

STUDENT'S STUDY GUIDE
NEUROSCIENCE-II MODULE
FOURTH PROFESSIONAL MBBS



TABLE OF CONTENTS

Sr. No	Contents
1.	DISCLAIMER
2.	CURRICULUM FRAMEWORK
3.	MODEL OVERVIEW
4.	WHAT IS STUDY GUIDE
5.	LEARNING METHODOLOGIES
6.	INTRODUCTION
7.	LEARNING OBJECTIVES
8.	THEMES
9.	SPECIFIC LEARNING OBJECTIVES
10.	TEACHING HOURS ALLOCATION
11.	EXAMINATION AND METHODS OF ASSESSMENT
12.	GRADING POLICY
13.	ASSESSMENT BLUEPRINT
14.	RECOMMENDED BOOKS

1. DISCLAIMER

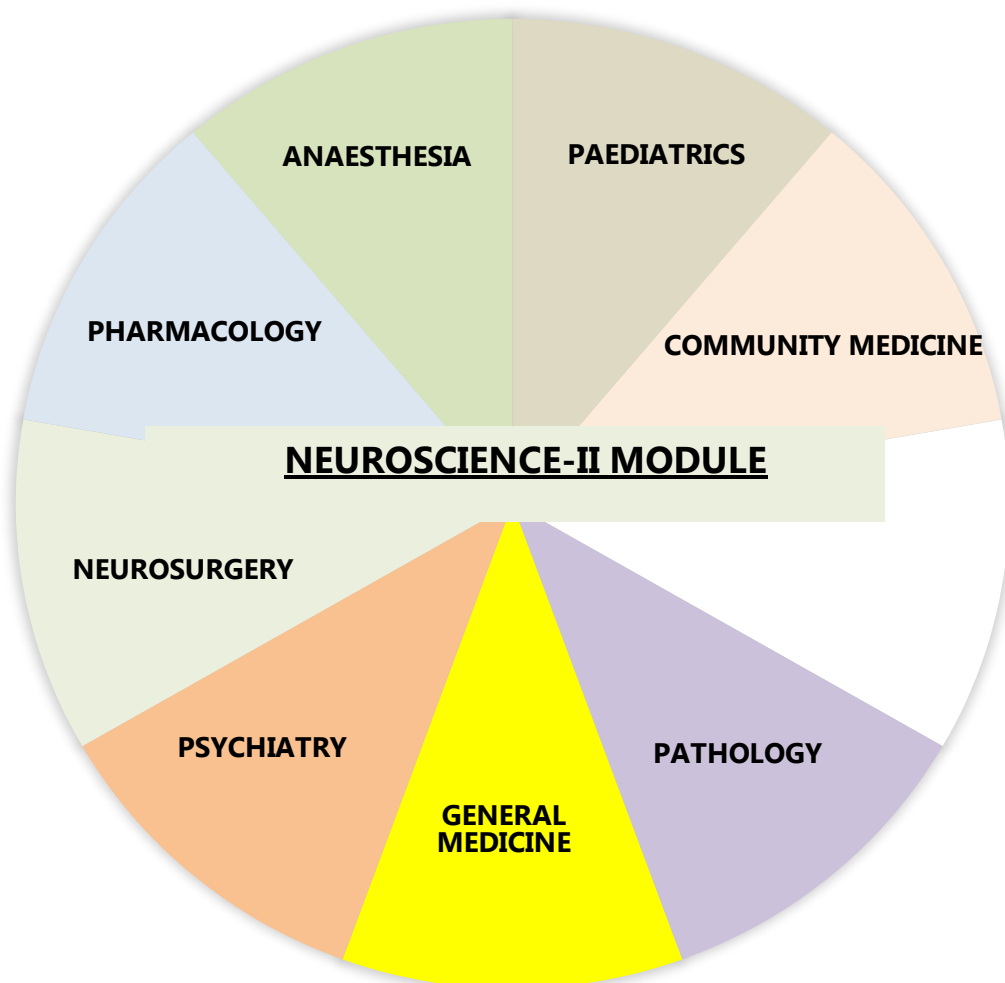
- Developing a study guide is a dynamic process and undergoes iteration according to the needs and priorities.
- This study guide is subjected to the change and modification over the whole academic year.
- However, students are advised to use it as a guide for respective modules.
- The time tables are for guiding purpose. It is to advise that final timetables are always displayed over the notice boards of each lecture hall.
- Students are encouraged to provide feedback via coordinator

2. CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Eye, ENT, Endocrine and Reproduction-III, Git and Hepatobiliary-III, Neuroscience-II and Renal-II modules which link basic science knowledge to clinical problems.

INTEGRATING DISCIPLINES OF NEUROSCIENCE-II MODULE



3. MODULE OVERVIEW

NEUROSCIENCE-II MODULE DETAILS

Course	MBBS
Year	Fourth professional
Duration	8 weeks
Learning Outcomes	The competent Medical Practitioner
Competencies covered	To develop medical professionals who are well - versed, adept, and have the right mindset.
Module Assessment	End module formative assessment
Teaching Methods	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
Assessment Methods	MCQs, SEQs, OSPE, VIVA

NEUROSCIENCE-II MODULE COMMITTEE

Sr. No	Names	Department	Designation
MODULE COORDINATOR			
1.	Prof: Dr. Allah Bachayo Rajar	Community Medicine	Professor
COMMITTEE MEMBERS			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

4. WHAT IS STUDY GUIDE

It is an aid to Inform students how student learning program of the module has been organized, to help students organize and manage their studies throughout the module and guide students on assessment methods, rules and regulations.

The study guide:

- Communicates information on organization and management of the module.
- This will help the student to contact the right person in case of any difficulty.
- Defines the objectives which are expected to be achieved at the end of the module.
- Identifies the learning strategies such as lectures, small group teachings.

Module objectives.

- Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- Highlights information on the contribution of continuous on the student's overall performance.
- Includes information on the assessment methods that will be held to determine every student's performance.

Achievement of objectives.

- Focuses on information pertaining to examination policy, rules and regulations.

5. LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations
- Skills session
- Practicals
- Self-Directed Study

• INTERACTIVE LECTURES:

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

• SMALL GROUP DISCUSSIONS (SGDS):

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

• CASE-BASED LEARNING (CBL):

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

• CLINICAL EXPERIENCES:

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to pathology, pharmacology and community medicine have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

6. INTRODUCTION

Diseases of the central and peripheral nervous systems are referred to as neurological disorders. Brain stem, spinal cord, cranial nerves, peripheral nerves, nerve roots, autonomic nervous system, neuromuscular junction, and muscles are the last areas covered by the jurisdiction. The jurisdiction begins in the cerebral cortex.

