

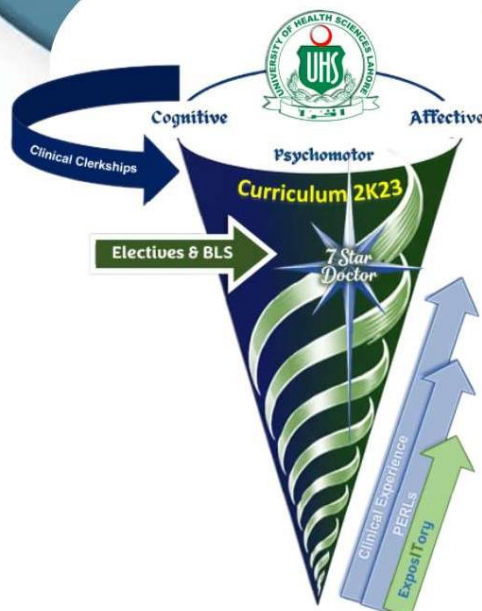






Modular Integrated Curriculum 2K23 MBBS Year-04

BLOCK-11





Block 11& 12
Study Guide 2026
4TH Year MBBS
Islam Medical College
Sialkot–Pakistan

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BLOCK LEAD DETAILS

Hello, I am Dr. Rana Muhammad Asad Khan working as a Assistant Professor in Pathology department of Islam Medical and Dental College, Sialkot and now acting as **Lead of Block 11 & 12**. I completed my graduation from Islam Medical and Dental College, Sialkot in 2019, and MPhil Microbiology in 2024 at Institute of Molecular Biology and Biotechnology, Lahore. You can come to meet me in Pathology department office, Academic Block 2 from 08:00 – 15:00 hours on weekdays. You can also contact me freely on my email assadmanj786@gmail.com.

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

MODULE

27

NEUROSCIENCES-II



THE UNIVERSITY OF HEALTH SCIENCES

VISION

UHS is a leading University aiming to keep its graduates apt with the ever-emerging global health challenges, evolving educational methodologies and emerging technological advancements to maintain its distinguishable position as a Medical University.

(<https://www.uhs.edu.pk/vision-mission.php>)

ISLAM MEDICAL COLLEGE VISION AND MISSION

VISION

"To be a globally recognized center of excellence, where Islam Medical College empowers competent and ethical healthcare professionals through holistic education, innovative teaching, and groundbreaking research."

MISSION

"Islam Medical College is dedicated to comprehensive medical education that instills values of integrity, empathy, and professionalism. We empower our Students with knowledge, skills, and a patient-centered attitude for lifelong learning."

CURRICULAR OUTCOMES(PLOS)

The PLOs are articulated in view of the desirable competencies of our graduates. Following are the PLOs of MBBS Program desired to highlight the attributes amongst our graduates after their graduation

PLO-1 Demonstrate the ability to independently manage non-critical clinical problems (Knowledge, Skill)

PLO-2 Exhibit proficiency in life-saving procedures and the ability to assist in the management of critically ill patients. (Skill)

PLO-3 Adhere to ethical principles and display attributes such as honesty, integrity, and confidentiality. (Attitude)

PLO-4 Conduct research that contributes to the advancement of medical knowledge and brings relevance to healthcare practices (Knowledge, Skill)

PLO-5 Act as an efficient community health promotor by advocating for health promotion and disease prevention. (Skill)

PLO-6 Exhibit comprehensive scientific knowledge in all professional activities. (Knowledge)

PLO-7 Demonstrate clear and efficient written and verbal communication skills to effectively communicate with patients, colleagues and other healthcare professionals. (Skills, Attitude)

PLO-8 Embrace a lifelong learning mind set to maintain expertise, keep up with advancements in medical practices and improve professional development. (Knowledge, Skill)

Syllabus



MODULERATIONALE

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. (PLO-6, PLO-1)
Describe the pharmacological basis of drugs used in neurological conditions, including their mechanisms of action, therapeutic uses, adverse effects, and rational prescribing principles. (PLO-6)
- Integrate knowledge of basic neuroscience with clinical decision-making to interpret signs, symptoms, and investigations relevant to neurological diseases. (PLO-1, PLO-6)
- Discuss the principles of multidisciplinary management in neurological disorders, incorporating pharmacological, rehabilitative, and preventive perspectives. (PLO-1, PLO-6)
- Counsel patients with neurological diseases with empathy demonstrating effective

communicationskills. (PLO-3, PLO-7)

SUBJECTSINTEGRATEDINTHEMODULE

1. Neurology
2. Pathology
3. Pharmacology
4. GeneralMedicine
5. PediatricSurgery/Neurosurgery

THEORY					
CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC	TEACHING/ LEARNING	ASSESSMENT TOOLS
NS2-Pa-001	Explain the etiology and pathophysiological mechanisms of acute viral, lymphocytic, and purulent meningitis. Describe the etiology, pathogenesis, and clinical implications of a brain abscess. Discuss the causative factors and pathophysiology of chronic meningitis. Explain the pathogenesis and complications of tuberculous meningitis. Explain the etiology, transmission, and neuropathological changes associated with viral encephalitis.	Pathology/ Microbiology	CNS Infections	LIGS	MCQS
NS2-Neu-002	Identify signs and symptoms of meningitis. Enlist the diagnostic approach. Outline medical management plan. Identify the potential complications.	Neurology/ Medicine	Meningitis	LIGS	MCQS

NS2-Neu-003	List the common viral and non-viral causes of encephalitis. Identify the typical clinical presentation. Outline the diagnostic workup. Plan the management strategies. Identify short- and long-term complications.	Neurology/ Medicine	Encephalitis	LIGS	MCQS
NS2-Neu-004	Define ischemic stroke. Diagnose ischemic stroke based on clinical presentation. Enlist investigations to determine the cause. Describe management including emergency intervention and prevention of ischemic stroke.	Neurology/ Medicine	Ischemic stroke	LIGS	MCQS
NS2-Neu-005	Define subarachnoid and intracerebral hemorrhage. Enlist causes and predisposing factors.	Neurology/ Medicine	Subarachnoid and intracerebral hemorrhage	LIGS	MCQS

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

NS2-Pa-006	Classify central nervous system (CNS) tumors based on the WHO classification. Describe the genetic mutations, pathogenesis, morphology, and clinical manifestations of major primary brain tumors, including gliomas, ependymomas, medulloblastomas, and meningiomas. Discuss the pathogenesis, common primary sites, and clinical features of metastatic brain tumors.	Pathology	CNS tumors	LIGS	MCQS
NS2-Pa-007	Define and enlist the major types of neurodegenerative disorders affecting the central nervous system.	Pathology	Neurodegenerative diseases	LIGS	MCQS

	Explain the role of abnormal protein aggregation in the pathogenesis of neurodegenerative diseases. Describe the molecular genetics, pathogenic mechanisms, and morphological changes associated with Alzheimer's disease. Identify the clinical features and diagnostic criteria of Alzheimer's disease. Explain the molecular genetics and pathogenesis of Parkinson's disease. Describe the key morphological findings, clinical manifestations, and diagnostic criteria of Parkinson's disease.			LIGS	MCQS
NS2-Neu-008	Describe the etiology and risk factors associated with Alzheimer's disease. Identify the key clinical features and stages of cognitive and behavioral decline. Differentiate Alzheimer's disease from other causes of dementia. Outline the diagnostic approach. Discuss the management strategies. Identify the common complications and their impact on patient quality of life and caregiver burden.	Neurology/ Medicine	Alzheimer's disease	LIGS	MCQS

NS2-Ph-009	Classify the drugs used in the management of Alzheimer's disease and other dementias. Explain the mechanism of action, pharmacological effects, therapeutic uses, and adverse effects of cholinesterase inhibitors. Describe the mechanism of action, clinical role, and side effects of NMDA receptor antagonist (Memantine). Discuss the rationale and benefits of combination therapy (cholinesterase inhibitor + memantine) in moderate to severe Alzheimer's disease.	Pharmacology	Pharmacotherapy of Alzheimer's Disease and Dementia	LIGS	MCQS
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NS2-Neu-010	Describe the etiology and risk factors of Parkinson's disease. Diagnose Parkinson's disease based on the cardinal motor and non-motor symptoms. Describe the clinical stages of the disease. Differentiate Parkinson's disease from other parkinsonian syndromes. Outline the important investigations. Describe treatment options and complications.	Neurology/ Medicine	Parkinson's disease	LIGS	MCQS
NS2-Ph-011	Classify Anti-Parkinson drugs. Explain the mechanism of action, pharmacological effects, therapeutic uses, adverse effects, drug interactions, and contraindications of anti-Parkinsonian agents. Discuss the rationale, advantages, and disadvantages of combining Carbidopa with Levodopa therapy. Describe the On-Off phenomenon, its underlying mechanisms, and management strategies. Explain the etiology, clinical features, and pharmacological management of drug-induced parkinsonism. Outline the pharmacokinetics and therapeutic approaches for drug-induced and other dyskinesias.	Pharmacology	Anti-Parkinson Drugs	LIGS	MCQS

NS2-Neu-012	Classify motor neuron diseases. Describe the diagnostic criteria and key clinical features of motor neuron disease. List relevant investigations. Explain supportive and disease-modifying treatment strategies.	Neurology/ Medicine	Motor neuron disease	LIGS	MCQS
NS2-Ph-013	Classify drugs used in the management of movement disorders (Parkinsonism, Huntington's disease, dystonias, tremors, and drug-induced dyskinesias).	Pharmacology	Pharmacotherapy of Movement disorders	LIGS	MCQS

	Describe the mechanism of action, pharmacological effects, clinical uses, adverse effects, drug interactions, and contraindications of drugs used for hyperkinetic movement disorders. Discuss pharmacological strategies for the management of drug-induced movement disorders, including acute dystonia, akathisia, and parkinsonism. Explain the principles of drug selection, rationale for combination therapy, and the use of newer therapeutic agents in movement disorders.			LIGS	MCQS
NS2-Pa-014	Explain the pathophysiology of inflammatory neuropathies, including Guillain-Barré Syndrome (Acute Inflammatory Demyelinating Polyneuropathy). Describe the clinical features, pathological changes, and disease progression of Guillain-Barré Syndrome. Explain the pathophysiology and morphological changes of poliomyelitis, including anterior horn cell involvement. Describe the pathogenesis, morphological features, and clinical implications of prion diseases.	Pathology	Guillain-Barré Syndrome, poliomyelitis & prion diseases	LIGS	MCQS

NS2-Neu-015	Define neuropathy and classify peripheral neuropathies. Identify the clinical features of neuropathies. Explain the functional impact of neuropathies on gait, sensation, and daily activities. Outline the diagnostic approach and management plan.	Neurology/ Medicine	Neuropathies	LIGS	MCQS
NS2-Pa-016	Describe the structural and functional differences between Type I and Type II muscle fibers. Explain the pathogenesis, morphological features, and diagnostic criteria of inflammatory myopathies, including dermatomyositis and polymyositis.	Pathology/ Neurology	Myopathies	LIGS	MCQS

	Discuss the etiology, pathophysiology, and histopathological characteristics of inherited skeletal muscle diseases, including Duchenne and Becker muscular dystrophies. Correlate pathological findings with clinical presentation and disease progression in the above disorders.			LIGS	MCQS
NS2-Neu-017	Define and classify paraplegia. Differentiate paraplegia from quadriplegia and hemiplegia. Differentiate between upper and lower motor neuron lesions. Identify the key clinical features that help localize the spinal cord lesion. Discuss the management and identify potential complications.	Neurology/ Medicine	Paraplegia	LIGS	MCQS
NS2-Neu-018	Describe multiple sclerosis with its types and clinical variants. Explain the etiology, immunopathogenesis, and risk factors associated with multiple sclerosis. Identify the characteristic clinical features. Outline the diagnostic approach. Describe the management strategies.	Neurology/ Medicine	Multiple Sclerosis	LIGS	MCQS

NS2-Ph-019	Describe the pharmacological classification of anti-migraine drugs. Explain the mechanism of action of triptans and ergot alkaloids in the management of migraine. Describe the pharmacokinetic properties and clinical uses of different triptans and ergot derivatives. Describe the adverse effects, contraindications, and drug interactions.	Pharmacology	Anti-migraine drugs	LIGS	MCQS
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NS2-Ph-020	Classify local anesthetic agents based on their chemical structure and duration of action. Explain the mechanism of action, pharmacological effects, and clinical applications of local anesthetics. Compare amide and ester local anesthetics in terms of metabolism, stability, and allergic potential. Describe the rationale, benefits, and risks of adding vasoconstrictors to local anesthetic preparations. Identify commonly used agents for short-, intermediate-, and long-duration procedures, including minor and major peripheral nerve blocks. Discuss the adverse effects, contraindications, and significant drug interactions of local anesthetics.	Pharmacology/ Anesthesia	Local Anesthetics	LIGS	MCQS
NS2-Ph-021	Classify general anesthetic agents based on their route of administration and duration of action. Describe the clinical uses, adverse effects, contraindications, and major drug interactions of commonly used general anesthetics. Discuss the principles and agents used for the reversal and recovery from anesthesia.	Pharmacology/ Anesthesia	General Anesthetics	LIGS	MCQS

NS2-Neu-022	Definecomaandunconsciousness. Describethethepathophysiologyunderlyinglossconsciousness. Apply the Glasgow Coma Scale for assessment. Outline the diagnostic approach. Discuss the complications, prognosis, and criteria for brain death determination.	Neurology/ Medicine	Coma and unconsciousness	LIGS	MCQS
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PRACTICAL/LABWORK

CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC	TEACHING/ LEARNING	ASSESSMENT TOOLS
NS2-Pa-008	Interpret CSF reports, including cell count, protein, glucose, and microbiological findings	Pathology	CSF interpretation	LGIS& SGD	VIVA OSPE
NS2-Pa-009	Identify characteristic histopathological features of tuberculous meningitis.	Pathology	Tuberculous meningitis	LGIS& SGD	VIVA OSPE
NS2-Pa-010	Identify the classical characteristic morphological features of meningioma and glioblastoma.	Pathology	CNS tumors	LGIS& SGD	VIVA OSPE
NS2-Ra-001	Interpret ultrasound findings to identify features of hydrocephalus.	Radiology	Neuroimaging: hydrocephalus	LGIS& SGD	VIVA OSPE
NS2-Ra-002	Interpret CT and MRI images to identify intracranial hemorrhage, cerebral infarction, and CNS tumors.	Radiology	Neuroimaging: Stroke and CNS tumors	LGIS& SGD	VIVA OSPE

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Volume-04

MODULE

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**PSYCHIATRY &
BEHAVIORAL SCIENCES**





MODULERATIONALE

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

BEHAVIORALSCIENCES

CODE	SPECIFICLEARNINGOUTCOMES	INTEGRATING DISCIPLINE	TOPIC	LEARNING/ TEACHING	ASSESSMENT TOOL
PsyBhS1 -BhS- 001	Explain the bio-psycho-social model of health and its application in patient care. Differentiate normalcy versus abnormalcy.	Behavioral Sciences	Bio-psycho-social model of health	LIGS	MCQS
PsyBhS1 -BhS- 002	Describe sensation, perception, attention, and concentration, and explain their relevance in clinical practice. Define memory, describe its stages and types, and suggest methods to improve it. Define thinking and describe its types. Define cognition and describe its levels. Discuss problem-solving and decision-making steps, barriers, and strategies in clinical practice.	Behavioral Sciences	Understanding Behavior	LIGS	MCQS
PsyBhS1 -BhS- 003	Define personality and its types. Explain developmental theories of personality. Explain defense mechanisms. Explain its significance in clinical practice. Define intelligence and describe its types. Explain the relevance of IQ and EQ in a doctor's professional and personal life. Discuss methods to enhance emotional intelligence (EQ) and intellectual intelligence (IQ).	Behavioral Sciences	Individual differences - Personality & Intelligence	LIGS	MCQS

