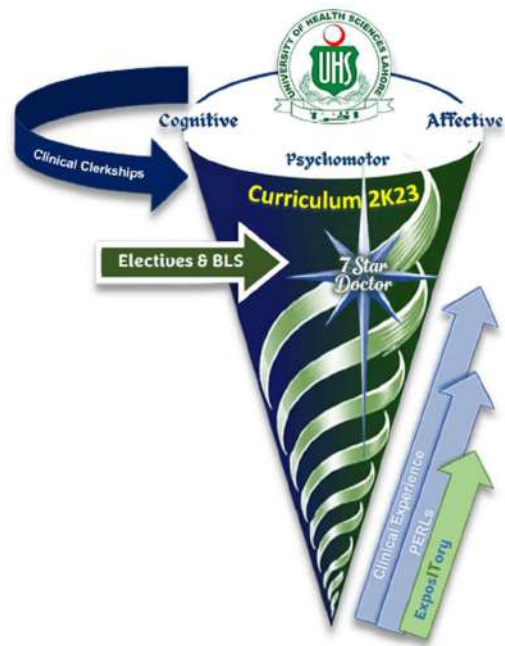
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| Roll No: | |
| Assignment Topic: | |
| Date: | |
| Submit the key factors in success of providing equitable access to care based on Case Study. | |
| | |
| Facilitator Remarks: | |

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

| | |
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| 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: | 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: | |
| <p>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.</p> | |
| | |
| 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: | |

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06

Section



**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-04 | <p>Expository Writing Focus:</p> <ol style="list-style-type: none"> 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. <p>IT Integration: IT Skills:</p> <ol style="list-style-type: none"> 4. To use advanced research tools (PubMed, EndNote), medical data analysis (SPSS, R), and digital publishing (LaTeX for formatting research articles). <p>Writing Application:</p> <ol style="list-style-type: none"> 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. | <p>PERLS, Pharmacology, Community Medicine, Pathology, Forensic Medicine</p> | <ol style="list-style-type: none"> 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) |

Developed by

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Central Park Medical College, Lahore

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

A graphic featuring a blue semi-circle with a dark grey border, containing the number '07' in a stylized font. Below the semi-circle is a grey rectangular box containing the word 'Section' in a white, cursive font.

07

Section



Department of Medical Education

*Innovating &
Strategizing Healthcare
Academia*



ELECTIVES

MODULAR INTEGRATED
CURRICULUM 2K23

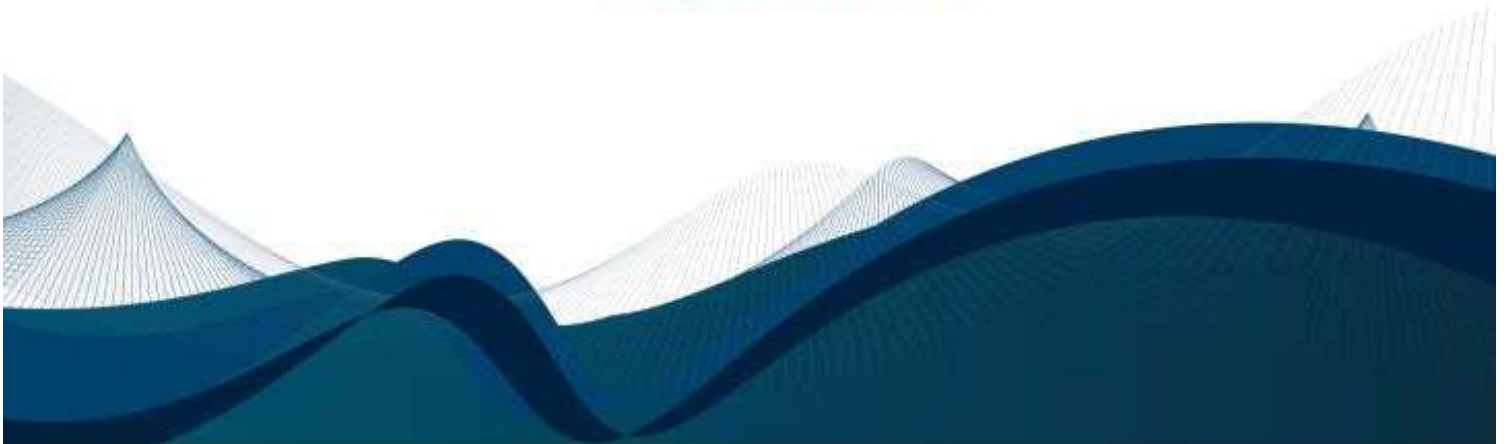


ELECTIVES

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.

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 dynamicity, 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 **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.

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

- 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

- 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
- 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.

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

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Ex-Director Medical Education & International Linkages
University of Health Sciences
Lahore



08

Section



SKILL ACQUISITION WORKSHOPS





Workshop Schedule for MBBS students

The Following **Life Saving Skills** are included in the “Modular Integrated Curriculum 2K23 *Final Version*”:

| Sr. No. | Course Name | Academic Year | Duration |
|---------|---|----------------------|----------|
| 1. | Cardiac First Response (CFR) / Basic Life Support (BLS) | 1 st Year | 2 days |
| 2. | Immediate Care Cardiac (ICC) / Advanced Life Support Cardiac (ALSC) | 2 nd Year | 1 day |
| 3. | Immediate Care Trauma (ICT) / Advanced Life Support Trauma (ALST) | 3 rd Year | 1 day |
| 4. | Emergency Triage and Assessment (ETAT) | 4 th Year | 1 day |
| 5. | Emergency Neonatal Care (ENC)/ Neonatal Resuscitation (NR) | 5 th Year | 1 day |
| 6. | Emergency Obstetrics and Neonatal Care (EMONC) | 5 th Year | 1 day |



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