Students will gain a broad grasp of the etiology of neurological and mental illnesses from this subject. Worldwide, neurological disorders are the primary cause of disability.

Approximately 15% of the world's population, or one billion individuals, are thought to suffer from a neurological illness or condition.

The WHO estimates that over 6 million individuals have strokes annually, with low- and middle-income nations accounting for more than 80% of these deaths.

Psychiatric diseases represent a significant human health burden. In Pakistan, neuropsychiatric illnesses rank among the top 12 causes of mortality and disability, according to 2012 WHO data.

Students will get a thorough grasp of the biological, pathological, psychological, and social elements underlying common diseases seen by neurologists and psychiatrists in this module. They will also learn about the etiology of these disorders.

6.1 RATIONALE

The nervous system is the body's most intricate mechanism. The nervous system is either directly or indirectly engaged in the pathophysiology of a great deal of disorders, or it may be implicated in systemic illnesses. Common diseases of the nervous system include infections such as meningitis and encephalitis, congenital and traumatic disorders, movement disorders, demyelinating diseases, epilepsy, and cerebrovascular accidents. High morbidity and death are avoided by prompt diagnosis and treatment. The fundamental cycle's Neurosciences 1 module has already given students a solid foundation in the pathophysiology, neuropharmacology, anatomy, and physiology of CNS disorders. The student will study the clinical presentation, diagnosis, and treatment of various illnesses in this second clinical spiral.

6.2 IBN E SINA UNIVERSITY (ISU) VISION:

To become a world-leading organization in rural health and social care research, training, recruitment and best evidence-based practice.

6.3 IBN E SINA UNIVERSITY (ISU) MISSION:

Our Mission is to inspire hope, and contribute to health and well-being by providing the best care to every patient through integrated clinical practice, education and research. To provide a focal point for the development and collation of high-quality research pertinent to rural health and wellbeing. To improve the training, recruitment and retention of a professional workforce within rural communities. To be recognized as an exemplar in rural health and wellbeing on the international stage. To establish a network of individuals and groups that support research, innovation and development in rural health and social care.

7. LEARNING OBJECTIVES

7.1 General learning Objectives:

By the end of this module, the students should be able to:

1. Recall functional neuro anatomy of brain and spinal cord
2. Revise embryology and histology of neuron, nerve and neuroglia
3. Enlist the investigation for diagnosing neurological disorders
4. Discuss the assessment and management of raised ICP, cerebral edema and brain herniation
5. Differentiate between anxiety and depression, manic disorders and discuss their management
6. Compare primary and secondary headache
7. Formulate a table to identify /classify drugs used for general, regional and local anesthesia
8. Describe pathophysiology, clinical classification and management of seizure disorders
9. Know the approach for assessment and management of adult as well as paed stroke, dementia and Parkinson disease
10. Classify CNS infection and discuss the management
11. Explain pathology of degenerative disorders of brain
12. Recognize CP child and evaluation of mental retardation
13. Classify brain tumors and evaluate management plan for it

7.2 Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Describe anxiety disorders and their management.
2. Explain the concepts of Mood disorders and their management.
3. Explain psychotic disorders and their pharmacological management.
4. Describe the pathophysiology and management of Dementias.
5. Elaborate the pathophysiology, clinical features, management, and prevention of cerebrovascular diseases.
6. Describe the types and protocols of anesthesia and explain the drugs used as anesthetics.
7. Explain the pathology and clinical features of cerebellar diseases.
8. Elaborate the clinical features and management of Parkinson`s disease.
9. Explain the clinical features and management of Motor neuron disease and Friedrich`s ataxia.
10. Describe the pathology and management of head injury.

11. Describe the pathogenesis, clinical features, and management of common CNS infections.
12. Classify brain, spinal cord, and peripheral nerves tumors, and describe their clinical features and management.
13. Explain the pathophysiology, clinical features, investigations and management of Multiple sclerosis, transverse myelitis, and Gullain Barre Syndrome.
14. Classify peripheral neuropathies and elaborate their etiologies and clinical presentations.

7.3 Skills / Psychomotor Domain:

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

1. Observation and Assistance
2. Performing the skill under supervision
3. Performing the skill independently
4. Link the structure and functional abnormalities of the nervous system based on the clinical history and signs and symptoms
5. Acquire clinical skills to perform neurological examination of patient using the correct technique. (motor system, sensory system, cranial nerves, higher brain function, hearing, balance and vision)
6. Obtain a comprehensive history of patient with neurological disorders.
7. Demonstrate appropriate technique for performing nervous system and cranial nerves examination.

7.4 Attitude / Affective Domain:

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

1. Respect oneself and one's peers, both when providing and receiving comments.
2. To show patients compassion and understanding.
3. Develop your ability to communicate while keeping a sense of duty to your patients.
4. Showcase appropriate laboratory procedures.
5. Relate to patient and careers vulnerability
6. Demonstrate ethical self-management
7. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
8. Display compassion with patient and colleagues
9. Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease

7.5 Outcomes of Neuroscience-II Module

1. Knowledgeable

2. Skillful
3. Community Health Promoter
4. Problem-solver
5. Professional
6. Researcher
7. Leader and Role Model

8. THEMES FOR NEUROSCIENCE-II MODULE

SNO	Themes	Duration
1	Disturbed sleep	1 week
2	Disturbed mood & behavior	1 week
3	Right-sided weakness and inability to speak	1 week
4	Loss of consciousness and Fits	1 week
5	Tremors	1 week
6	Headache	1 week
7	Paraplegia	1 week
8	Numbness and tingling	1 week