PsyBhS1 -BhS- 004	Elaborate emotions and motivation and explain their influence on health and illness behavior. Apply basic motivational strategies to enhance patient adherence and lifestyle modification.	Behavioral Sciences	Emotions & Motivation	LIGS	MCQS
PsyBhS1 -BhS- 005	Explain the relationship between stress, stressors, and illness. Define coping skills and describe their role in managing stress.	Behavioral Sciences	Stress management	LIGS	MCQS

RECOMMENDED BOOKS

1. Kaplan and Sadock's Synopsis of Psychiatry - Sadock, Sadock & Ruiz
2. Oxford Textbook of Psychiatry - Gelder, Andreasen & Lopez-Ibor
3. DSM-5-TR: Diagnostic and Statistical Manual of Mental Disorders
4. Lippincott's Pharmacology - Whalen, Finkel & Panavelil (Psychotropic chapters)
5. Behavioral Sciences in Medicine - Barbara Fadern

	Explain the concepts of adjustment and maladjustment in response to stress.			LIGS	MCQS
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	LIGS	MCQS
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	LIGS	MCQS
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	LIGS	MCQS

PsyBhS1 -BhS- 009	Explain the process of grief and its impact on patients and families. Explain psychological reactions to illness and hospitalization. Explainstrategiestomanagethemeffectively.	Behavioral Sciences	Psychological reactions	LIGS	MCQS
PsyBhS1 -BhS- 010	Outlinethestagesofsleepanddescribesleepdisorders. Discuss non-pharmacological methods for sleep hygiene.	Behavioral Sciences	Sleep and consciousness	LIGS	MCQS

PsyBhS1 -BhS- 011	Define pain and describe its physical and psychological aspects relevant to patient care. Explainsubjectivefactorsinfluencingpain. Manage pain using non pharmacological interventions.	Behavioral Sciences	Pain	LIGS	MCQS
PsyBhS1 -BhS- 012	Definechild-rearingpracticesandtheirinfluenceon personality development. Explaintheeffectsofchild-rearingpracticesonhealth andillness.	Behavioral Sciences	Child rearing practices	LIGS	MCQS
PSYCHIATRY					
CODE	SPECIFICLEARNINGOUTCOMES	INTEGRATING DISCIPLINE	TOPIC		
PsyBhS1 -Psy-001	Describe mood and affect.Describe and classify hallucination. Describe and classify delusion. Describetheabnormalitiesofspeechinpsychiatric disorders. Describeobsessionandcompulsion.	Psychiatry	Introduction to KeyPsychiatric Terms	LIGS	MCQS

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	LIGS	MCQS
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 minimal mental state examination findings of delirium and dementias.		Delirium and dementia	LIGS	MCQS

	Discuss prognostic factors of memory related disorders. Outline treatment plan including pharmacological and non-pharmacological interventions.			LIGS	MCQS
PsyBhS1 -Psy-004	Define Generalized anxiety disorder (GAD) and describe common risk factors. Identify typical mental state examination findings of GAD. Differentiate GAD from acute stress. Outline pharmacological and psychotherapeutic treatment of GAD.	Psychiatry	Anxiety Disorders	LIGS	MCQS
	Identify hallmark symptoms of panic disorder based on Mental Status Examination. Differentiate panic attacks from angina, myocardial infarction, and asthma. Describe strategies for supporting patients with panic disorder.	Psychiatry		LIGS	MCQS
	Define and classify phobias. Outline treatment approaches for phobias, including psychological therapies and pharmacological options.	Psychiatry		LIGS	MCQS

PsyBhS1 -Ph-001	Classifyanxiolyticdrugs. Explain the mechanism of action of different anxiolytic drugs. Discuss the pharmacokinetics and pharmacodynamics of anxiolytics. Identifytheclinicalindicationsofanxiolyticdrugs. List the contraindications and precautions for the useof anxiolytic drugs. Describetheadverseeffects andrisksofdependence, tolerance,andwithdrawalassociatedwithanxiolytics.	Pharmacology	Anxiolyticdrugs	LIGS	MCQS
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	Classify sedative-hypnotic drugs. Explain the mechanism of action of sedative-hypnotics. Describe the pharmacokinetics and pharmacodynamics of commonly used sedative-hypnotics. Identify the clinical indications of sedative-hypnotics. List the contraindications to the use of sedative-hypnotics in clinical practice. Identify adverse effects of sedative-hypnotics.		Sedative-hypnotics	LIGS	MCQS
PsyBhS1 -Psy-005	Classify depressive disorders. Describe risk factors of depressive disorders. Diagnose moderate depressive disorder on the basis of mental state examination findings. Outline management plan including pharmacological options and psychotherapy.	Psychiatry	Depressive Disorders	LIGS	MCQS
	Describe suicide and deliberate self-harm, including associated factors. Describe management of suicide and deliberate self-harm.	Psychiatry		LIGS	MCQS
	Differentiate postpartum depression from postpartum blues. Formulate a management plan for postpartum blues and postpartum depression.	Psychiatry		LIGS	MCQS

PsyBhS1 -Ph-002	Classify anti-depressants. Describe their mechanism of action, pharmacological effects, uses, adverse effects, drug interactions and contraindications. Discuss rationale of choosing an antidepressant for a particular condition	Pharmacology	Anti-depressants	LIGS	MCQS
PsyBhS1 -Psy-006	Describe Bipolar I and Bipolar II disorders according to standard diagnostic criteria. Differentiate the clinical features of mania and hypomania.	Psychiatry	Bipolar affective disorder	LIGS	MCQS

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

	Define Body Dysmorphic Disorder (BDD) Differentiate from BDD from eating disorders Explain the clinical findings of a case of BDD based on mental state examination. Outline the management plan to treat BDD.			LIGS	MCQS
		Psychiatry			
PsyBhS1 -Psy-008	Define and classify dissociative disorders Identify key clinical features of dissociative disorders Describe principles of management of dissociative disorders	Psychiatry	Dissociative and somatoform disorders (conversion disorder)	LIGS	MCQS

	Define and classify somatoform disorders with emphasis on conversion disorder Identify key clinical features of conversion disorder Describe principles of management of conversion disorder			LIGS	MCQS
PsyBhS1 -Psy-009	Explain the characteristic mental state examination (MSE) findings in PTSD. Differentiate PTSD from acute stress disorder. Outline the management plan for PTSD. Define adjustment disorder. Identify the emotional and behavioral symptoms that occur within three months of an identifiable stressor.	Psychiatry	Trauma- and Stressor-Related Disorders	LIGS	MCQS
PsyBhS1 -Psy-010	Define schizophrenia. Describe the positive and negative symptoms of schizophrenia. Outline the differential diagnosis of schizophrenia. Explain the characteristic mental state examination (MSE) findings in schizophrenia. Outline the management plan to treat a patient of schizophrenia.	Psychiatry	Schizophrenia and Psychotic Disorders	LIGS	MCQS

PsyBhS1 -Ph-004	Classify antipsychotic drugs. Explain the mechanism of action of typical and atypical antipsychotics. Describe the pharmacokinetics and pharmacodynamics of antipsychotic drugs. Identify the clinical indications of antipsychotic drugs. List the contraindications and precautions for the use of antipsychotics. Describe the adverse effects of antipsychotics.	Pharmacology	Antipsychotic Drugs	LIGS	MCQS
PsyBhS1 -Psy-011	Define paranoid, schizoid, and schizotypal personality disorders. Describe the characteristics, symptoms, and behavioral patterns of each disorder.	Psychiatry	Personality Disorders I	LIGS	MCQS

	Interpret relevant findings on the mental state examination in these disorders. Differentiate Cluster A disorders from schizophrenia and delusional disorders. Outline the principles of management, including psychotherapy and pharmacotherapy where appropriate.			LIGS	MCQS
PsyBhS1 -Psy-012	Define antisocial, borderline, histrionic, and narcissistic, anxious avoidant, dependent, and obsessive compulsive personality disorders. Explain the clinical features and psychopathology of each disorder. Identify mental state examination findings typical of Cluster B and C personality disorders. Differentiate these disorders from mood disorders, substance use, and other psychiatric conditions. Summarize management strategies, including risk assessment, crisis intervention, and psychotherapy.	Psychiatry	Personality Disorders II	LIGS	MCQS
	Classify commonly abused substances (e.g., alcohol, opioids, cannabis, stimulants, sedatives, caffeine, nicotine). Describe the clinical features and diagnostic criteria of substance-related disorders. Identify signs and symptoms of intoxication and withdrawal for common substances.			LIGS	MCQS

PsyBhS1 -Psy-013	Explain the psychological, social, and medical complications associated with substance use. Outline the approach to assessment, including history, examination, and mental state examination. Explain the principles of management for substance use disorders. Discuss preventive strategies and the role of psychoeducation in reducing substance use. Manage the patients of acute and chronic alcoholism.	Psychiatry	Substance-Related Disorders	LIGS	MCQS
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PsyBhS1 -Ph-005	Classify CNS stimulants. Explain the mechanism of action. Discuss the clinical indications for the therapeutic use of CNS stimulants. Identify the common contraindications to CNS stimulant use. Describe the signs and symptoms of overdose of CNS stimulants. Summarize the adverse effects and toxic manifestations of CNS stimulants.	Pharmacology	CNS Stimulants	LIGS	MCQS
PsyBhS1 -Ph-006	Classify types of alcohol. Describe the mechanism of action, pharmacological effects, uses, adverse effects, drug interactions and contraindications of Ethyl Alcohol. Enlist the enzyme systems involved in ethanol and methanol metabolism. Describe treatment of methanol and ethanol poisoning with alcohol. Describe pharmacological treatment of acute alcohol intoxication, alcohol withdrawal syndrome and Wernicke Korsakoff syndrome Identify the clinical features of the disulfiram-ethanol reaction and list the drugs that produce a disulfiram-like effect when combined with alcohol. Describe fetal-alcohol syndrome.	Pharmacology	Alcohol	LIGS	MCQS

PsyBhS1 -Psy-014	Defineandclassifypsychosexualdisorders Identify key clinical features of psychosexual disorders Describeprinciplesofmanagementofpsychosexual disorders	Psychiatry	Psychosexual disorders	LIGS	MCQS
PsyBhS1 -Psy-015	Describe the characteristic clinical featuresof anorexia nervosa. Differentiateanorexianervosafromhyperthyroidism and depression. Explainthetypicalmentalstateexaminationfindings.	Psychiatry	EatingDisorders	LIGS	MCQS

	Outline the management plan to treat a patient diagnosed with anorexia nervosa.			LIGS	MCQS
	Diagnose bulimianervosa 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		LIGS	MCQS
	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		LIGS	MCQS

PsyBhS1 -Psy-016	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	Neurodevelopmental Disorders	LIGS	MCQS
	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		LIGS	MCQS

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

MODULE

29

RENAL-II





MODULERATIONALE

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	TEACHING/LEARNING	ASSESSMENT TOOLS
Re2-Pa-001	Describe the etiological factors causing nephrotic syndrome (primary and secondary including diabetic nephropathy). Explain the pathogenesis of proteinuria, hypoalbuminemia, and edema. Describe the gross and microscopic changes in glomeruli associated with nephrotic syndrome. Diagnose nephrotic syndrome based on clinical presentation and findings.	Pathology	Nephrotic Syndrome	LIGS	MCQS
Re2-Pa-002	Explain the etiopathogenesis and morphology of podocytopathies: - Minimal Change Disease - Focal Segmental Glomerulosclerosis (FSGS)	Pathology	Podocytopathies	LIGS	MCQS
Re2-Pa-003	Enumerate the etiological factors including idiopathic and secondary causes. Explain the pathogenesis and morphology of membranous nephropathy.	Pathology	Membranous Nephropathy	LIGS	MCQS

Re2-Neph-004	Enumerate the common causes of nephritic syndrome. Explain the pathophysiological mechanisms of glomerular inflammation and injury. Correlate the clinical presentation with underlying morphological changes. Analyze the laboratory findings characteristic of nephritic presentations. Outline the management strategies and potential complications.	Nephrology	Nephritic Syndrome	LIGS	MCQS
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Re2-Pa-005	Describe the etiology and precipitating infections leading to PSGN. Explain the immunopathogenesis involving immune complex deposition. Identify the gross and microscopic features characteristic of PSGN.	Pathology	Post-Streptococcal Glomerulonephritis (PSGN)	LIGS	MCQS
Re2-Neph-006	Describe the etiological factors and risk associations of IgA-mediated renal disease. Explain the pathogenesis focusing on IgA immune complex deposition in the mesangium and small vessels. Identify the characteristic gross and microscopic changes in renal tissue. Correlate histopathological features with clinical manifestations. Outline the relevant laboratory investigations for diagnosis, monitoring, and follow-up. Discuss the management plan. Describe prognostic factors and potential progression to chronic kidney disease. Differentiate IgA nephropathy from Henoch-Schönlein Purpura based on clinical presentation, systemic involvement, and severity.	Nephrology/Pathology	IgA Nephropathy (Berger's Disease) and Henoch - Schönlein Purpura (IgA Vasculitis)	LIGS	MCQS

Re2-Pa-007	Enumerate the etiological and immunological types of RPGN. Explain the pathogenesis of crescent formation and rapid renal failure. Describe the gross and microscopic features of each type.	Pathology	Rapidly Progressive Glomerulonephritis (RPGN)	LIGS	MCQS
TUBULOINTERSTITIAL DISORDERS					
Re2-Pa-008	Define acute tubular necrosis and differentiate it from other causes of acute kidney injury. Describe the etiological factors of ischemic and nephrotoxic ATN.	Pathology/ Nephrology	Acute tubular necrosis	LIGS	MCQS

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

Re2-Pa-010	Describe the gross and microscopic morphological features. Correlate pathological features with clinical manifestations. Enumerate the laboratory and imaging investigations used in diagnosis. Outline the principles of management and prognosis.	Pathology	Polycystic kidney disease	LIGS LIGS LIGS	MCQS MCQS MCQS
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RENAL FAILURE AND ITS PROGRESSION					
Re2-Neph-001	Describe the etiology and risk factors of Acute Renal Failure. Explain the underlying mechanism. Identify the clinical features and potential complications. Interpret the laboratory investigations. Outline the management plan. Discuss the role and limitations of diuretics in the management of Acute Renal Failure.	Nephrology	Acute Renal failure	LIGS	MCQS
Re2-Neph-002	Describe the etiology and risk factors of Chronic Renal Failure. Identify the clinical features and systemic manifestations. Interpret the laboratory investigations and diagnostic criteria. Outline management plan.	Nephrology	Chronic Renal failure (Chronic Kidney Disease)	LIGS	MCQS

Re2-Neph-003	Describe end-stage renal disease. Discuss the pathophysiology and progression of chronic kidney disease to ESRD. Enumerate the indications for initiating dialysis. Describe types of dialysis. Explain the purpose, and care of an arteriovenous fistula. Discuss the treatment options for ESRD. Identify the complications associated with dialysis and their management principles. Outline the principles of patient education and long-term follow-up in dialysis care.	Nephrology	End-stage renal disease and Dialysis (hemodialysis and peritoneal dialysis)	LIGS	MCQS
METABOLIC AND SYSTEMIC RENAL DISORDERS					
Re2-Neph-004	Describe diabetic nephropathy with its clinical significance. Identify the structural and functional renal changes.	Nephrology	Diabetic nephropathy	LIGS	MCQS