9. SPECIFIC LEARNING OBJECTIVES THEME WISE

THEME I: DISTURBED SLEEP					
S#	Subjects	Topics	Learning objectives	Contents	Hours
1.	Psychiatry	Sleep disorders	Describe the types of sleep disorders	Sleep disorder and its management	1 Hour
			Explain the pharmacological and non-pharmacological management of sleep disorders		
			Describe the ways of improving healthy sleep		
		Non-organic insomnia	Define non-organic insomnia	Non-organic insomnia and its treatment	
			Explain the management of non-organic insomnia		
		Sleep wake cycle disorders	Describe the concept of sleep-wake cycle disorder	Sleep Walk and its treatment	
Describe the pharmacological and non-pharmacological management of sleep-wake cycle disorder					
2.	Pharmacology	Introduction to the Pharmacology of CNS	Describe basic terms like neurotransmitters, neuromodulator/neurotropic factors, withdrawal symptoms (abstinence syndrome), cross-tolerance, reverse tolerance (sensitization) and cross-dependence	Common terminologies BBB Neurotransmitters Ion channels	2 Hour

		Describe the blood-brain barrier and its clinical significance	and its receptors	
		Enlist the principal neurotransmitters and their receptors in the CNS		
		Describe voltage-gated, ligand-gated (ionotropic), ion channels and metabotropic receptors on the neuronal membrane		

		Classify the drugs acting on the CNS		2 Hour
	Sedative-hypnotics (Minor tranquilizers)	Classify broadly the Sedative-Hypnotics	Minor tranquilizers	
	Benzodiazepines	Classify Benzodiazepines	Benzodiazepines and its pharmacological characteristics	
		Describe the pharmacokinetics of Benzodiazepines		
		Describe the mechanism of action of Benzodiazepines		
		Describe the pharmacological effects of Benzodiazepines		
		Describe the clinical uses of Benzodiazepines		
	Describe the adverse effects of Benzodiazepines			

			Describe the tolerance and dependence on Benzodiazepins		
--	--	--	---	--	--

			Describe the drug interactions of Benzodiazepines		
			Name the antidote (competitive antagonist) to Benzodiazepines		
		Barbiturates	Classify barbiturates		
			Describe the mechanism of action and clinical uses of barbiturates		
			Describe the difference regarding the mechanism of action of Barbiturates in comparison to Benzodiazepines		
		Buspirone	Describe the mechanism of action and clinical use of Buspirone		
			Describe the merits and demerits of Buspirone in comparison to Benzodiazepines		

		Ramelteon	Describe the mechanism of action and clinical use of Ramelteon		2 Hour
		CNS stimulants	Classify CNS stimulants		
		Respiratory analeptics (Doxapram, Nikethamide)	Describe the mechanism of action, clinical uses and adverse effects of Respiratory analeptics	Respiratory Aneleptics	
		Methyl xanthine/Theophylline, Caffeine, Theobromine)	Describe the mechanism of action, clinical uses and adverse effects of Methyl xanthine	Methylxanthine	
		Sibutramine	Describe the mechanism of action and clinical use of Sibutramine	Sibutramine	
3.	Community medicine/epidemiology	Epidemiology	Define epidemiology	Definition	1 Hour
			Explain the basic concepts of epidemiology	Concept	
		Study design	Classify and elaborate study designs	Study Design	
		Screening	Explain the screening in epidemiology	Screening	
		Measures of mortality and morbidity	Explain the measures of morbidity and mortality	Measurement of mortality and morbidity	

THEME 2: DISTURBED MOOD & BEHAVIOUR

S#	Subjects	Topics	Learning objectives	Contents	Hours
1.	Psychiatry (mood and anxiety disorders)	Depressive disorders	Classify depressive disorders	Classification Aetiology C/F Management	2 Hours
			Describe the aetiology, clinical features and management protocols of different depressive disorders		
		Bipolar Affective Disorder	Describe the clinical features and management protocols of Bipolar affective disorders	Clinical presentation Management	
		Suicide	Describe the preventive measures of suicide	Preventive measures	
		Anxiety Disorders	Classify anxiety disorders	Classification Differences Management	
Differentiate between medical and psychiatric causes of anxiety					
			Differentiate between anxiety and phobia		
			Describe the pharmacological and non- pharmacological management of different anxiety disorders including relaxation techniques and breathing exercises		

		Dissociative disorders	<p>Explain the different behavioral and neurological presentations of dissociative disorders</p> <p>Describe the pharmacological and non-pharmacological management of dissociative disorders</p>	Types Management	
		Stress related disorders	<p>Classify stress related disorders</p> <p>Explain the concept of stress in stress related disorders</p>	Classification and management	
			Explain the pharmacological and non-pharmacological management of stress related disorders		
		Somatoform disorders	<p>Classify somatoform disorders</p> <p>Describe the concept of medically unexplained symptoms</p> <p>Counsel a patient with medically unexplained symptoms</p>	Classification Counselling of patient	

		Atypical depression and seasonal affective disorder	Describe the clinical presentation of atypical depression Recognize the symptoms of atypical depression Describe the management of atypical depression and seasonal affective disorders	C/F Management	
2.	Psychiatry (Psychotic illnesses)	Personality disorders	Classify personality disorders	Classification C/F	1 Hour
			Describe the clinical features, diagnostic criteria and management of personality disorder	Diagnosis Management	
		Psychotic disorders	Differentiate between organic and non-organic psychosis Explain the concept of psychosis Classify psychotic disorders	Types concept Classifications	
		Schizophrenias	Describe the clinical features, diagnostic criteria and management of Schizophrenias	C/F Diagnosis Management Psychotherapy	

			<p>Explain the role of psychotherapy and Electroconvulsive therapy in Schizophrenias</p> <p>Describe the rehabilitations strategies with patients of Schizophrenias</p>	<p>Electroconvulsive Rehabilitations strategies</p>	
		Delusional disorders	Describe the types and management of delusional disorders	Management and Types	
			Describe the ways of differentiating delusional disorders from Schizophrenias		
		Substance abuse disorder	Describe the concept of drug dependence	General concept	
			Classify of drug abuse	Classification	
			Describe the principles of management of substance abuse	Management Harm reduction	
			Explain the concept of harm reduction		
3.	General Medicine	Alzheimer`s disease and Dementias	<p>Explain the pathophysiology, clinical features and management of Alzheimer`s disease</p> <p>Describe the reversible and irreversible causes of Dementia</p>	<p>Pathophysiology C/F Management Dementia and its types</p>	1 Hour

4.	Pharmacology	Depression	Describe the Monoamine hypothesis of depression	Monoamine hypothesis	2 Hours
		Antidepressants	Classify antidepressants	Classification	
		SSRIs (Selective Serotonin Reuptake Inhibitors)	Enlist SSRIs	Types MOA Clinical uses	
			Enlist the most selective SSRIs		
			Describe the pharmacokinetics, mechanism of action, clinical uses, adverse effects and drug interactions of SSRIs	Adverse Effects	1 hour
			Classify antidepressants		
		TCAs (Tricyclic Antidepressants)	Enlist TCAs	Types MOA Clinical uses Adverse Effects	
			Describe the mechanism of action, clinical uses, adverse effects and drug interactions of TCAs		
			Enlist TCAs		
		MAOIs (Monoamine Oxidase Inhibitors)	Enlist MAOIs	Monoamine Oxidase Inhibitors	
Describe the pharmacokinetics,					

			<p>mechanism of action, clinical use, adverse effects and drug interactions of MAOIs</p> <p>Describe Serotonin syndrome</p>		
			Describe Hypertensive Cheese reaction		
			Describe St John's Wort		
			Describe the procedure of switching-over from one category of antidepressants to another one		
			Describe "Augmentation" of antidepressant therapy		
			Describe Electroconvulsive Therapy (ECT) for depression		
		Psychoses (Schizophrenia and others)	Describe the Dopamine hypothesis of Schizophrenia	Dopamine hypothesis	
			Classify Antipsychotics		
		Antipsychotics (Anti-schizophrenic drugs)	Describe the advantages of Atypical antipsychotics over the Typical (Classical/Traditional/Old) agents	Antipsychotic drugs	1 Hour
			Describe the mechanism of action of Antipsychotics		

			Describe the pharmacological effects of Antipsychotics		
			Describe the clinical uses of Antipsychotics		
			Describe the drug Interactions of Antipsychotics		
			Describe the adverse effects of Antipsychotics		
			Explain the drug treatment of extrapyramidal syndrome		
		Bipolar affective disorder (Manic Depressive illness)	Describe the concept of "mood-stabilization" in Bipolar affective disorder (Manic Depressive illness)	Mood stabilization	2 Hours
		Mood-stabilizing drugs	Enlist Mood-stabilizing drugs	Types	
		Lithium carbonate	Describe the pharmacokinetics, mechanism of action, clinical uses, adverse effects and drug interactions of Lithium carbonate	Pharmacokinetics MOA Clinical uses Averse Effects	
		Alcohols	Describe alcoholism	Alcoholism and pharmacological characteristics	
			Describe the pharmacokinetics of Ethanol		

			Describe the mechanism of action of Ethanol		
			Describe the pharmacological effects of Ethanol		
			Describe the clinical uses of Ethanol		
			Describe the adverse effects of Ethanol		
			Describe Disulfiram-like reaction with example of drugs causing it		
			Describe the management of Ethanol intoxication		
			Describe the management of Ethanol withdrawal symptoms		
			Describe the treatment of alcoholism		
			Describe briefly Methanol poisoning		
		Opioids (Morphine, Diamorphine, Codeine, Pethidine, Methadone,	Differentiate between Opioids and Opiates	Types MOA	2 Hour
			Describe the term "narcotic"	Adverse Effects Pharmacological	
		Pentazocine,	Describe the source of Opium	features	

		Buprenorphine, Dextromethorpha ne)	Enlist the "brain's own Morphine" (endogenous Opioids)		
			Classify Opioids		
			Enlist Opioids with mixed agonist- antagonist properties		
			Enlist Opioids with partial agonist activity		
			Describe the pharmacokinetics, mechanism of action, pharmacological effects,clinical uses, adverse effects and drug interactions of Opioids		
			Describe the use of opioids as palliative care in terminalillness		
			Describe opioid rotation		
			Describe the treatment of Opioid over dosage		
			Describe the Opioid antagonists (antidotes)		
			Describe Opioid dependence		
			Describe the management of Opioid dependence		

			Describe the contraindications of Opioids		
			Enlist the drugs used for pain in opioid addicts		
		Tramadol	Describe the mechanism of action and clinical use of Tramadol	MOA	
		Drugs of abuse	Describe substance abuse, drug dependence, addiction and habituation	Substance abuse	2 Hour
			Describe the Dopamine hypothesis of addiction	Drug dependence	
			Enlist the drugs causing addiction	Addiction	
			Enlist the non-addictive drugs of abuse	Habituation	
			Describe "Club drugs"	Dopamine hypothesis	
				Types of drugs that causes addiction	
			Enlist the drugs having high-risk of addiction (scored 5 on the list of relative-risk of addiction)	Non-addictive drugs	
			Enlist the drugs having moderate-risk of addiction (scored 4 on the list of relative-risk of addiction)	"Club drugs"	
			Describe the drug treatment of Nicotine, Alcohol, Cannabis and Opioid abuse	Nicotine, Alcohol, Cannabis	
				Opioids	
				Drugs used in sports.	

			Describe the drug abuse in sports with examples		
5.	Community medicine	Mental health	Describe classification of mental health illnesses	classification Definition	1 Hour
			Define mental health	Global	
			Discuss global perspectives and epidemiology of mental health disorders	perspective s Epidemiolo gy Risk Factors Prevention andControl	
			Discuss risk factors leading to mental health problems		
			Discuss prevention and control of mental health disorders		
6.	MEDICAL EDUCATION	Conflict resolution	Explain the prerequisites for conflict resolution as a leader	Prerequisites Skills demonstra tion	1 Hour
			Show the ability to solve problems regarding difficult patients/attendant.		
7.	Community medicine/biostatistics	Biostatistics: Introduction	Describe the significance of biostatistics in health and epidemiology	Significance	1 Hour
		Data and variable types	Define and classify variables	Definition and Types	
		Sampling	Define sampling	Definition	
			Discuss types of sampling	Types	
		Biases in epidemiological studies	Define Bias	Definition	
			Discuss different types of biases	Types	
Discuss how bias can be prevented	Preven tion				

THEME 3: RIGHT-SIDED WEAKNESS AND INABILITY TO SPEAK

S#	Subjects	Topics	Learning objectives	Contents	Hours
1.	Pathology	Hypoxia, ischemia, and infarction	Define hypoxia, ischemia, and infarction, and describe morphology and consequences in the context of CNS involvement	Common terminologies	1 Hour
		Intracranial haemorrhage	Describe the aetiology, risk factors and morphology of intracranial haemorrhage	C/F Aetiology Risk Factors	
		Strokes syndromes	Describe the aetiology, risk factors, morphology, and clinical and radiological features of stroke		
		Subarachnoid haemorrhage (SAH)	Explain the aetiology, risk factors and clinical features of SAH		
2.	General Medicine	Stroke	Describe the risk factors of stroke	Risk Factors Types C/F, radiological findings	1 Hour
			Explain the types of strokes		
			Describe the clinical features, radiological features, and management of a patient with intracerebral bleed	Management of intracerebral bleed and infarction	