	Enlist the laboratory investigations used for diagnosis and monitoring. Outline the principles of prevention, early detection, and management. Describe the complications and prognosis.			LIGS	MCQS
Re2-Neph-005	Define hypertensive nephrosclerosis. Differentiate benign and malignant forms. Describe the structural and functional renal changes. Correlate clinical manifestations with renal function impairment. Outline investigations and management plan. Discuss the prognosis and long-term outcomes.	Nephrology	Hypertensive nephrosclerosis	LIGS	MCQS

Re2-Neph-006	Describe the role of kidneys in electrolyte and acid-base balance regulation. Explain the pathophysiological mechanisms underlying hypo- and hypernatremia, and hypo- and hyperkalemia. Describe the compensatory responses in metabolic acidosis and metabolic alkalosis. Interpret clinical and laboratory findings in common electrolyte and acid-base disorders. Correlate abnormalities in serum electrolytes and arterial blood gases with underlying renal dysfunction. Outline the investigations, management and complications.	Nephrology	Electrolyte and Acid-Base Disorders	LIGS	MCQS
OBSTRUCTIVE AND INFECTIVE DISORDERS OF THE URINARY TRACT					
Re2-Uro-007	Define obstructive uropathy and hydronephrosis. Describe etiology and clinical presentation. Enlist the investigations. Outline management plan. Identify complications.	Urology/ Surgery	Obstructive Uropathy and Hydronephrosis	LIGS	MCQS

Re2-Uro-008	Define urolithiasis and classify urinary stones by composition. Explain the pathogenesis and predisposing factors for stone formation. Describe the clinical presentation and diagnostic evaluation. Discuss the principles of medical and surgical management. Outline preventive strategies and patient education.	Urology/ Surgery/ Pediatric Surgery	Urolithiasis	LIGS	MCQS
Re2-Neph-009	Identify etiological factors and predisposing conditions of acute and chronic pyelonephritis. Explain the pathogenesis of ascending and hematogenous spread of infection. Correlate pathological features with clinical manifestations and complications. Outline relevant investigations and management plan.	Nephrology	Acute and Chronic Pyelonephritis	LIGS	MCQS
Re2-Uro-010	Classify urinary tract infections by site and severity. Explain the clinical features of acute cystitis and prostatitis. Discuss diagnostic investigations and interpretation of urine analysis. Outline management principles, antibiotic stewardship, and prevention.	Urology	Cystitis and Prostatitis	LIGS	MCQS

Re2-Uro-011	Define hematuria and differentiate between microscopic and macroscopic types. Enumerate common causes of hematuria. Describe the diagnostic approach and interpretation of investigations. Correlate clinical features with underlying renal or urological pathology.	Urology/ Nephrology	Hematuria	LIGS	MCQS
FUNCTIONAL BLADDER DISORDERS					
Re2-Uro-012	Define neurogenic bladder and describe its types based on neurological involvement.	Urology	Neurogenic Bladder	LIGS	MCQS

	Explain the pathophysiology of bladder dysfunction in neurological diseases. Correlate clinical features with the level of neural lesion. Discuss diagnostic methods and management principles, including catheterization and Rehabilitation			LIGS	MCQS
Re2-Uro-013	Define urinary retention and urinary incontinence. Classify types of incontinence based on mechanism. Describe the etiological factors and pathophysiology of each condition. Discuss clinical features, investigations, and management approaches.	Urology	Urinary Retention and Incontinence	LIGS	MCQS
Re2-Ph-014	Enumerate the drugs used in the management of urinary retention, including i. α-adrenergic blockers ii. 5-α-reductase inhibitors iii. Muscarinic agonists iv. Cholinesterase inhibitors v. Phosphodiesterase inhibitors Explain the mechanism of action, indications, and adverse effects of each drug class in improving bladder emptying or relieving outlet obstruction.	Pharmacology	Pharmacotherapy of Urinary Retention	LIGS	MCQS

Re2-Ph-015	Enlist the drugs used in the management of urinary incontinence. Explain the mechanism of action of antimuscarinic agents and β3-adrenergic agonists in overactive bladder. Describe the role of duloxetine and estrogen in stress urinary incontinence. Outline the use of botulinum toxin in neurogenic detrusor overactivity. State the common adverse effects and contraindications of these drugs.	Pharmacology	Pharmacotherapy of Urinary Incontinence	LIGS	MCQS
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	Discuss the rationale for drug selection based on the type of urinary incontinence (OAB, stress, mixed, neurogenic).			LIGS	MCQS
PROSTATE AND MALE GENITOURINARY DISORDERS					
Re2-Pa-007	Explain the etiology, pathogenesis, and morphology of benign prostatic hyperplasia (BPH), prostatitis, and prostate cancer. Identify the tumor marker for prostate cancer and its use in diagnosis and monitoring.	Pathology	Prostatic Diseases (BPH, Prostatitis, Prostate Cancer)	LIGS	MCQS
Re2-Uro-008	Describe the anatomy and physiology of the prostate gland. Differentiate between benign and malignant prostatic diseases. Describe clinical features of: • BPH • Prostatitis • Prostate cancer Discuss diagnostic evaluation, including PSA testing and imaging. Outline management plan.	Urology		LIGS	MCQS
Re2-PS-008a	Enlist contraindications to circumcision. Plan circumcision (methods). Discuss counselling points regarding timing of surgery and follow-up.	Pediatric Surgery	Circumcision	LIGS	MCQS
RENAL, UROTHELIAL, AND TESTICULAR TUMORS					

Re2-Pa-009	Classifyrenal tumorsintobenignandmalignanttypes. 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)	LIGS	MCQS
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	Correlate pathological features with clinical manifestations and complications. Discuss the prognostic factors influencing outcome and survival. Outline the principles of diagnosis and management.			LIGS	MCQS
Re2-Pa-010	Define Wilms' tumor and describe its epidemiological features. Explain the genetic and developmental basis of its pathogenesis. Describe the gross and microscopic morphological features of Wilms' tumor. Correlate the pathological findings with clinical manifestations. Discuss the prognostic factors influencing outcome and survival. Outline the basic principles of diagnosis and management.	Pathology/ Nephrology	Wilms Tumor (Nephroblastoma)	LIGS	MCQS
Re2-Pa-011	Describe the etiology and risk factors of Urothelial cell carcinoma. Explain the pathogenesis and morphological features (gross and microscopic).	Pathology		LIGS	MCQS

Re2-Uro-012	Describe the clinical features and common presentations of Urothelial cell carcinoma Enlist the diagnostic investigations used in the evaluation. Outline management plan and factors affecting prognosis.	Urology	Urothelial cell carcinoma	LIGS	MCQS
Re2-Pa-013	Classify testicular tumors. Describe etiology, pathogenesis, and morphology of germ cell and sex cord tumors of testis. Describe the lab diagnosis of testicular tumors including tumor markers.	Pathology	Testicular tumors	LIGS	MCQS

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

Re2-PS-018	Classify the types of Undescended testis. Identify complications. Outline management and timing of surgery and referral.	Pediatric Surgery	Undescended testis	LIGS	MCQS
Re2-PS-019	Describe testicular torsion considering it as surgical emergency. Describe its pathophysiology. Identify the clinical presentation. Outline investigations and management plan including timely referral.	Pediatric Surgery	Torsion testis	LIGS	MCQS

PRACTICAL/LABWORK					
CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC	TEACHING/ LEARNING	ASSESSMENT TOOLS
Re2-Pa-020	Interpret urine analysis report, including protein, RBCs, casts, infection markers, and microscopic examination of urine sediment.	Pathology	Urine Examination	LGIS& SGD	VIVA OSPE
Re2-Pa-021	Interpret renal function tests, including serum creatinine, blood urea, electrolytes, and eGFR.	Pathology	Renal Function Test	LGIS& SGD	VIVA OSPE
Re2-Pa-022	Identify the classical microscopic features of nephritic diseases (PSGN) and nephrotic diseases (minimal change, membranous, FSGS). (pictorial)	Pathology	Glomerulonephritis	LGIS& SGD	VIVA OSPE
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	LGIS& SGD	VIVA OSPE
Re2-Pa-024	Identify the classical gross and microscopic features of seminoma, teratoma, and benign prostatic hyperplasia (BPH). (pictorial)	Pathology	Testicular tumors	LGIS& SGD	VIVA OSPE



ENT-II

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

SUBJECTS INTEGRATED IN THE MODULE

Anatomy

Physiology

Pharmacology

Forensic Medicine

THEORY					
ENT-II(NOSE)					
CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC	TEACHING/ LEARNING	ASSESSMENT TOOLS

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

ENT2- Nose- 004	Identify the etiology of Deviated Nasal Septum (DNS) and its types. Describe clinical presentation.	Nasal Septum Deformities	LIGS	MCQS
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RECOMMENDED BOOKS

1. Brenner and Rector's The Kidney - Skorecki, Chertow & Marsden
2. Harrison's Principles of Internal Medicine (Renal chapters)
3. Robbins and Cotran Pathologic Basis of Disease - Kumar, Abbas & Aster
4. Katzung's Basic and Clinical Pharmacology (Renal pharmacology chapters)
5. Davidson's Principles and Practice of Medicine

RECOMMENDED BOOKS

1. Brenner and Rector's The Kidney - Skorecki, Chertow & Marsden
2. Harrison's Principles of Internal Medicine (Renal chapters)
3. Robbins and Cotran Pathologic Basis of Disease - Kumar, Abbas & Aster
4. Katzung's Basic and Clinical Pharmacology (Renal pharmacology chapters)
5. Davidson's Principles and Practice of Medicine

	Enlist the surgical procedures to correct DNS. Identify complications of nasal septal surgery. Enlist the causes of Septal Perforation. Describe its clinical presentation. Enlist investigation to rule out cause of septal perforation. Outline the management plan. Enlist the causes of Septal Abscess. Identify its clinical presentation and complications. Outline the treatment of septal abscess.			LIGS	MCQS
ENT2- Nose- 005	Define and classify Rhinitis. Describe clinical features of infective rhinitis with management. Describe the clinical features of following types of non-infective rhinitis and their management: - Allergic Rhinitis - Vasomotor Rhinitis - Atrophic Rhinitis - Hypertrophic Rhinitis - Rhinitis Medicamentosa	ENT	Rhinitis (Infective and Non-infective)	LIGS	MCQS

ENT2- Nose- 006	Define Sinusitis. Describe clinical presentation. Enlist investigations. Describe the treatment of acute and chronic Sinusitis. Enlist the surgical procedures done in case of chronic Sinusitis. Identify complications of Sinusitis.	ENT	Infection of the Paranasal Sinuses	LIGS	MCQS
ENT2- Nose- 007	Define Nasal Polyp. Describe its etiology and clinical features. Differentiate between Antrochoanal and ethmoidal polyps. Outline the management plan.		Nasal Polyps	LIGS	MCQS
ENT2- Nose- 008	Enlist the causes of Epistaxis. Describe its clinical features. Outline initial management and preventive strategies.		Epistaxis	LIGS	MCQS

ENT2- Nose- 009	Identify clinical features of maxillofacial trauma. Enlist necessary investigations. Outline steps for initial management. Discuss the management of the following: - Fracture nasal bone - Mandibular fracture - Maxillary bone fracture - Zygomatic fracture - Orbital blowout fracture Enlist the etiology of CSF Rhinorrhoea. Describe its clinical presentation. Outline investigations and management plan. Describe the medico-legal implications of maxillofacial trauma, including proper documentation, reporting requirements, and preservation of evidence for legal purposes. (Integrate with Forensic Medicine-see annexure A)	ENT/Forensic medicine	Facial Trauma (Maxillofacial)	LIGS	MCQS
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ENT2- Nose- 010	Describe the clinical features and ENT manifestations of Nasal Tuberculosis. Explain the pathology, clinical presentation, and complications of leprosy involving the nose. Discuss the clinical features, diagnosis, and management of invasive Aspergillosis of the paranasal sinuses. Describe the presentation, rapid progression, and surgical importance of Mucormycosis. Explain the nasal and systemic manifestations of Wegener's granulomatosis and its diagnostic approach. Describe ENT features of Systemic Lupus Erythematosus with emphasis on nasal involvement. Discuss the clinical features and diagnostic findings of Sarcoidosis affecting the nose and paranasal sinuses.	ENT	Granulomatous Disorders of Nose & Paranasal Sinuses	LIGS	MCQS
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ENT2-Nose-011	Describe the pathology, clinical features, and surgical importance of Inverted Papilloma. Explain the clinical presentation, diagnosis, and management principles of Transitional cell carcinoma of the sinonasal region. Correlate the surgical anatomy of the sinonasal region with the spread and complications of these neoplasms.	ENT/Pathology	Sinonasal neoplasm	LIGS	MCQS
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MODULERATIONALE

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 wider 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

THEORY					
EYE-II					
CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC	TEACHING/ LEARNING	ASSESSMENT TOOLS
Eye2-001	Define uveitis and classify based on anatomical location and etiology. Describe the pathophysiology of uveitis. Identify the key clinical features of uveitis. Differentiate uveitis from other causes of red eye using history and clinical examination. Explain the principles of treatment, including corticosteroid therapy, immunosuppressive agents, and management of complications.	Ophthalmology	Uveal tract	LIGS	MCQS
Eye2-002	Describe the normal pupillary reactions (direct light reflex, consensual light reflex, and accommodation reflex). Describe abnormal pupillary reactions (Marcus Gunn pupil/RAPD, Argyll Robertson pupil, Adie's pupil and Horner's syndrome with their underlying causes).		Pupil	LIGS	MCQS

Eye2-003	Classify cataract. Describe cataract secondary to systemic diseases. Explain the symptoms, signs, investigations, and management plan for congenital cataract. Diagnose acquired cataract based on symptoms, signs, pathophysiology and investigation findings. Justify selection of treatment options for acquired cataract. Enumerate the pre and post-operative complications of cataract surgery Explain congenital cataract secondary to TORCH infections.		Lens	LIGS	MCQS
Eye2-004	Define glaucoma. Classify the different types of glaucoma.	Ophthalmology	Glaucoma	LIGS	MCQS

Describe the anatomy of the anterior chamber angle and aqueous humor outflow/Drainage pathways in relation to glaucoma. Explain the etiology and pathophysiology of various types of glaucoma. (open, close, primary, secondary, congenital, acquired) Enumerate the different types of secondary glaucoma. Describe the details of lens-induced glaucoma. Identify the characteristic clinical features of angle-closure glaucoma./different types of glaucoma (open, close, primary, secondary, congenital, acquired) Formulate the differential diagnosis of glaucoma. Outline the diagnostic investigations used for glaucoma. Outline the treatment plan for angle-closure glaucoma. Outline the treatment plan for open-angle and other types of glaucoma. Explain the pathophysiology of congenital glaucoma Outline the treatment plan for congenital glaucoma			LIGS	MCQS
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Classify anti-glaucoma medications.			LIGS	MCQS
Explain the mechanisms of action of anti-glaucoma			LIGS	MCQS

	drugs and their effect on intraocular pressure. Discuss the indications, contraindications, and adverse effects of anti-glaucoma medications. Write prescription of glaucoma. (Pharmacology)	Ophthalmology/ Pharmacology		LIGS	MCQS
				LIGS	MCQS
				LIGS	MCQS
Eye2-005	Define retinitis pigmentosa and describe its pathophysiology. Identify the characteristic signs and symptoms, including night blindness, peripheral field loss, and typical fundus changes (classical triad). Outline the treatment and supportive management options for patients with retinitis pigmentosa. Discuss the important counselling points in retinitis pigmentosa.	Ophthalmology	Retina and Vitreous	LIGS	MCQS

Describe the pathophysiology of diabetic retinopathy, including microvascular changes. Outline the clinical signs and imaging methods used for diagnosis, including fundus examination and optical coherence tomography, fundus fluorescein angiography, ultrasound Bscan. Explain the principles of management, including glycemic control, laser photocoagulation, intravitreal therapy, and vitrectomy.	Define retinal detachment and classify its types. Describe the pathophysiology and risk factors for retinal detachment. Recognize the clinical features and warning symptoms of different types of retinal detachments. Outline the diagnostic methods, including direct and indirect fundoscopy/ophthalmoscopy and imaging including ultrasound Bscan and OCT. Explain the principles of management, including medical and surgical options and postoperative care.	Ophthalmology		LIGS	MCQS
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Define retinopathy of prematurity and describe its pathophysiology. Identify the risk factors and etiological factors				LIGS	MCQS

	associatedwithretinopathyofprematurity. Recognize/Explaintheclinicalfeatures,gradingand complicationsofretinopathyofprematurity. Outlinethemethodsfordiagnosisandscreening protocolsinretinopathyofprematurity. Describethemanagementoptions,includingmedical, laser,andurgicalinterventions. Explainpreventivestrategiesandtheimportanceof timelyscreeningin at-riskinfants.			LIGS	MCQS
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Eye2-006	Definerefractiveerrorsanddescribetheirimpacton vision. Differentiatethemaintypes(myopia,hyperopia, astigmatism,andpresbyopia).	Ophthalmology	Refractiveerrors	LIGS	MCQS

	Explain the optical and anatomical basis of each refractive error. Identify key clinical features and diagnostic methods used to detect refractive errors. Outline the main management options, including spectacles, contact lenses, and refractive surgery.			LIGS	MCQS
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Modular Integrated Curriculum 2K23 MBBS Year-04

BLOCK-12



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

MODULE

31

**ENDOCRINOLOGY &
REPRODUCTION-II**



Syllabus



MODULERATIONALE

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

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

MODULE OUTCOMES

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

SUBJECTS INTEGRATED IN THE MODULE

Endocrinology/Medicine

Gynecology

Pharmacology Pathology

Urology

THEORY					
CODE	SPECIFIC LEARNING OUTCOMES	DISCIPLINE	TOPIC	TEACHING/ LEARNING	ASSESSMENT TOOLS
HYPOTHALAMIC AND PITUITARY DISORDERS					
EnR-En-001	Diagnose diabetes insipidus on the basis of characteristic symptoms and clinical presentation. Differentiate between central and nephrogenic types. Outline the investigations to reach the diagnosis. Formulate a management plan for central and nephrogenic cases. Identify potential complications if left untreated.	Endocrinology/ Medicine	Diabetes Insipidus	LIGS	MCQS
EnR-En-002	Describe the clinical features of precocious puberty. Differentiate between its central and peripheral causes. Develop a stepwise diagnostic and management plan for a patient presenting with precocious puberty.	Gynaecology/ Endocrinology	Precocious Puberty	LIGS	MCQS
EnR-En-003	Diagnose delayed puberty based on absence of secondary sexual characteristics by expected age. Explain the pathophysiology of GnRH deficiency. Develop a stepwise diagnostic and management plan for a patient presenting with precocious puberty.	Gynaecology/ Endocrinology	Delayed Puberty	LIGS	MCQS

EnR-En-004	Identify the clinical features of dwarfism due to growth hormone deficiency. Explain the underlying mechanisms leading to the disorder. List the investigations for diagnosing the condition. Plan the management of dwarfism caused by growth hormone deficiency. Identify possible complications associated with untreated cases.	Endocrinology/ Medicine	Dwarfism	LIGS	MCQS
EnR-En-005	Diagnose gigantism on the basis of characteristic signs and symptoms.	Endocrinology/ Medicine	Gigantism & Acromegaly	LIGS	MCQS

RECOMMENDED BOOKS

1. Kanski's Clinical Ophthalmology: A Systematic Approach - Bowling
2. Scott-Brown's Otorhinolaryngology, Head and Neck Surgery
3. Parson's Diseases of the Eye
4. Logan Turner's Diseases of the Nose, Throat and Ear
5. Harrison's Principles of Internal Medicine

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1. Kanski's Clinical Ophthalmology: A Systematic Approach - Bowling
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5. Harrison's Principles of Internal Medicine

	Describe its etiology. Outline investigation and discuss management plan. Identify potential complications. Diagnose acromegaly on the basis of characteristic signs and symptoms. Differentiate acromegaly from gigantism. Describe the underlying etiology. Outline the approach to investigation and discuss management strategies. List complications.			LIGS	MCQS
EnR-Pa-006	Classify pituitary adenomas. Describe etiopathogenesis of pituitary adenomas. Describe their gross and microscopic pathological features. Correlate the clinical features with the type of hormone secreted (prolactinoma, somatotroph adenoma, corticotroph adenoma). Discuss the complications. Outline the diagnostic approach including hormonal assays, imaging findings, and histopathology.	Pathology	Pituitary Adenomas	LIGS	MCQS
EnR-En-007	Diagnose SIADH based on signs and symptoms. Explain underlying mechanism leading to the development of SIADH. List the investigations and plan management. List the potential complications of SIADH.	Endocrinology/ Medicine	SIADH	LIGS	MCQS

EnR-En-008	Describe the role of melatonin in regulating circadian rhythm. Recognize clinical implications of melatonin deficiency or excess. Outline the use of melatonin in supplements in clinical practice.	Endocrinology /Medicine	Pineal Dysfunction and Sleep Disorders	LIGS	MCQS
EnR-Ph-009	Classify hypothalamic and pituitary hormones and state their functions. Describe the pharmacokinetics of pituitary and hypothalamic hormones.	Pharmacology	Hypothalamic and Pituitary Hormones	LIGS	MCQS

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

THYROIDANDPARATHYROIDDISORDERS					
CODE	SPECIFICLEARNINGOUTCOMES	DISCIPLINE	TOPIC	TEACHING/ LEARNING	ASSESSMENT TOOLS
EnR-En-013	Enlistcausesofhypothyroidism. Discussthepathophysiologyofdecreasedthyroid hormone production. Identifytheclinicalfeaturesandcomplicationsofhypothyroidism. InterpretdiagnostictestsofTSH,T₃,T₄.	Endocrinology /Medicine	Hypothyroidism	LIGS	MCQS

	Outline treatment plan and long-term follow-up.			LIGS	MCQS
EnR-En-014	Explain the pathophysiology of excessive thyroid hormone production and its systemic effects. Enlist etiologies of hyperthyroidism. Explain the autoimmune mechanism and clinical triad of Graves' disease. Diagnose hyperthyroidism based on the symptoms and signs, laboratory and imaging diagnostic findings. Discuss medical and surgical management strategies. Explain the pathophysiology, precipitating factors, clinical features, and emergency management of thyroid storm. Explain the importance of long-term monitoring and patient education regarding medication adherence and follow-up.	Endocrinology /Medicine	Hyperthyroidism	LIGS	MCQS
EnR-Pa-015	Classify thyroid tumors based on histopathological types: papillary, follicular, medullary, anaplastic. Identify clinical presentation, risk factors, and diagnostic approaches including molecular testing. Identify prognostic indicators and follow-up requirements.	Pathology	Thyroid Neoplasms	LIGS	MCQS

EnR-Ph-016	Describe different thyroid preparations. Describe the pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications of thyroid preparations.	Pharmacology	Thyroid Preparations	LIGS	MCQS
EnR-Ph-017	Classify anti-thyroid drugs. Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications.	Pharmacology	Anti-Thyroid Drugs	LIGS	MCQS
EnR-Ph-018	Describe the Jod-Basedow phenomenon caused by iodides.	Pharmacology	Iodides and Related Phenomena	LIGS	MCQS

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

EnR-Ph-023	Enumerate drugs used for the treatment of hypercalcemia. Describe their mechanism of action, clinical uses, and adverse effects (e.g., calcitonin, bisphosphonates, corticosteroids).	Pharmacology	Drugs Used in the Treatment of Hypercalcemia	LIGS	MCQS
EnR-Ph-024	List bisphosphonates. Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions, and contraindications.	Pharmacology	Bisphosphonates	LIGS	MCQS

PANCREATIC DISORDERS					
CODE	SPECIFIC LEARNING OUTCOMES	DISCIPLINE	TOPIC	TEACHING/LEARNING	ASSESSMENT TOOLS
EnR-En-025	Describe the underlying pathophysiology of pancreatic β-cells leading to insulin deficiency. Diagnose Type 1 Diabetes Mellitus based on clinical presentation and diagnostic findings. Identify acute complications of T1DM. Describe the pathophysiology, clinical manifestations, and laboratory findings of diabetic ketoacidosis. Outline the management principles of Type 1 Diabetes Mellitus, focusing on insulin therapy, dietary regulation, lifestyle modification, and self-monitoring of blood glucose.	Endocrinology/ Medicine/ Pathology	Diabetes Mellitus Type 1	LIGS	MCQS
EnR-En-026	Identify clinical presentation of Type 2 Diabetes and differentiate it from type 1 diabetes. Describe the pathophysiology of insulin resistance and relative insulin deficiency. Identify risk factors. Discuss diagnosis and monitoring. Outline management strategies and patient counselling.		Diabetes Mellitus Type 2	LIGS	MCQS
EnR-Ph-027	Classify oral antidiabetic drugs	Pharmacology	Oral Antidiabetic Drugs	LIGS	MCQS

EnR-Ph-029	Classify insulins. Describe the pharmacokinetics of different insulin preparations. Explain the mechanism of action of insulin. Describe the pharmacological effects and efficacy of insulin. Enumerate the clinical uses of insulin. Discuss adverse effects, drug interactions, and contraindications of insulin.	Pharmacology	Insulin	LIGS	MCQS
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	Describe the concept and causes of insulin resistance.			LIGS	MCQS
EnR-Ph-030	Classify sulfonylureas. Explain the mechanism of action of sulfonylureas. Enumerate their clinical uses. Describe their adverse effects.	Pharmacology	Sulfonylureas	LIGS	MCQS
EnR-Ph-031	Classify biguanides. Explain the mechanism of action of biguanides. Enumerate their clinical uses. Describe their adverse effects.	Pharmacology	Biguanides	LIGS	MCQS
EnR-Ph-032	Classify thiazolidinediones. Explain the mechanism of action of thiazolidinediones. List their clinical uses and adverse effects.	Pharmacology	Thiazolidinediones	LIGS	MCQS
EnR-Ph-033	Classify alpha-glucosidase inhibitors and amylin analogues. Explain their mechanism of action. List their clinical uses and adverse effects.	Pharmacology	Alpha-Glucosidase Inhibitors and Amylin Analogues	LIGS	MCQS
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	LIGS	MCQS

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	LIGS	MCQS
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	LIGS	MCQS
ADRENAL GLAND DISORDERS					
CODE	SPECIFIC LEARNING OUTCOMES	DISCIPLINE	TOPIC		

EnR-En-037	Describe the pathophysiology of Cushing's Syndrome. Differentiate between Cushing's syndrome and Cushing's disease. Diagnose Cushing's syndrome based on key clinical features. Interpret relevant diagnostic investigations including cortisol levels and dexamethasone suppression test. Outline the principles of management, including surgical and medical options.	Endocrinology/ Medicine	Cushing's Syndrome	LIGS	MCQS
EnR-En-038	Explain the pathophysiology of adrenal insufficiency leading to Addison's disease. Diagnose Addison's disease based on key clinical presentation. Interpret diagnostic tests including serum cortisol, ACTH, and electrolyte levels. Outline the management plan.	Endocrinology/ Medicine	Addison's Disease	LIGS	MCQS
EnR-En-039	Explain the underlying pathophysiology of Conn's Syndrome. Identify the key clinical manifestations and correlate them with the underlying biochemical changes. Interpret the laboratory findings and diagnostic tests used to confirm Conn's syndrome. Outline the principles of management, including medical and surgical treatment options.	Endocrinology/ Pathology	Conn's Syndrome	LIGS	MCQS

EnR-Pa-040	Classifyadrenaltumors. Describe the etiopathogenesis of pheochromocytoma. Explain the morphological features of pheochromocytoma. Describe the clinical manifestations due to excess catecholamine secretion. Interpret relevant laboratory and imaging findings used in the diagnosis of adrenaltumors.	Pathology/ Endocrinology	Tumors of the adrenal cortex and medulla	LIGS	MCQS
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	Outline the principles of management, including surgical, medical, and supportive treatment approaches.			LIGS	MCQS
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	LIGS	MCQS
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	LIGS	MCQS

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	LIGS	MCQS
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	LIGS	MCQS

	Classify benign, premalignant, and malignant tumors of breast. Enumerate molecular types of breast carcinoma. Describe the incidence, epidemiology, risk factors, pathogenesis, and morphology of breast carcinomas. Describe the prognostic and predictive factors for invasive carcinoma of breast. Describe grading and staging of breast carcinoma. Describe the role of FNAC, biopsy, and immunohistochemistry in diagnosis of breast cancer. Enumerate stromal tumors of breast. Describe the morphology of fibroadenoma and Phyllodes tumors.			LIGS	MCQS
EnR-En-045	Describe causes of Hyperprolactinemia. Explain the pathophysiology of hyperprolactinemia. Identify clinical presentation and interpret diagnostic tests. Outline management plan.	Endocrinology/ Medicine	Hyperprolactinemia	LIGS	MCQS
EnR-Pa-046	Describe the morphological features of uterine fibroids. Classify the types of fibroids based on location: submucosal, intramural, subserosal, and pedunculated. Explain the pathogenesis of fibroid development, including hormonal influences (estrogen and progesterone) and genetic factors.	Pathology	Uterine Fibroids	LIGS	MCQS

EnR-Gyn-047	Define female Subfertility and its significance in reproductive health Describe type of Subfertility (primary, secondary). Describe the common causes of female Subfertility, including ovulatory disorders, structural abnormalities, and endocrine issues. Discuss the impact of lifestyle factors on female fertility.	Gynaecology	Female Subfertility	LIGS	MCQS
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EnR-Ph-048	Classify drugs used for treatment of subfertility. Enlist progesterone antagonists. Describe pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions and contraindications of progestogen antagonists. Enlist androgen and antiandrogen preparations. Describe pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions and contraindications. Enumerate estrogen & progestogen preparations. Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions and contraindications. Classify Contraceptives. Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions and contraindications. Enlist estrogen antagonists. Describe their pharmacokinetics, mechanism of action, pharmacological effects, uses, adverse effects, drug interactions and contraindications. Describe use of Clomiphene in treatment of Subfertility. Describe the use of Anti Estrogen (Letrozole) in the treatment of Subfertility.	Pharmacology	Treatment of subfertility	LIGS	MCQS
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	Tabulate differences between Clomiphene and Letrozole.			LIGS	MCQS
EnR-Ph-049	Explain the pathophysiology of male subfertility, including the role of testosterone and other hormones. Discuss the clinical features associated with male subfertility and hypogonadism, including symptoms and signs.	Urology/ Endocrinology	Male Subfertility	LIGS LIGS	MCQS MCQS