			Describe the clinical features, radiological features, and management of a patient with stroke due to an infarction		
3.	Community medicine	Non-communicable diseases: Strokes	Discuss the epidemiological determinants of stroke in community	Epidemiology	1 Hour
			Discuss the prevention and rehabilitation of strokes	Prevention Rehabilitation	
4.	Neurosurgery		Describe the neurosurgical management of stroke and Subarachnoid hemorrhage	Management	1 Hour
5.	Community medicine/biostatistics	Measures of central tendency	Classify measures of central tendency	Central tendency	1 Hour
			Calculate measures of central tendency		
			Interpret and signify the results		
			Describe the advantages and disadvantages of different measures		
		Measures of dispersion	Classify measures of dispersion	Dispersion	
			Calculate measures of dispersion		
Interpret the results of measures of dispersion					

			Explain the advantages and disadvantages of measures of dispersion			
			Explain the use of different measures in specific circumstances			
		Normal distribution	Define normal distribution	Normal distribution curve and its significance		
			Describe normal distribution			
			Calculate and graphically represent normal distribution			
			Explain its use & significance in relation to data			
			Describe percentile and interquartile range			
			Calculate and depict percentile and interquartile range			
			Explain use and significance of these in different situations			
		Confidence Interval, Confidence level, Standard error	Define confidence level and interval	Confidence interval, confidence level Standard errors	1 Hour	
			Describe confidence level and interval			
			Calculate confidence level and interval			
			Explain their use and significance in different situations			

		P value, critical region, rejection	Define P value, critical region, rejection region, α β errors	P Value and its significance	1 Hour
		region, alpha beta errors	Describe P value, critical region, rejection region, α β errors		
			Calculate P value, critical region, rejection region, α β errors		
			Describe their use and significance in different situations		

THEME 4: LOSS OF CONSCIOUSNESS AND FITS

THEME 4: LOSS OF CONSCIOUSNESS AND FITS					
S#	Subjects	Topics	Learning Objectives	Contents	Hours
1.	General Medicine	Seizures	Define seizures	Definition	1 Hour
			Differentiate between a seizure and syncope	Classification	
			Classify epilepsy	Pathophysiology C/F	
			Explain the pathophysiology, clinical features, risk factors, investigations and treatment of Tonic-Clonic epilepsy	Investigations Risk Factors Management	
			Explain the pathophysiology, clinical features, investigations and treatment of absence seizures		
			Explain the pathophysiology, clinical features, investigations and treatment of psychomotor epilepsy		
2.	Anaesthesia		Define anaesthesia	Definition	1 Hour
		Introduction to the subject	Describe different types of anaesthesia	Types	
		General anaesthesia	Describe the methods of induction of anaesthesia	Methods of induction	

		Neuroaxis block	Describe the following terms: <ul style="list-style-type: none"> • Spinal block • Epidural block • Caudal block Combined spinal /Epidural	Common terminologies	
		Regional anaesthesia	Describe the following terms: <ul style="list-style-type: none"> • Nerve block • Single shot • Continuous infusion Local infiltration		
		Preoperative evaluation and risk assessment	Explain the purpose of preoperative evaluation	Preoperative evaluation and risk assessment	
			Perform risk assessment of patient undergoing general anaesthesia		
			Describe the steps of history taking in preoperative evaluation for anaesthesia		
			Describe the plans of general and regional anaesthesia techniques		
			Describe the ASA classification for pre-operative risk assessment		

		Monitoring in anaesthesia	Describe the non-invasive and invasive techniques of patients`monitoring for the following parameters during general anaesthesia <u>Non-invasive:</u> a. Oxygenation b. Hemodynamic c. Temperature d. Electrical activity e. Neuromuscular activity f. Circulation <u>Invasive:</u>	Non-invasive and Invasive techniques	
			a. Oxygenation b. Hemodynamic c. Temperature d. Cardiac output e. Central venous pressure Circulation		
3.	Pharmacology	Anti-seizure drugs (Anti-epileptics)	Classify anti-seizure drugs Enlist the "Broad-spectrum" anti-epileptics (Valproate and Lamotrigine)	Classifications	2 Hours
		Carbamazepine	Describe the mechanism of action, clinical uses, adverse effects and drug interactions of		

			Carbamazepine	interactions	
		Phenytoin	Describe the pharmacokinetics of Phenytoin with reference to the phenomenon of zero-order kinetics		
			Describe the mechanism of action, clinical uses, adverse effects and drug interactions of Phenytoin		
		Valproate	Describe the mechanism of action, clinical uses, adverse effects and drug interactions of Valproate	Clinical uses	1 hour
		Ethosuximide	Describe the mechanism of action, clinical uses and adverse effects of Ethosuximide		
		Phenobarbitone	Describe briefly the historic role of phenobarbitone in the management of epilepsy		
		Benzodiazepines	Name the benzodiazepines used in the management of epilepsy		
		Lamotrigine,	Name the new antiepileptic drugs	Anti-epileptic	

		Topiramate and others	Describe the mechanism of action, clinical uses and adverse effects of Lamotrigine and Topiramate	drugs and its features	
			Describe the use of antiepileptics during pregnancy		
			Describe drug interaction of antiepileptics with oral contraceptive pills		2 Hours
		Status epilepticus	Describe the management of status epilepticus	Management	
		General anaesthetics	Describe the stages of general anaesthesia	General anaesthetics	
			Describe balanced anaesthesia		
		Inhaled anaesthetics (N ₂ O, Halothane, Isoflurane, Sevoflurane, Desflurane)	Describe the pharmacokinetics of Inhaled anaesthetics	Inhaled anaesthetics	
			Discuss the clinical significance of Blood: Gas partition coefficient of Inhaled anaesthetics		
			Describe the mechanism of action of Inhaled anaesthetics		