	Enlisttheinvestigations. InterprettheSemenAnalysisparameter.			LIGS	MCQS
EnR-Ph-050	Enumerateanabolicsteroids. Describepharmacokinetics,mechanismofaction,pharmacologicaleffects,uses,adverseeffects,druginteractionsandcontraindicationsofTestosterone	Pharmacology	Anabolicsteroids	LIGS	MCQS
EnR-Pa-051	Define premalignant uterine conditions, including endometrial hyperplasia and its types. Describe the pathophysiology and histological classification of endometrial hyperplasia. Describe the pathophysiology and histological features of Hydatidiform mole. Explain the pathological mechanisms underlying progression from atypical endometrial hyperplasia to endometrial carcinoma. Classify uterine carcinoma based on histological type (endometrial carcinoma, uterine sarcoma) and describe its pathophysiology and staging. Discuss the prognosis of uterine carcinoma based on stage, grade, and histological type.	Pathology	Premalignant and Malignant Conditions of Uterus	LIGS	MCQS

EnR-Pa-052	Define benign cervical lesions and CIN. Differentiate between benign and premalignant cervical lesions based on histopathology. Explain the principles of cervical cytology, including Pap smear technique, interpretation, and the Bethesda reporting system. Describe the pathological significance of HPV infection in cervical lesions. Identify indications for cervical biopsy during colposcopy.	Pathology	Benign and Premalignant Lesions of the Cervix	LIGS	MCQS
EnR-Pa-053	Define benign ovarian cysts and classify them (functional cysts, dermoid cysts). Describe the pathophysiology and histological features of functional ovarian cysts (follicular and corpus luteum cysts).	Pathology	Benign and malignant ovarian tumors	LIGS	MCQS

	Define malignant ovarian neoplasms and categorize them into epithelial, germ cell, and sex-cord stromal tumors. Explain the pathophysiology and molecular mechanisms involved in ovarian tumor development.			LIGS	MCQS
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PRACTICAL/ LAB WORK					
CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC	TEACHING/ LEARNING	ASSESSMENT TOOLS
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	LGIS & SGD	VIVA OSPE
EnR-Pa-054	Diagnose Diabetes Mellitus on the basis of lab investigations.	Pathology	Lab investigations for Diabetes Mellitus	LGIS & SGD	VIVA OSPE
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	LGIS & SGD	VIVA OSPE
EnR-Pa-056	Identify classical gross and microscopic features of fibroadenoma and breast carcinoma.	Pathology	Breast tumors	LGIS & SGD	VIVA OSPE

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

MODULE

32

DERMATOLOGY



MODULENO.32: **Dermatology**

MODULERATIONALE

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	TEACHING/ LEARNING	ASSESSMENT TOOLS
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	LIGS	MCQS
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	LIGS	MCQS
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	LIGS	MCQS

Derm2-004	Classifydermatitis. Enlist the common forms of endogenous and exogenous eczema.	Dermatology	Eczema/dermatitis	LIGS	MCQS
Derm2-005	Describe the etiology and predisposing factors of atopic dermatitis. Identifytheclinicalfeatures. Differentiate atopic dermatitis from seborrheic dermatitis, scabies, and contact dermatitis on basis of clinical features. Outlinetreatmentandpreventivestrategies.	Dermatology	Atopic Dermatitis	LIGS	MCQS

RECOMMENDED BOOKS

1. Williams Textbook of Endocrinology - Melmed, Polonsky, Larsen & Kronenberg
2. Greenspan's Basic and Clinical Endocrinology
3. Robbins and Cotran Pathologic Basis of Disease - Kumar, Abbas & Aster
4. Katzung's Basic and Clinical Pharmacology
5. Shaw's Textbook of Gynaecology - Padubidri & Daftary

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Derm2-006	Explain the etiology and role of Malassezia, sebum, immune factors. Identify clinical features of seborrheic dermatitis. Differentiate seborrheic dermatitis from psoriasis, atopic dermatitis, and pediculosis. Outline treatment and preventive strategies for relapse control.	Dermatology	Seborrheic Dermatitis	LIGS	MCQS
Derm2-007	Differentiate between irritant and allergic contact dermatitis in terms of etiopathogenesis, and clinical features. Identify the clinical features of contact dermatitis. Differentiate contact dermatitis from atopic dermatitis, urticaria, and scabies. Outline treatment plan and preventive measures.	Dermatology	Contact Dermatitis	LIGS	MCQS
Derm2-008	Describe the etiology and pathophysiology of urticaria. Identify clinical features. Differentiate urticaria from contact dermatitis, scabies, and drug reactions on basis of sign and symptoms. Outline emergency management for angioedema/anaphylaxis.	Dermatology/ Medicine	Urticaria	LIGS	MCQS
	Define bullous disorders.			LIGS	MCQS

Derm2-009	Classify immune-mediated bullous disorders. Explain the pathogenesis of: - Pemphigusvulgaris - Bullouspemphigoid - Dermatitisherpetiformis Describe the clinical presentation and lesion morphology of each disorder. Differentiate between these disorders on the basis of site, blister type, and mucosal involvement. Enlist appropriate diagnostic tests. Outline management plan. Enlist potential complications and their preventive measures.	Dermatology	Bullous disorders	LIGS	MCQS
	Defineepidermolysisbullosa.	Dermatology		LIGS	MCQS

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

Derm2-012	Describe the etiopathogenesis of lichen planus. Identify the classical clinical features. Enlist the differential diagnosis of lichen planus. Outline the treatment plan. Discuss preventive and long-term considerations, including malignant transformation risk.	Dermatology/ Pathology	Lichen Planus	LIGS	MCQS
Derm2-013	Differentiate erythema multiforme and erythema nodosum in terms of etiology, clinical features, morphology,	Dermatology	Erythema Multiforme and erythema nodosum	LIGS	MCQS

	distribution, associated conditions, and principles of management.			LIGS	MCQS
Derm2-014	Identify drug causing Stevens-Johnson syndrome. Describe the characteristic signs and symptoms. Outline management plan.	Dermatology/ Pharmacology	Stevens-Johnson Syndrome (SJS)	LIGS	MCQS
Derm2-015	Describe toxic epidermal necrolysis with its pathophysiology. Identify the common causative drugs and triggers of TEN. Identify the hallmark clinical features including extent of epidermal detachment and systemic involvement. Identify complications of TEN and their impact on prognosis. Outline the principles of intensive treatment and supportive care in TEN.		Toxic Epidermal Necrolysis (TEN)	LIGS	MCQS
	Describe the role of Staphylococcus aureus as a causative organism in skin infections. Describe the clinical patterns including impetigo, bullous impetigo, boils (abscesses), bacterial folliculitis, and infected eczema. Outline the diagnostic considerations, complications, and management principles.	Dermatology/ Microbiology		LIGS	MCQS

Derm2-016	Identify acute bacterial skin infections caused by <i>Streptococcus pyogenes</i>. 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	LIGS	MCQS
Derm2-017	Describe the etiological agent and routes of infection of cutaneous tuberculosis. Identify the major clinical forms of cutaneous tuberculosis. Outline the diagnostic approach and treatment.	Dermatology/ Microbiology	Chronic bacterial skin infections	LIGS	MCQS

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

Derm2-018	Explain the etiopathogenesis of herpes zoster (Shingles) including reactivation of varicella-zoster virus. Describe the clinical features, dermatomal distribution, and prodromal symptoms. Differentiate herpes zoster from HSV, contact dermatitis, and impetigo on basis of clinical features. Outline management and prevention strategies.	Dermatology/ Microbiology	Viral skin infections	LIGS	MCQS
	Identify the etiology and types of herpes simplex. Discuss the clinical presentation of primary and recurrent HSV infections. Discuss differential diagnosis of herpes simplex. Outline the management plan.	Dermatology/ Microbiology		LIGS	MCQS
Derm2-019	Describe the etiology of tinea. Discuss the clinical features of different types of tinea.	Dermatology	Fungal skin infections	LIGS	MCQS

	Differentiate tinea from eczema, psoriasis, seborrheic dermatitis, and candidiasis. Outline the diagnostic approach, treatment options, and preventive measures.			LIGS	MCQS
	Explain the etiology of Pityriasis Versicolor and predisposing factors. Describe the clinical presentation. Differentiate pityriasis versicolor from vitiligo. Outline diagnostic tests and management plan.	Dermatology		LIGS	MCQS
Derm2-020	Classify the types of leishmaniasis. Describe the clinical features of cutaneous, mucocutaneous, and visceral leishmaniasis. Enlist its complications. Outline the diagnostic methods, treatment options and preventive measures.	Parasitology/ Dermatology	Protozoal skin infection	LIGS	MCQS
Derm2-021	Define vitiligo and describe its epidemiology. Explain the underlying pathogenetic mechanisms. Describe its clinical features. Make differential diagnosis of hypopigmented skin lesions. Discuss the management options. Outline the psychosocial impact of vitiligo.	Dermatology		LIGS	MCQS
	Define melasma and describe its etiology and epidemiology. Describe the clinical features with its treatment options. Describe adverse effects of de-melanizing agents.	Dermatology	Pigmentation Disorders	LIGS	MCQS

	Define albinism and explain its genetic basis. Describe the clinical features. Outline management plan.	Dermatology		LIGS	MCQS
Derm2-022	Describe the role of sunscreen in protecting skin. Explain the importance of Sun Protection Factor (SPF) and choosing an appropriate SPF for daily use. Describe the correct method of applying sunscreen, including quantity, timing, and reapplication.	Dermatology	Use of sunscreen	LIGS	MCQS

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

Derm2-025	Discuss types of naevi with reference to clinical and morphological features. Differentiate benign nevus from malignant melanoma on the basis of clinical signs.	Pathology/ Dermatology	Naevi	LIGS	MCQS
Derm2-026	Describe the signs and symptoms of malignant melanoma. Enlist the risk factors. Outline the diagnostic investigations and management. Explain the importance of early detection for survival outcomes.	Pathology/ Dermatology	Cutaneous tumors	LIGS	MCQS

	Describe the clinical features of basal cell carcinoma. Discuss diagnostic methods and outline the management.	Pathology/ Dermatology		LIGS	MCQS
	Enlist the predisposing factors for squamous cell carcinoma. Describe the clinical presentation. Identify diagnostic approaches with treatment options.	Pathology/ Dermatology		LIGS	MCQS
				LIGS	MCQS
				LIGS	MCQS



ENT-III

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

THEORY					
ENT-III(THROAT)					
CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC	TEACHING/ LEARNING	ASSESSMENT TOOLS
ENT-Throat-001	Enlist cystic lesions of oral cavity. Discuss differential diagnosis of following cystic lesions of oral cavity and their treatment - Mucocele - Ranula - Dermoid cyst	ENT	Cystic lesions of oral cavity	LIGS	MCQS
ENT-Throat-002	Identify the clinical features and order investigations of sialadenitis, sialolithiasis, and sialiectasis. Outline the treatment plan for sialadenitis, sialolithiasis, and sialiectasis		Salivary Gland Disorders	LIGS	MCQS
ENT-Throat-003	Describe the etiology and risk factors of aphthous ulcer. Explain the morphological features of aphthous ulcer. Differentiate aphthous ulcers from other oral ulcers. Outline the management plan of aphthous ulcer.		Aphthous ulcer	LIGS	MCQS

ENT-Throat-004	Describe the etiology, predisposing factors, and clinical features of Vincent's angina. Differentiate Vincent's angina from diphtheria. Discuss the diagnostic approach, including clinical examination and smear findings. Enlist the complications associated with Vincent's angina. Outline the management plan of Vincent's angina.		Vincent's angina	LIGS	MCQS
ENT-Throat-005	Describe the clinical features, differential diagnosis, and management of leukoplakia and erythroplakia of the tongue.		Leukoplakia and erythroplakia	LIGS	MCQS
ENT-Throat-006	Describe the surgical anatomy of the nasopharynx, oropharynx, and hypopharynx. Identify important anatomical relations and structures at risk during surgery.	ENT/Anatomy	Surgical anatomy and physiology of pharynx	LIGS	MCQS

RECOMMENDED BOOKS

1. Rook's Textbook of Dermatology - Griffiths, Barker, Bleiker et al.
2. Andrews' Diseases of the Skin: Clinical Dermatology - Elston, Ferringer et al.
3. Fitzpatrick's Dermatology in General Medicine
4. Lippincott's Pharmacology - Whalen, Finkel & Panavelil (Dermatology chapters)
5. Color Atlas and Synopsis of Clinical Dermatology - Fitzpatrick & Johnson

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5. Color Atlas and Synopsis of Clinical Dermatology - Fitzpatrick & Johnson

ENT- Throat- 007	Describe predisposing factors and the clinical presentations and treatment of acute & chronic pharyngitis.	ENT	Pharyngitis	LIGS	MCQS
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	LIGS	MCQS
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	LIGS	MCQS
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	LIGS	MCQS

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	LIGS	MCQS
ENT- Throat- 012	Define Plummer-Vinson syndrome and its classical triad.	ENT/Pathology	Plummer-Vinson syndrome	LIGS	MCQS

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

ENT- Throat- 016	Describe the etiology of vocal nodules. Explain the pathophysiology of vocal nodules. Identify the clinical features of vocal nodules. Outline the management principles of vocal nodules. Describe the etiology of vocal polyps. Explain the pathophysiology of vocal polyps. Recognize the clinical features of vocal polyps. Discuss the management of vocal polyps.		Hoarseness- Vocal nodules Vocal polyps	LIGS	MCQS
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ENT-Throat-017	Describe the clinical presentation of acute Epiglottitis. Enumerate the complications of Acute Epiglottitis. Outline the principles of emergency management of acute epiglottitis with emphasis on airway protection. Describe the role of antibiotics and supportive care in Acute Epiglottitis.		Acute Epiglottitis	LIGS	MCQS
ENT-Throat-018	Enlist congenital disorders of Larynx. Describe the clinical features, diagnosis, and natural course of laryngomalacia. Discuss the presentation, complications, and management of juvenile recurrent laryngeal papillomatosis.		Congenital conditions of Larynx	LIGS	MCQS

ENT-Throat-019	Describe the etiology and predisposing factors of following neck infections: - Cervical lymphadenitis and abscess - Cold abscess - Ludwig's angina - Parapharyngeal abscess - Retropharyngeal abscess - Peritonsillar abscess Describe the clinical presentation of neck space infections including warning signs. Interpret investigations (laboratory and imaging) required for the diagnosis of neck infections. Formulate a management plan for neck space infections. Explain the potential complications of untreated neck infections.	ENT	Infections of Head and Neck Spaces	LIGS	MCQS
ENT-Throat-020	Enlist the common types and sources of aero-digestive tract foreign bodies. Describe the clinical presentation of a patient presenting with aero-digestive tract foreign bodies. Discuss the diagnostic approach in a patient with suspected aero-digestive tract foreign bodies.	ENT/ Emergency medicine	Aero-digestive tract foreign bodies.	LIGS	MCQS

	Outline the initial emergency measures definitive management of aero-digestive tract foreign bodies with possible complications of delayed diagnosis or mismanagement.			LIGS	MCQS
ENT-Throat-021	Identify common signs and symptoms of laryngeal tumors. Describe appropriate investigations to confirm diagnosis Explain basic management options.	ENT	Laryngeal tumors	LIGS	MCQS
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	LIGS	MCQS

MODULERATIONALE

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 wider 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