			Define MAC ₅₀ (minimum Alveolar Concentration- 50%)		
			Describe the significance of MAC ₅₀		
			Describe the pharmacological effects of Inhaled anaesthetics		
			Describe the adverse effects of Inhaled anaesthetics		
			Describe second gas effect		
			Describe diffusion hypoxia		
			Describe Malignant hyperthermia and its management		
			Describe the properties of an ideal inhaled anaesthetics		
		IV anaesthetics (Thiopentone, Propofol, Etomidate, Ketamine, Midazolam, Fentanyl)	Describe the mechanism of action, clinical use and adverse effects of Intravenous anaesthetics	IV anaesthetics	2 Hours
			Describe re-distribution of Thiopentone		
			Define neuroleptanalgesia and neuroleptanaesthesia		
			Describe dissociative anaesthesia		
			Name the anaesthetic agent that causes dissociative anaesthesia		

			Describe TIVA (Total Intravenous Anaesthesia) technique		
		Pre-anaesthetic medications	Describe Pre-anaesthetic medications Describe the drugs used as Pre-anesthetic medications	Pre-anaesthetic medications	1 hour
		Obstetric analgesia	Describe the drugs for obstetric analgesia	Obstetric analgesia	
4.	Community medicine/biostatistics	Z test & it's application, Types / shapes of frequency distribution	Define & Describe 'z' test Describe its use in different statistical settings Calculate 'z' test Explain its application in hypothesis testing Interpret and apply to clinical settings Discuss various shapes of frequency distribution Describe the applications of parametric and non-parametric tests	Z test & it's application, Types / shapes of frequency distribution	2 Hours

THEME 5: TREMORS

S#	Subjects	Topics	Los	Contents	Hours
1.	Pathology	Neurodegenerative disorders: <ul style="list-style-type: none"> • Alzheimer`s disease • Parkinson`s disease • Huntington`s Disease and Spinocerebellar ataxias Motor Neuron disease	Describe the aetiology, risk factors, morphology and clinical features of Alzheimer`s disease Describe the aetiology, risk factors, morphology and clinical features of Parkinson`s disease Describe the aetiology, risk factors, morphology and clinical features of Huntington`s disease Describe the clinical features of spinocerebellar ataxias	Common Neurological disorders	1 Hour
2.	General Medicine	Parkinson`s disease	Describe the aetiology, risk factors, morphology and clinical features of Motor Neuron Disease Describe the types, clinical presentation and management of Motor neuron disease	Aetiology Risk factors Morphology Clinical features Types	1 Hour
3.	Pharmacology	Drugs for Parkinsonism	Classify drugs for Parkinsonism	Classification	2 Hour

		Levodopa (with Carbidopa)	Describe the pharmacokinetics, mechanism of action, adverse effects, contraindications and drug interactions of Levodopa	MOA Clinical uses Adverse Effects			
			Discuss the rationale of combining Carbidopa (or Benserazide) with Levodopa				
			Describe the on-off phenomenon				
			Describe the end-of-dose akinesia				
			Describe "drug holidays" for Levodopa		1 hour		
		Bromocriptine	Describe the mechanism of action, clinical uses and adverse effects of Bromocriptine				
		Selegiline	Describe the mechanism of action and clinical uses of Selegiline Describe the differentiating point regarding the use of Selegiline as anti parkinsonian drug and its use as antidepressant drug				

		Apomorphine	Describe the mechanism of action and clinical use of Apomorphine		1 hour
		Drug-induced Parkinsonism	Enlist the drugs causing Parkinsonism-like symptoms	Drug-induced Parkinsonism	
			Enlist the drugs used in the management of drug-induced Parkinsonism		
			Describe the rationale of avoiding Levodopa in drug-induced Parkinsonism		
4.	Paediatrics	Cerebellar ataxias	Describe the clinical features and management of Friedreich's Ataxia	Friedreich's Ataxia	1 Hour
5.	Community medicine/biostatistics	"t" test & its application	Define & Describe 't' test	"t" test & its application	1 Hour
			Explain its use in different statistical settings		
			Calculate 't' test		
			Describe its application in hypothesis testing		
			Interpret and apply to clinical settings		
			Calculate degree of freedom		
		Chi square test & its application	Describe 'x ² ' test	Chi square test & its application	
	Describe its use in different statistical settings				

			Calculate ' χ^2 ' test		1 Hour
			Explain its application in hypothesis testing		
			Interpret and apply to clinical settings		
		Correlation, regression	Describe Correlation & Regression	Correlation, regression	
			Interpret and apply to clinical settings		
		Practical Problems in biostatistics	Discuss practical problems encountered in the application of biostatistics and SPSS	Practical Problems in biostatistics	

THEME 6: HEADACHE

S#	Subjects	Topics	Los	Contents	Hours
1.	Pathology	Meningitis	Explain the aetiology, clinical features, investigations and complications of acute pyogenic meningitis	Aetiology C/F Investigations Managements	2 Hours
			Explain the aetiology, clinical features, investigations and complications of Tuberculous meningitis		
		Encephalitis	Explain the aetiology, clinical features, investigations and complications of viral encephalitis		
		Brain abscess	Explain the aetiology, clinical features, investigations and complications of brain abscess		
		Cerebral Toxoplasmosis	Explain the aetiology, clinical features, investigations and complications of Cerebral Toxoplasmosis		
		Tumours of CNS	Describe the classification of brain tumours on the basis of primary and secondary origin and benign and malignant	Common CNS tumours	

		Gliomas	Describe the classification, gross and microscopic morphology and clinical features of Gliomas		
		Embryonal neoplasms	Describe the classification, gross and microscopic morphology and clinical features of embryonal neoplasms of brain		
		Meningioma	Describe the gross and microscopic morphology and clinical features of Meningioma		
		Other neoplasms	Enlist brain neoplasms other than gliomas, meningioma and embryonal cell neoplasms		
			Enlist the metastatic brain neoplasms		
2.	Pharmacology	Migraine and Cluster headaches	Classify drugs used for the treatment of Migraine and Cluster headaches	Classification	2 Hour

			Enlist the drugs used for the prophylaxis of Migraine and Cluster headaches		
		Triptans (Sumatriptan and others)	Describe the mechanism of action, clinical use and adverse effects of Sumatriptan	MOA, clinical uses and adverse effects	
		Ergot alkaloids	Enlist Ergot alkaloids		
			Describe the pharmacological effects of Ergot alkaloids		
		Ergotamine	Describe the mechanism of action, clinical use and adverse effects of Ergotamine		
3.	General Medicine	Meningitis	Explain the aetiology, pathogenesis, clinical presentation, investigations and management of Acute pyogenic meningitis	Pyogenic Tuberculous Meningitis	1 Hour
			Explain the aetiology, pathogenesis, clinical presentation, investigations and management of Tuberculous meningitis		
4.	Community medicine	Rabies	Explain the aetiology, clinical presentation of a patient with Rabies	Aetiology C/F	1 Hour

			Describe post-exposure prophylaxis of Rabies	Prophylaxis	
5.	Family medicine	Rabies prophylaxis	Describe the types of wounds inflicted by rabid dog bite	Wounds caused by rabid dogs Types of immunizations	1 Hour
			Explain the types of active and passive immunisation for Rabies post-exposure prophylaxis		
			Describe the indications of Rabies vaccine and immunoglobulins		
6.	Paediatrics	Meningitis	Explain the aetiology, pathogenesis, clinical presentation, investigations and management of Acute pyogenic meningitis in children and neonates	Aetiology, pathogenesis, clinical presentation, investigations and management	1 Hour
		TBM	Explain the aetiology, pathogenesis, clinical presentation, investigations and management of Acute pyogenic meningitis in children		
7.	Psychiatry	Chronic daily headache	Differentiate between neurological and psychological headache (chronic tension headache)	Types C/F Management	1 Hour

			Identify the red signs in patients with headache		
			Describe the principles of management of acute and chronic headaches		
8.	RESEARCH	Data analysis	Use MS Excel for data analysis	Data analysis	1 Hour
			Use SPSS for data analysis		
			Use Endnote for reference management		
			Compile, analyze and write a dissertation		

THEME 7: PARAPLEGIA

S#	Subjects	Topics	Learning Objectives	Contents	Hours
1.	Pathology	Multiple sclerosis and other demyelinating disorders of CNS	Explain the pathogenesis, morphology and clinical features of multiple sclerosis	Multiple Sclerosis Common pathological demyelinating disorders	1 Hour
			Describe the morphology of the following: Acute demyelinating encephalomyelitis Acute necrotizing haemorrhagic encephalitis		
2.	General Medicine	Multiple sclerosis	Explain the pathophysiology, clinical features and management of Multiple sclerosis	Pathophysiology, clinical features and management	1 Hour
		Transverse myelitis	Describe the aetiology, pathophysiology, clinical features and management of Transverse myelitis		
		Cervical spine	Explain the pathophysiology, clinical features, investigations and management of Cervical spine		
3.	Orthopaedics		Describe the general management of a patient with traumatic paraplegia	Management of traumatic paraplegia	1 Hour
4.	Neurosurgery		Describe the general management of a patient with traumatic paraplegia	Traumatic paraplegia	1 Hour
			Describe the types, clinical features and surgical management of spinal tumours	Spinal Tumor	

THEME 8: NUMBNESS AND TINGLING

S#	Subjects	Topics	LOS	Contents	Hours
1.	Pathology	Patterns and types of peripheral nerves injury	Describe the patterns and types of neuronal injury	Types pathophysiology clinical features	1 Hour
		Acute and chronic demyelinating neuropathies	Describe the pathophysiology and clinical features of Guillain Barre syndrome		
			Explain the pathophysiology of Chronic demyelinating polyneuropathies		
		Myasthenia Gravis	Describe the pathophysiology and clinical features of Myasthenia Gravis	Pathophysiology clinical features	
		Tumors of Peripheral nerve	Enlist the tumours of peripheral nerves	Types Neurofibromatosis	
Describe the clinical features, of Neurofibromatosis					
2.	Pharmacology	Local anaesthetics (Lignocaine and others)	Classify Local anaesthetics	Local anaesthetics	2 Hour
			Enlist the Local anaesthetics used for surface anaesthesia		
			Enlist the Local anaesthetics used for infiltration anaesthesia, nerve block, spinal anaesthesia and epidural anaesthesia		

			Describe EMLA (Eutectic Mixture of Local Anaesthetics) and its clinical use		
			Describe the pharmacokinetics of Local anaesthetics		
			Describe the mechanism of action of Local anaesthetics		
			Describe the pharmacological effects of Local anaesthetics on nerves		
			Describe the differential blockade of peripheral nerves by Local anaesthetics		
			Describe the pharmacological effects of Local anaesthetics on other excitable membranes		2 hour
			Describe the clinical uses of Local anaesthetics		
			Describe the major advantages of adding Adrenaline to Lignocaine for infiltration anaesthesia		
			Calculate the quantity of Adrenaline/ml in the traditionally used combinations of Adrenaline and Lignocaine (i.e. 1:200,000 & 1: 80,000)		
			Describe the adverse effects of Local anaesthetics		
			Classify Local anaesthetics		

3.	General Medicine	Guillain Barre syndrome	Explain the pathophysiology, clinical features and management of Guillain Barre syndrome	pathophysiology, clinical features and management	1 Hour
		Neuropathies	Describe the causes, types, distribution and clinical features of different neuropathies		
		Myasthenia Gravis	Explain the pathophysiology, clinical features and management of Myasthenia Gravis	Myasthenia Gravis Neurofibromatosis	
			Describe the clinical features, types and management of Neurofibromatosis		
4.	Paediatrics	Hereditary neuropathies	Describe the types, clinical features and management of hereditary neuropathies	types, clinical features and management	1 Hour
5.	Orthopaedics	Peripheral nerve injury	Describe the types and management of peripheral nerve injury	types, clinical features and manage ment	1 Hour
			Explain entrapment neuropathies		
			Describe the risk factors, clinical features and management of Carpal tunnel syndrome		

Practical Work

S#	Subjects	Topics	Learning Objectives	Hours
1.	Pathology	CSF	Describe the chemical, cytological composition of CSF	2
			Estimate the following analysis of CSF: <ul style="list-style-type: none"> • Chemistry • Cytology • Gram stain • Microbiology 	2
		Histopathological specimens of brain tumours	Identify the gross structure and microscopic features of: <ul style="list-style-type: none"> • Meningioma • Glioma/Astrocytoma 	2
2.	Pharmacology	Depression	Formulate a prescription for a newly diagnosed case of depression	2
		Epilepsy	Formulate prescriptions for patients with Tonic-Clonic and Petit-mal epilepsy	2
		Migraine headache	Formulate prescription for a patient with migraine headache	2
3.	Community medicine	Data presentation <ul style="list-style-type: none"> • pie chart • histogram • bar chart and its types • venn diagram • scatter plot 	Identify and interpret the charts	2
		Application and Interpretation of statistical data	Apply a statistical test on a given scenario	2