THEORY					
EYE-III					
CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC	TEACHING/ LEARNING	ASSESSMENT TOOLS
Eye3-001	Define and classify strabismus. Classify Concomitant (non-paralytic) squint Explain the causes and types of non-paralytic squint. Recognize the clinical presentation and diagnostic signs of non-paralytic squint. Plan a management strategy for non-paralytic squint, including medical and surgical correction.	Ophthalmology	Squint/ Strabismus	LIGS	MCQS
	Classify In-Concomitant (paralytic) squint. Describe the etiology and pathophysiology of paralytic squint. Identify the clinical features and diagnostic signs of paralytic squint. Differentiate paralytic/In-Concomitant squint from non-paralytic/Concomitant squint based on history and examination. Outline the management plan for paralytic squint, including medical and surgical options. Describe the ocular manifestation of Myasthenia gravis.				
	Describe the underlying pathophysiology of papilledema in relation to raised intracranial pressure. List common causes of papilledema.			LIGS	MCQS

Eye3-002	Describe the clinical features of papilledema, including fundoscopic signs. List the differential diagnosis of papilledema. Discuss the principles of management of papilledema, including treating the underlying cause, reducing intracranial pressure, and preventing permanent vision loss.		Neuro-ophthalmology	LIGS	MCQS
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	Describe the underlying pathophysiology of papilledema in relation to raised intracranial pressure. List common causes of papilledema. Describe the clinical features of papilledema, including fundoscopic signs. List the differential diagnosis of papilledema. Discuss the principles of management of papilledema, including treating the underlying cause, reducing intracranial pressure, and preventing permanent vision loss.			LIGS	MCQS
	Define optic atrophy. Describe the etiology and classification of optic atrophy. Explain the underlying pathophysiology leading to optic nerve degeneration. Identify the clinical features and fundoscopic findings of optic atrophy. Discuss the relevant investigations used to diagnose optic atrophy. Formulate a differential diagnosis for optic atrophy.	Ophthalmology		LIGS	MCQS

	Define optic neuritis. List the causes and types of optic neuritis. Identify the signs and symptoms of optic neuritis. Outline the key investigations including fundoscopy, visual field testing, MRI, and blood tests for systemic associations. Describe the principles of management of optic neuritis.			LIGS	MCQS
Eye3-003	List the common causes and clinical features of oculomotor, trochlear, and abducens nerve palsies. Discuss the clinical significance of pupil involvement in oculomotor nerve palsy. Describe the ocular manifestations of facial nerve (VII) palsies such as lagophthalmos, impaired blink reflex, and exposure keratitis.		Visual pathways and visual field defects	LIGS	MCQS

RECOMMENDED BOOKS

1. Kanski's Clinical Ophthalmology: A Systematic Approach - Bowling
2. Parson's Diseases of the Eye
3. Scott-Brown's Otorhinolaryngology, Head and Neck Surgery
4. Logan Turner's Diseases of the Nose, Throat and Ear
5. Cummings Otolaryngology: Head and Neck Surgery

	Identifyocularcomplicationsthatmayarisefrom cranial nerve palsies. Outlinethemanagementplanandstrategiestoprotect theeyeinthesenervepalsies.			LIGS	MCQS
Eye3-004	Describe the anatomical course of the visual pathway. Correlate lesions at different levels of the visual pathway with characteristic visual field defects. Differentiatecommonvisualfielddefectsbasedon lesionlocation.	Ophthalmology/ Emergency Medicine/ Forensic Medicine	Oculartrauma	LIGS	MCQS
Eye3-005	Describe the clinical manifestations of different typesof ocular trauma. (burns, chemical injuries, blunt trauma, penetrating trauma) Discuss the early and late complications of ocular trauma. Describe the management plan for corneal and conjunctival foreign bodies. Describe the indications for referral of ocular injuries. Discuss themanagementplans for ocular burnsand chemical injuries. Explain the medicolegal responsibilities of physiciansin documentation, reporting, and evidencepreservation (including photographs and medico-legal certificates)incasesofoculartraumarelatedto assault,accidents,andoccupationalinjuries.	Ophthalmology/ Medicine	Systemic diseases	LIGS	MCQS

Enlist the symptoms and signs of thyroid eye disease. Explain its underlying pathophysiology. Discuss possible complications of thyroid eye disease. Outline relevant investigations, including blood tests, eye-related tests, and imaging. Formulate a comprehensive treatment plan for a patient with thyroid eye disease, including medical treatment and ocular interventions.	Ophthalmology/ Nutrition		LIGS	MCQS
Describe the ocular manifestations of vitamin A deficiency including night blindness, conjunctival and	Ophthalmology/ Medicine		LIGS	MCQS

	corneal xerosis, Bitot's spots, keratomalacia, xerophthalmia. Identify the methods of diagnosis including clinical signs. Discuss the management plan and prevention of ocular disease due to vitamin A deficiency.			LIGS	MCQS
	Describe the ocular manifestations of hypertension and diabetes. Differentiate the vascular changes in hypertensive retinopathy from those in diabetic retinopathy Describe stages of hypertensive retinopathy Describe stages of diabetic retinopathy Outline the management plan for ocular complications in hypertension and diabetes.	Ophthalmology/ Rheumatology		LIGS	MCQS
	Enlist the common collagen vascular diseases (e.g., rheumatoid arthritis, systemic lupus erythematosus, ankylosing spondylitis, Wegener's granulomatosis) associated with ocular involvement. Describe the ocular manifestations of collagen vascular diseases.	Ophthalmology/ Oncology		LIGS	MCQS

Eye3-006	Describe epidemiology and risk factors of retinoblastoma. Identify the common clinical signs and symptoms of retinoblastoma. Explain the diagnostic methods used in retinoblastoma, including fundoscopy and imaging. Discuss the available treatment options (enucleation, chemotherapy, radiotherapy, focal therapy, and intra-arterial chemotherapy). Outline the prognosis and long-term outcomes of retinoblastoma. Counsel patients and families regarding genetic counseling, risk of bilateral disease, and the importance of early detection.	Ophthalmology/ Oncology	Ophthalmic Oncology	LIGS	MCQS
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Eye3-006	Identify the risk factors and common signs and symptoms of (eyelid tumors including basal cell carcinoma, squamous cell carcinoma, sebaceous gland carcinoma, melanoma) ocular squamous cell carcinoma. Discuss the treatment plan for eyelid tumors. -	Ophthalmology/ Pharmacology	Ophthalmic Therapeutics	LIGS	LIGS
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Eye3-007	Antibiotics,Antivirals,andAntifungals: - Listcommonlyusedtopicalandsystemic agents in ophthalmology. - Describe their indications in eye infections (e.g., conjunctivitis, keratitis, endophthalmitis). - Discusscontraindications,dosageforms,and common adverse effects. LocalAnesthetics: - Explain the mechanism of action of ocular local anesthetics. - Identifytheirclinicaluses(e.g.,tonometry, minor surgical procedures). - Recognizeadverseeffectsandprecautionsin ophthalmic use. FluoresceinDye: - State the uses of fluorescein in ophthalmology(e.g., corneal ulcer, angiography). - Recognizeadversereactionsandlimitations. MydriaticsandCycloplegics: - Differentiate between mydriatics and cycloplegics. - Discussindicationsfortheiruse (e.g.,refraction, uveitis, fundoscopy). - Identifycontraindications(e.g.,narrow-angle glaucoma) and adverse effects. Corticosteroids: - Describetherolesoftopicalsteroidsinocular	Ophthalmology	Diagnostics	LIGS	LIGS
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inflammation.

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

ASSESSMENT TOOLS

ASSESSMENT TOOLS

Students will be assessed by the following methods

1. **Fortnightly assessments**

Assessments will be conducted every Monday covering all the lectures conducted in the previous week consisting of MCQs only.

2. **Assignments/CBLs:**

Assignments/CBLs will be given monthly.

3. **End of Module Exam:**

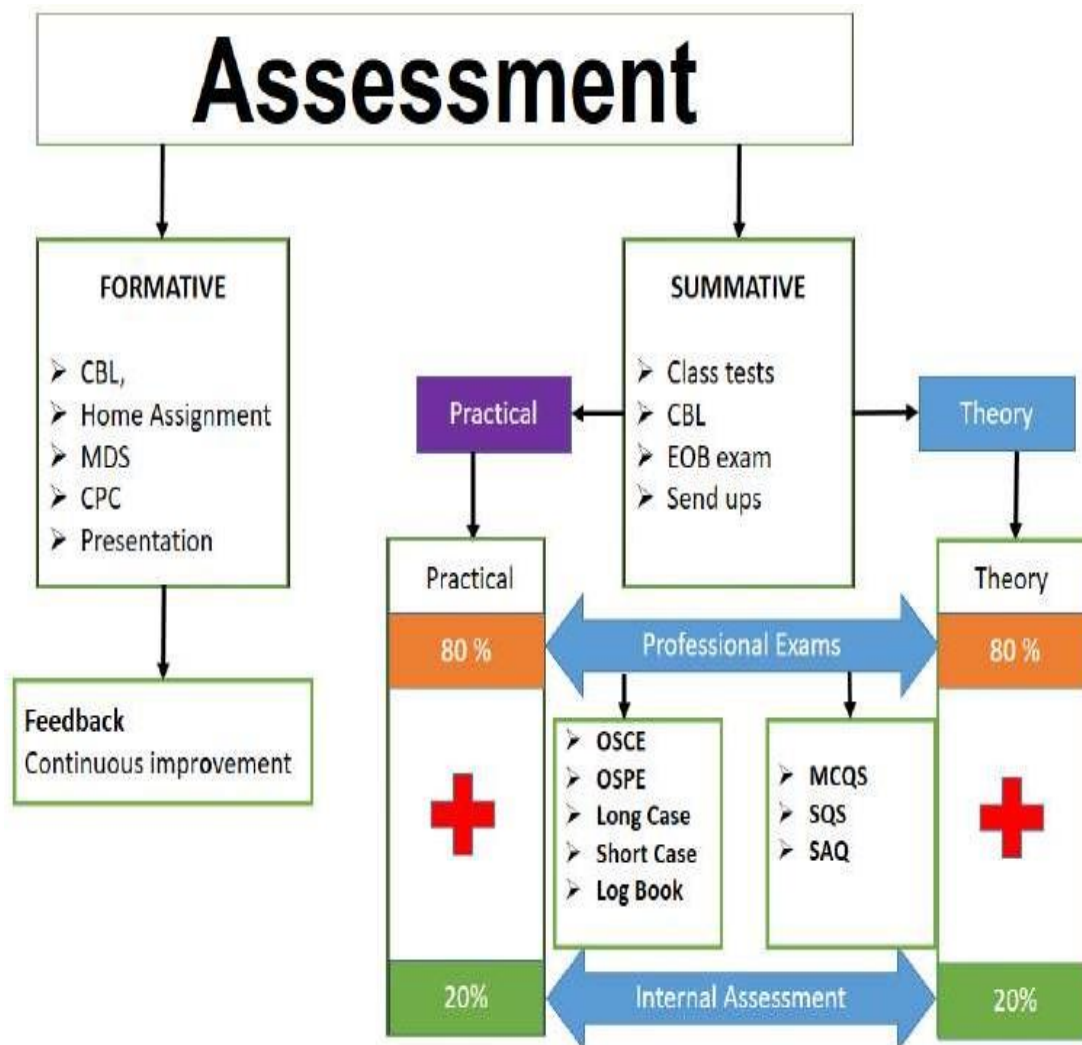
At the end of Foundation and H&L module, end of module exam covering all the LOs of the module consisting of MCQs would be conducted.

4. **Block Exam:**

At the end of block, an exam will be conducted comprising of theory (MCQs) and practical/OSPE content.

5. **Departmental quizzes, presentations & group projects:**

Above mentioned can be the assessment tools for different departments on their will.





Block-XI						
Modules	Theory		Practical			
	MCQs (1 mark each)	Marks	OSCE (8 marks each)	OSVE (10marks each)	Short Case (20marks each)	Marks
Neuroscience-II	38	38	3	1	-	34
Psychiatry&Behavioural Sciences	20+07	27	2	-	-	16
Renal-II	25	25	1	1	-	18
Eye-II	25	25	2	-	1	36
ENT-II	25	25	2	-	1	36
Total	140MCQs	140Marks	10stationsx8=80Marks	2stationsx10=20Marks	2shortcasesx20=40Marks	140Marks
GrandTotal=280Marks						

Block-XII						
Modules	Theory		Practical			
	MCQs (1 mark each)	Marks	OSCE (8 marks each)	OSVE (10marks each)	Short Case (20marks 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	140MCQs	140Marks	10stationsx8=80Marks	2stationsx10=20Marks	2shortcasesx20=40Marks	140Marks
GrandTotal=280Marks						

VOLUME:04



CLINICAL
ROTATIONS



C-FRC-04

YEAR-04

Clinical Rotations

Clinical Skills

04



MODULENO:27

NEUROSCIENCES-II

Code	Skills/Task
CFRC 4- NS2- 001	Historytaking Takeanddocument historyfrompatientspresentingwithstroke, epilepsy, headache/migraine,Parkinson'sdisease,ormeningitis/encephalitis.
CFRC 4- NS2- 002	GCSLevel Assessandrecord thepatient'slevelofconsciousnessusingtheGlasgowComa Scale.
CFRC 4- NS2- 003	CranialNerves Examine thefunctionofall12cranialnerves.
CFRC 4- NS2- 004	Motorexamination Perform acomplete motorexamination,includinggassessmentofmusclestrength, tone,bulk,reflexes,andcoordination.
CFRC 4- NS2- 005	Sensoryexamination Performs sensoryexaminationincludingtouch,pain,temperature,vibration,and proprioception.
CFRC 4- NS2- 006	Cerebellarfunctiontests Examine cerebellarfunctionthroughcoordinationtests,balance,andfinemotortasks (e.g.,finger-to-nose,heel-to-shin,Rombergtest).
CFRC 4- NS2- 007	GaitPatterns Observeandassess differentgaitpatterns(normal,hemiplegic,Parkinsonian, ataxic)andpostureabnormalities,anddocumentfindings.
CFRC 4- NS2- 008	Deeptendonreflexes Assess deeptendonreflexes,superficialreflexes,andpathologicalreflexes.
CFRC 4- NS2- 009	Meningealsigns Examine a patientofmeningitis for meningealsigns,including neckstiffness,Kernig's sign,andBrudzinski'ssign.
CFRC 4-	Higher cortical functions

NS2- 010	Assess higher cortical functionsincludinglanguage,memory,attention,calculation, praxis,andneglect.
CFRC	Lumbarpuncture Observeandnarrate thestepsoflumbarpunctureprocedure,includingpatient

4- NS2- 011	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)
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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.

PSYCHIATRY&BEHAVIORALSCIENCES

Code	Skills/Task
CFRC 4- PsyB hS- 001	Take a detailed psychiatric history from patients with common psychiatric disorders. (Depressive disorder, bipolar affective disorder, schizophrenia, generalized anxiety disorder, panic disorder, obsessive-compulsive disorder (OCD), alcoholism, ADHD, autism, personality disorders, acute suicidal ideation/attempt, acute aggression or violent behavior) Apply the non-pharmacological interventions in clinical settings (information care, breaking bad news, crisis intervention, disaster management, conflict resolution, progressive muscle relaxation & breathing exercises, and informed consent). Provide differential diagnosis based on history, MSE, and relevant investigations. Formulate a preliminary diagnosis and outline management plan.
CFRC 4- PsyB hS- 002	Mental state examination Perform mental state examination (MSE), assessing appearance, behavior, speech, mood, thought, perception, cognition, insight, and judgment. Interpret findings of MSE in common psychiatric conditions.
CFRC 4- PsyB hS- 003	Suicide risk assessment Conduct suicide risk assessment. Propose immediate management steps.
CFRC 4- PsyB hS- 004	Aggression/violence risk assessment Identify and assess risk of aggression or violence in psychiatric patients. Propose immediate management steps.
CFRC 4- PsyB hS- 005	Rapport building Establish rapport with patients and their families in a respectful, non-judgmental manner. Demonstrate empathetic listening and supportive communication in sensitive situations.
CFRC 4- PsyB hS- 006	Demonstrate respect for patient autonomy and confidentiality in psychiatric practice. Apply ethical principles in managing patients with impaired capacity or in involuntary treatment settings.

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

Annexure II

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

Patient Instructions for Urine Specimen Collection

Before Collection

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

For Midstream clean-catch Urine Specimen

For Female Patients

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

For Male Patients

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

Labeling and Documentation

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

Catheter Collections

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

Suprapubic Aspiration

Suprapubic aspiration is reserved exclusively for neonates and small children.

Suprapubic aspiration is indicated in the following conditions:

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

Transport of Urine Specimen to the Laboratory

- The specimen should be transported to the laboratory as soon as possible, preferably within 1 hour of collection. Since Urine itself serves as a good medium for multiplication of bacteria, early transport of urine specimen to the laboratory is very important to ensure accuracy and reliability of test 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	
	NOSE

Code	Skills/Task
CFRC 4- Nose- 001	• Historytaking • Obtainafocusedhistoryfrompatientspresentingwithnasalcomplaints • Clinicalexamination/managementskills • Performexternalexaminationofnoseandparanasalsinusesby inspectionandpalpation. • Assessnasalpatencyandolfaction. • Performanteriorandposteriorrhinoscopyandidentifynormaland abnormalfindings. • Identifynasalseptumdeviations,turbinatehypertrophy,polyps,and foreignbodies. • Observeandassistinnasalpackingforepistaxis. • Observeandassistinforeignbodyremovalfromnose. • Identifynasalfracturesandtheirimmediateanddefinitemanagement. • Identifyredflagsymptomsrequiringurgentreferral(proptosisand suddenvisionchanges,highfeverwithsinusitis,massiveepistaxis). • Observeandassistinsurgeryofnasalpolypectomy,septoplasty,and FESS. • Counselling • Explaincommonnasalprocedurestopatientsinsimplelanguage. • Takeinformedconsent. • Counselpatientsonpreventivemeasures. • MedicolegalAspectsofENTtrauma • Performmedicolegalexaminationanddocumentationofear,nose,and throatinjuries,correlatingclinicalfindingswithpossiblemechanisms andmedicolegalimplications.(SeeAnnexureIII)

Code	Skills/Task
	EYE-II

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

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

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

v. Duration of Injuries

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

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

Avoid labelling unless evidence is convincing.

Specific Maxillofacial & ENT Injuries

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

B. Tympanic Membrane Rupture

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

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

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

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

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

✓ Key Reminder;

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

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



MODULENO:31

ENDOCRINOLOGY&REPRODUCTION-II

Code	Skills/Task
CFRC 4- EnR2- 001	Obtain and document clinical history and physical findings in patients with thyroid disorders, Diabetes Mellitus, Cushing's syndrome, menstrual disorders, and infertility.
CFRC 4- EnR2- 002	Thyroid examination Examine the thyroid gland for size, shape, nodules, tenderness, and movement with deglutition. Assess for signs of hypothyroidism and hyperthyroidism through pulse rate, tremor, reflexes, and eye signs. Interpret thyroid function tests (T ₃ , T ₄ , TSH).
CFRC 4- EnR2- 003	Adrenal Function Assessment Perform examination for adrenal disorders, including assessment of blood pressure (lying and standing), skin pigmentation, and muscle power.
CFRC 4- EnR2- 004	Diabetic Foot Examination Perform foot examination in a diabetic patient to assess for neuropathy, ulcers, and vascular insufficiency.
CFRC 4- EnR2- 005	Bedside Glucose Monitoring Measure and interpret capillary blood glucose levels using a glucometer during patient assessment. Demonstrate urine testing for glucose and ketone bodies using dipsticks.
CFRC 4- EnR2- 006	Diagnostic Tests for Diabetes Mellitus Interpret laboratory results of fasting, postprandial, random blood glucose, HbA1c, and oral glucose tolerance tests in relation to normal reference ranges and diagnostic criteria for diabetes mellitus.
CFRC 4- EnR2- 007	Insulin Administration Demonstrate proper insulin administration technique using a syringe or insulin pen. Counsel the patient on insulin handling, injection sites, foot care, and dietary compliance.
CFRC 4- EnR2- 008	Assessment of Calcium Imbalance Perform bedside assessment for calcium imbalance (Chvostek's and Trousseau's signs).

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

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

MODULE NO:33	
EYE&ENT-III	
Code	THROAT
	Skills/Task

CFRC 4- Throat-001	• Historytaking • Takeafocusedhistoryfrompatientspresentingwithpharyngealand laryngeal complaints • Clinicalexamination/managementskills • Identifytrismususingclinicalmethods. • Inspecttheoralcavity,pharynx,andlaryngealarea. • Performindirectlaryngoscopy. • Palpateneck. • ExaminecranialnervesIX,X,XI,XII. • Performinspection,palpation,andauscultationofnecklumps. • Palpateforlaryngealcrepitusandtrachealdeviation. • Observeandnarratethesteptofendotrachealintubation. • Observeandassistintracheostomy,cricothyroidotomy. • Observeandassistintonsillelectomy. • Identifywarningsymptomsandsignsofairwayobstructionrequiring urgent intervention. • IdentifyanddescribetheuseofcommonENTinstrumentsusedin both outpatient and operative settings. • Demonstrate back blow technique for foreign body airway obstructionon a mannequin. • Protocols for Collection, Transport and Storage of Nasopharyngeal/Throat/EarswabforCulture&Sensitivity.(SeeAnnexureIV)
Code	EYE-III
	Skills/Task
CFRC 4-	• Eyexaminationskillsandprocedures • Performasquintexamination.(Hirschbergttest,cover-uncovertest.

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

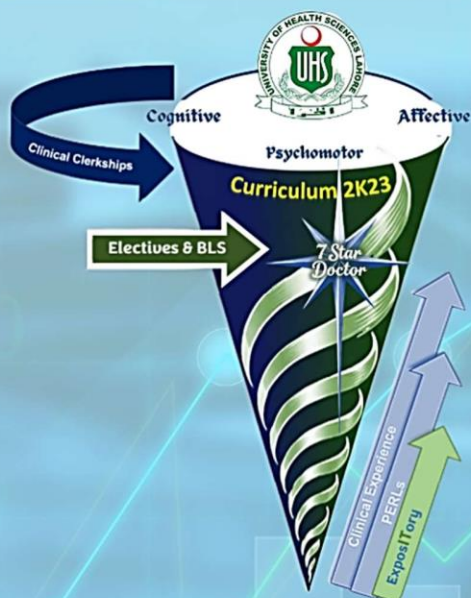
1. Explain the procedure to the patient.
2. Have the patient blow their nose if there's excess mucus.
3. Position the patient with their head tilted slightly back.



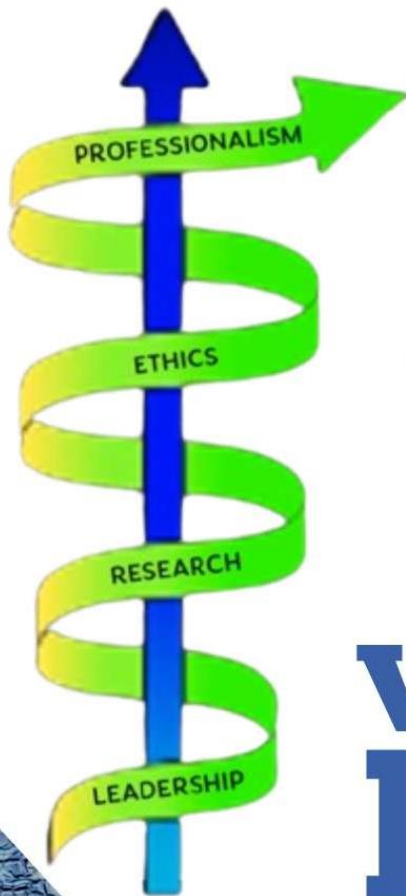
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MBBS Year-04

YEAR-4



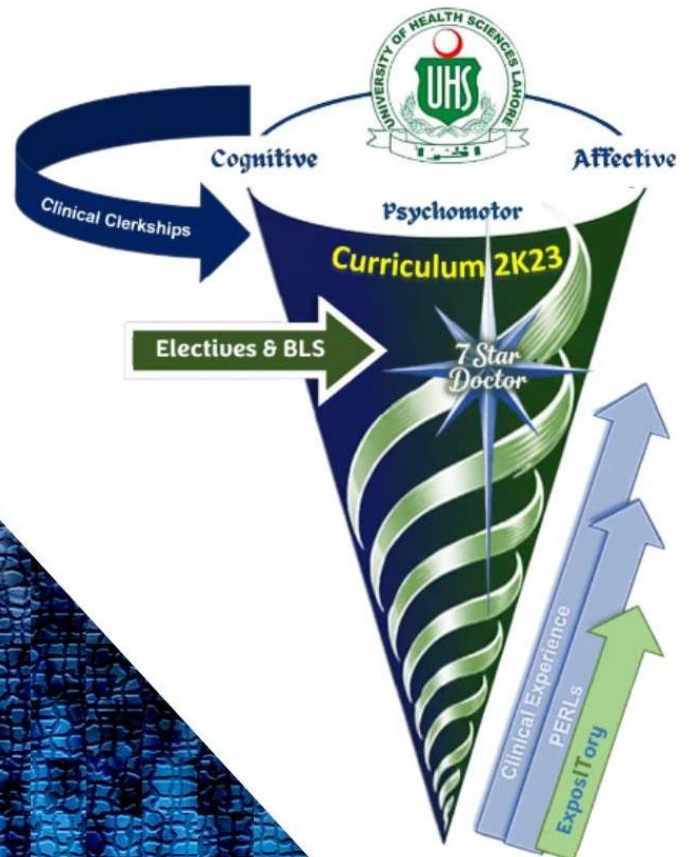
PERLS



Modular Integrated Curriculum 2K23

MBBS Year-4

Volume-4 PERLs-4



	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
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	Case based discussion

		practice	
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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.	Casebaseddiscussion
		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
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RESEARCH			
Block	Topic	Learning Objectives	Teaching mode/ Task
XI	Research manuscript writing	Write a complete scientific article (Introduction, Methods, Results, Discussion).	Groupwork (dedicated time slot in timetable to complete the task in current block)
XII	Proofreading and submission of research article	Prepare tables, graphs, and reference lists using referencing software.	Group work under supervision of supervisor
		Revise and proofread drafts with peer and mentor feedback.	
		Select a relevant journal. Submit research to a journal or conference. Prepare and deliver an oral/poster presentation at institutional/research day.	

LEADERSHIP

Block	Topic	LearningObjectives	Teachingmode/ Task
XI	Digital Transformation in Healthcare	Explore the impact of digital transformation in healthcare, including the roles of telemedicine, digitalhealth tools,AI, and the importanceofdataprivacyinmodern healthcaredelivery.	Studentpresentations
	Public Trust andLeadership 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 healthcareprofessionalsinmaintainingthis trust.	
		Explore the role of healthcare professionals asleadersinsociety,focusingonhow buildingpublictrustisessentialforeffective	Studentpresentations

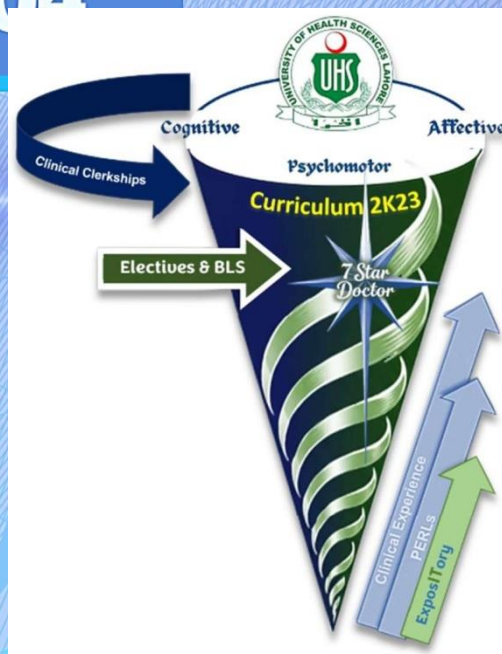
		leadership and the responsibilities of healthcare professionals in maintaining this trust.	
		Analyze a case where public trust in healthcare leadership was challenged, identifying key leadership strategies that could rebuild trust and strengthen the healthcare professional's role in society, identifying key leadership strategies that couldrebuildtrustandstrengthenethe healthcareprofessional'sroleinsociety.	Casebaseddiscussion/ student presentations
XII	Role Modelling/ Mentoring SessionVIII	Participate in a mentoring session where they will discuss their strengths and weaknesses with their mentor, receive feedback, and collaboratively create an actionplanforpersonalandprofessional development	Mentoringsession

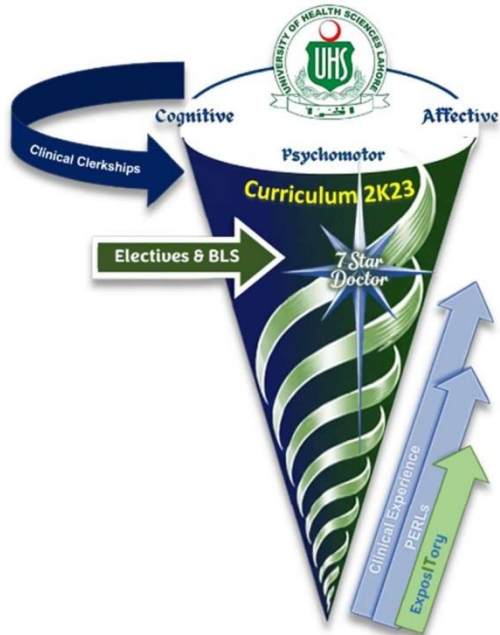
Volume-04



STUDENT PORTFOLIO

YEAR-04





MODULE:NEUROSCIENCES-II

DATEFROM: _____

DATE TO: _____

CHECKEDBY: _____

RollNo:	
AssignmentTopic:	
Date:	
Submit a case study or presentation on using a digital health tool, telemedicine, or AI in healthcare, focusing on its benefits and challenges.	

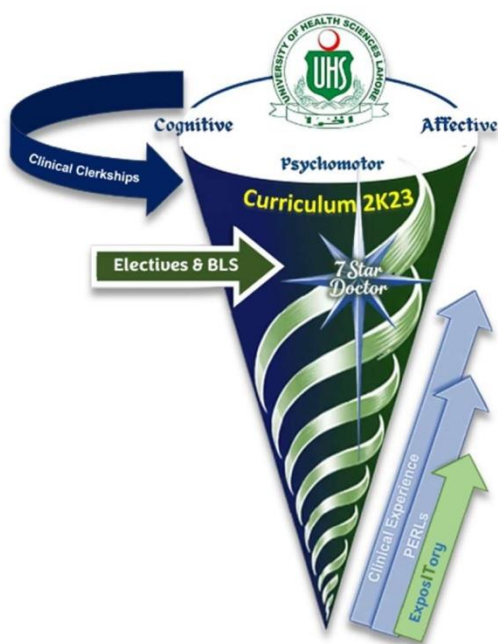
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RollNo:	
AssignmentTopic:	
Date:	
ProgressreportonDataCollectionforstudy	

FacilitatorRemarks:	



Curriculum2K23Year-04



MODULE:PSYCHIATRY&BEHAVIORALSCIENCES

DATEFROM: _____

DATETO: _____

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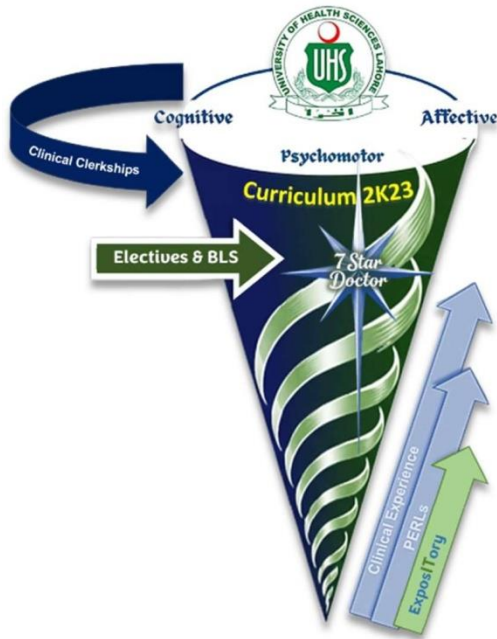
RollNo:

AssignmentTopic:	
Date:	
Submitareflectiononself-assessmentvalidatedtoolsforstress: PerceivedStressScale(PSS),COPEInventory,andProfessional QualityofLifeScale(ProQOL)	
FacilitatorRemarks:	
RollNo:	
AssignmentTopic:	

Date:	
Evidence: Drafted Informed consent sheet for your research.	
Facilitator Remarks:	



Curriculum2K23Year-04



MODULE:RENAL-II

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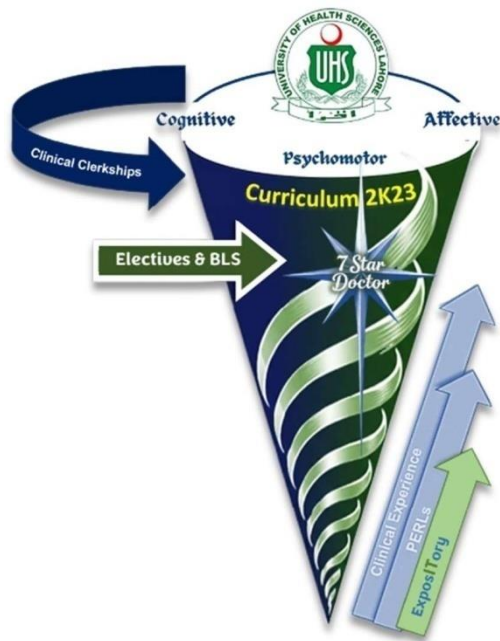
RollNo:	
AssignmentTopic:	
Date:	
Submit patient information sheet regarding renal dialysis, ensuring all risks, benefits, and alternatives and informed consent are recovered.	
FacilitatorRemarks:	
RollNo:	

AssignmentTopic:	
Date:	
Submitareflectiveessaydiscussingacasewherepatientautonomywaschallengedinthe contextofdialysisorrenaltransplantation.	
FacilitatorRemarks:	
RollNo:	
AssignmentTopic:	

Date:	
Submit a video recording of your research presentation along with a reflective essay. In the essay, discuss your approach to organizing the presentation, how you engaged your audience, and what you learned from the feedback received	
Facilitator Remarks:	



Curriculum2K23Year-04



MODULE:ENT&EYE-II

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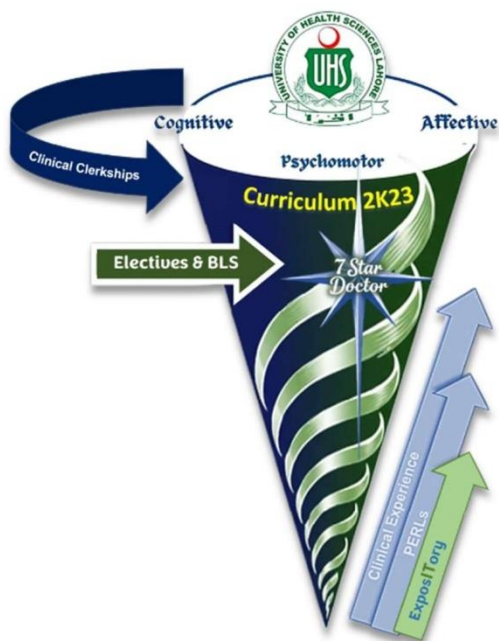
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RollNo:	
AssignmentTopic:	
Date:	
Submit a reflective essay or presentation discussing a case where public trust in healthcare was tested. Outline strategies healthcare leaders could use to restore and maintain trust, and the role of ethical leadership in society	
FacilitatorRemarks:	



Curriculum2K23Year-04



MODULE:ENDOCRINOLOGY&REPRODUCTION-II

DATEFROM: _____

DATETO: _____

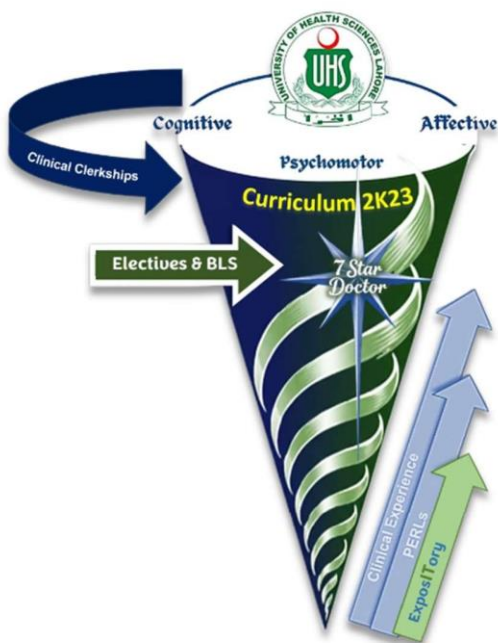
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RollNo: _____

AssignmentTopic:	
Date:	
Submitareflectivecaseanalysisdiscussingtheethicalissuessurroundingacaseofinfertility treatmentorabortion.Focusonhowhealthcareproviderscannavigatethesechallengeswhile respectingpatientautonomy,legalconsiderations,andculturalsensitivities	
FacilitatorRemarks:	



Curriculum2K23Year-04



MODULE:DERMATOLOGY

DATEFROM: _____

DATE TO: _____

CHECKEDBY: _____

RollNo:	
AssignmentTopic:	
Date:	

Submit a reflective analysis of a case involving autonomy in cosmetic surgery or consent in an elective procedure. Discuss how ethical principles were applied or challenged, the impact on patient care, and strategies for improving the informed consent process.

Facilitator Remarks:

Roll No:

Assignment Topic:

Date:

Submit a summary of your mentoring session, including feedback, areas identified for improvement, and the action plan you developed with your mentor to enhance your professional growth.

**Facilitator
Remarks:**

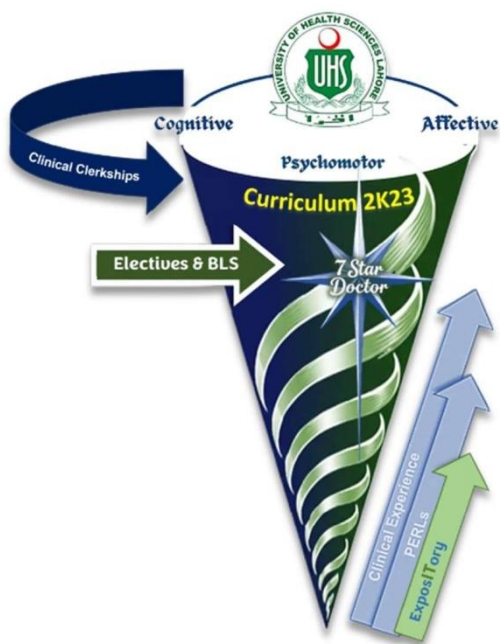
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Assignment Topic:

Date:	
As a team, create a simple poster or video presentation on how you managed team dynamics to achieve project goals. Focus on key takeaways and provide basic recommendations for effective team leadership in healthcare settings.	
Facilitator Remarks:	



Curriculum2K23Year-04



MODULE:EYE&ENT-III

DATEFROM: _____

DATETO: _____

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RollNo: _____

FacilitatorRemarks:	

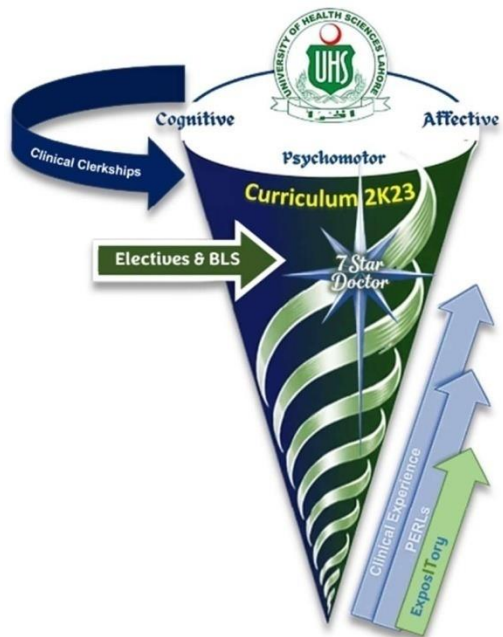
RollNo:	
AssignmentTopic:	
Date:	
EvidenceofObtainedEthicalApprovalAttached	

FacilitatorRemarks:	

RollNo:	
AssignmentTopic:	
Date:	
EvidenceofObtainedEthicalApprovalAttachedSubmitasummaryofyourmentoringsession, includingfeedback,areasidentifiedforimprovement,andtheactionplanyoudevelopedwith your mentor to enhance your professional growth.	

FacilitatorRemarks:	





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

DATE FROM: _____

DATE TO: _____

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

FacilitatorRemarks:	

RollNo:	
AssignmentTopic:	ShortCommunicationorLettertotheEditor
Date:	
Includeacompletedshortcommunicationpieceoralettertotheeditoraddressingacurrent medicalorcommunityissue.Demonstratetheprocessfromideagenerationtofinalsubmission.	

FacilitatorRemarks:	

RollNo:	
AssignmentTopic:	PatientEducationMaterial
Date:	
Attach a colored scanned copy of patient education brochures or leaflets created with digital tools like Canva or Microsoft Publisher. Ensure these materials are clear, informative, and patient- friendly.	

FacilitatorRemarks:	

RollNo:	
AssignmentTopic:	LettertoEditorGroupProject
Date:	
Workcollaborativelyonagroupprojecttowriteandsubmitalettertotheeditor.Useonline tools(e.g.,GoogleDocs)toshowcollaborativewriting.	



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MBBS Year-04**

A stylized, 3D purple and blue letter 'F' with a small sphere at the top left, positioned behind the word 'EXPOS'.

EXPOS

ORY

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	Expository Writing Focus: - To write full-length research papers and case studies. - To prepare abstracts and manuscripts for submission to journals or conferences. - To create patient education materials.	PERLS, Pharmacology, Community Medicine, Pathology, Forensic	i. Writing and formatting full-length research papers ii. Preparing abstracts and manuscripts iii. Statistical analysis (SPSS, R) - Introduction to LaTeX for journal formatting iv. Design patient education materials (Canva)
	IT Integration: IT Skills: To use advanced research tools (PubMed, EndNote), medical data analysis (SPSS, R), and digital publishing (LaTeX for formatting research articles). Writing Application:		



ELECTIVES

Curriculum
2K23



**ELECTIVES
PROGRAM**

- ContactNumber: _____
- EmailAddress: _____

SectionB:ElectiveDetails

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

SectionC:StudentStatementofPurpose

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

SectionD:RequiredAttachments

- CV ☐
- Academic Transcript ☐
- Motivation Letter ☐
- Health Clearance Certificate ☐
- Consent Form (Parent/Guardian) ☐
- Insurance Document (for overseas electives) ☐

SectionE:LearningAgreement

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

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

Signatures:

- Student: _____ Date: _____

- ParentCollegeFocalPerson: _____ Date: _____
- HostInstitutionSupervisor: _____ Date: _____
- Dean/Principal(ParentCollege): _____ Date: _____
- UHS Approval: _____ Date: _____

Annexure II

ElectiveLogbookTemplate

UniversityofHealthSciences,Lahore Elective Logbook & Portfolio

(Tobemaintainedbythestudentduringelectiveandsubmittedtoparentcollegeatcompletion.)

StudentInformation

- Name: _____
 - RollNumber: _____
 - Parent College: _____
 - HostInstitution: _____
 - ElectiveType: Clinical ☐ Non-Clinical ☐ Hybrid ☐
 - ElectiveDuration: From _____ to _____
-

SectionA:WeeklyActivityRecord

WeekDatesActivitiesUndertakenSkillsObserved/PracticedSupervisor'sFeedback&Signature

1
2
3
4

SectionB:DailyReflectionNotes

(Studentstowriteshortreflectivenoteseachdayfocusingonwhattheylearned,challengesfaced,andhowthe 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(advanceddissectiontechniques,radiologicalanatomy,clinicalcorrelations)
- Physiology(experimentalphysiology,exercisephysiology,neurophysiology)
- Biochemistry(clinicalbiochemistry,molecularbiology,laboratorymedicine)
- Pharmacology(drugtrials,pharmacogenomics,rationalprescribing)
- Pathology(histopathologytechniques,hematology,cytogenetics)
- ForensicMedicine&Toxicology(forensicasestudies,toxicologylabs,medicolegaethics)

2. Research-OrientedElectives

- ClinicalResearchMethodology
- EpidemiologyandBiostatistics
- Evidence-BasedMedicine(systematicreviews,meta-analysis)
- TranslationalMedicine(bench-to-bedsideresearch)
- LaboratoryResearchinGenetics,Immunology,orMicrobiology

3. Public&CommunityHealth

- CommunityMedicineandPublicHealthProjects
- HealthPromotion&DiseasePreventionPrograms
- MaternalandChildHealthInterventions
- Non-communicableDiseases(NCDs)preventionstrategies
- RuralorUnderservedCommunityHealthPrograms
- NGO/CommunityOrganizationFieldwork

4. MedicalEducation&Leadership

- CurriculumDevelopment&InstructionalDesign
- StudentMentorship&Peer-AssistedLearning
- Assessment&EvaluationinMedicalEducation
- EducationalTechnologyinMedicine(simulation,e-learning)
- LeadershipandManagementinHealthcare

5. HealthSystems,Policy&Management

- HealthPolicyandSystemsResearch
- HospitalAdministrationandQualityAssurance
- HealthcareFinancingandInsuranceModels
- GlobalHealthPolicy&ComparativeHealthSystems
- HealthInformaticsandDigitalHealth

6. Ethics,Humanities&ProfessionalDevelopment



SKILL ACQUISITION WORKSHOPS



3.	CardiacFirstResponse	3 rd Year/ 4 th Year	1day	Eligibility requirement for appearing in the Medicine Clerkship examination
4.	Traumafirstresponders	3 rd Year/ 4 th Year	1day	Eligibility requirement for appearing in the Surgical Clerkship examination
5.	Emergency Neonatal Resuscitation	3 rd Year/ 4 th Year	1day	Eligibility requirement for appearing in the Pediatrics Clerkship examination
6.	Emergency Obstetrics Resuscitation	3 rd Year/ 4 th Year	1day	Eligibility requirement for appearing in the Gynecology / Obstetrics Clerkship Examination