		Data interpretation	Interpret the normal distribution curve, skewed distribution, bi and poly-modal distribution & Standard Normal Curve	
--	--	---------------------	--	--

9.1 CLINICAL ROTATION SCHEDULE

Duration	11 weeks			11 weeks			9 weeks	5 weeks
Disciplines	5wks	3wks	3wks	5wks	3wks	3wks		
Disciplines	Medicine	Medicine & Allied	Paeds	Surgery	Surgery & Allied	Gynae Obs	EYE	ENT
Total hours*	65	39	39	65	39	39	100	64

* 2.6 Clinical rotation hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

10. TEACHING HOURS ALLOCATION

S. No	Subject	Hours (approximate)	Practical Hours
1	Pathology	24	6
2	Pharmacology	35	6
3	Community medicine	36	6
4	General medicine	12	-
5	Psychiatry	10	-
6	Paediatrics	5	-
7	Neurosurgery	2	-
8	Orthopaedics	1	-
9	Anaesthesia	4	-
10	MEDICAL EDUCATION	2	-
11	RESEARCH	16	-
12	Family medicine	1	-
	TOTAL	148	18

11. EXAMINATION AND METHODS OF ASSESSMENT

11.1 EXAMINATION RULES AND REGULATIONS

- Student must report to examination hall/venue, in time for smooth conduction of the exams.
- No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
- No students will be allowed to sit in exam without College ID Card, and Lab Coat
- Students must sit according to their roll numbers mentioned on the seats.
- Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) -Sharing is prohibited
- Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
- Students must not possess any written material or communicate with their fellow students
- Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
- **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

11.2 ASSESSMENT

11.2.1 Internal: Total 10% (20 marks)

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
 - **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
 - **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:

- NOTE: **at least 75% attendance is mandatory** to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

11.2.2 University Annual Exam: Total 90%

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

11.3 METHODS OF ASSESSMENT

11.3.1 Multiple Choice Questions

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

11.3.2 Short Essay Questions (SEQs):

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

11.3.3 OSPE / OSCE

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas
- All students are rotated through the same stations.

- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
 - Interactive Stations:
 - In this station, examiner ask questions related to the task within the allocated time.
 - Observed Stations:
 - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
 - Unobserved (static) Stations:
 - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
 - Rest station
 - It is a station where there is no task given and in this time student can organize his/her thoughts

11.3.4 ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

11.3.5 WEEKLY TESTS

- The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.
- The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.

- It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.
- Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

11.3.6 POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD
- Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class
- PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

12. GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable

13. ASSESMENT BLUEPRINT

NEUROSCIENCE-II MODULE

Assessment is based on Table of Specification (TOS)

	ASSESMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

14. RECOMMENDED BOOKS

S#	Subjects	Resources
1.	Community medicine	<ol style="list-style-type: none"> 1. Preventive and Social Medicine by K Park 2. Community Medicine by M. Ilyas 3. Basic Statistics for the Health Sciences by Jan W Kuzma 4. Textbook of Community Medicine and Public Health, 2018. Saira Afzal, Sabeena Jala
2.	Neurology	<ol style="list-style-type: none"> 1. Davidson's Principles and Practice of Medicine 2. Kumar and Clark's Clinical Medicine, Edited by Parveen Kumar, 9th Edition
3.	Neurosurgery	<ol style="list-style-type: none"> 1. Bailey & Love's Short Practice of Surgery , 26th Edition
4.	Pathology	<ol style="list-style-type: none"> 1. Robbins & Cotran, Pathologic Basis of Disease, 9th edition. 2. Rapid Review Pathology, 4th edition by Edward F. Goljan MD
5.	Pediatrics	<ol style="list-style-type: none"> 1. Nelson Textbook of Pediatrics, 19th Edition 2. Textbook of Pediatrics by PPA, preface written by S. M. Haneef 3. Clinical Pediatrics by Lakshmanaswamy Aruchamy, 3rd Edition
6.	Pharmacology	<ol style="list-style-type: none"> 1. Lippincott Illustrated Pharmacology 2. Basic and Clinical Pharmacology by Katzung
7.	Psychiatry	<ol style="list-style-type: none"> 1. Oxford textbook of psychiatry by Michael G. Gelder, 2nd Edition 2. Handbook of Behavioural Sciences, by Mowadat H. Rana 3. Drugs used in Psychiatry, by Prof. Muhammad Iqbal Afridi 4. Kaplan Series, Behavioural Sciences, Psychiatry



IBN-E-SINA UNIVERSITY MIRPURKHAS
FACULTY OF BASIC MEDICAL SCIENCES



Course Feedback Form

Course Title: _____

Semester/Module _____ Dates: _____

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

THE DESIGN OF THE MODLUE

- A. Were objectives of the course clear to you? Y N
- B. The course contents met with your expectations
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with
l. Too few examples 5. Adequate examples
- E. The level of the course was
l. Too low 5. Too high
- F. The course contents compared with your expectations
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?
l. Not at all 5. Very strongly

THE CONDUCT OF THE MODLUE

- A. The lectures were clear and easy to understand
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes No

F. Please give overall rating of the course

90% - 100% ()

60% - 70% ()

80% - 90% ()

50% - 60% ()

70% - 80% ()

below 50% ()

Please comment on the strengths of the course and the way it was conducted.

Please comment on the weaknesses of the course and the way it was conducted.

Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

Thank you!!

STUDENT'S STUDY GUIDE
OPHTHALMOLOGY MODULE
FOURTH PROFESSIONAL MBBS



TABLE OF CONTENTS

Sr. No	Contents
1.	DISCLAIMER
2.	CURRICULUM FRAMEWORK
3.	MODEL OVERVIEW
4.	WHAT IS STUDY GUIDE
5.	LEARNING METHODOLOGIES
6.	INTRODUCTION
7.	LEARNING OBJECTIVES
8.	THEMES
9.	SPECIFIC LEARNING OBJECTIVES
10.	TEACHING HOURS ALLOCATION
11.	EXAMINATION AND METHODS OF ASSESSMENT
12.	GRADING POLICY
13.	ASSESSMENT BLUEPRINT
14.	RECOMMENDED BOOKS

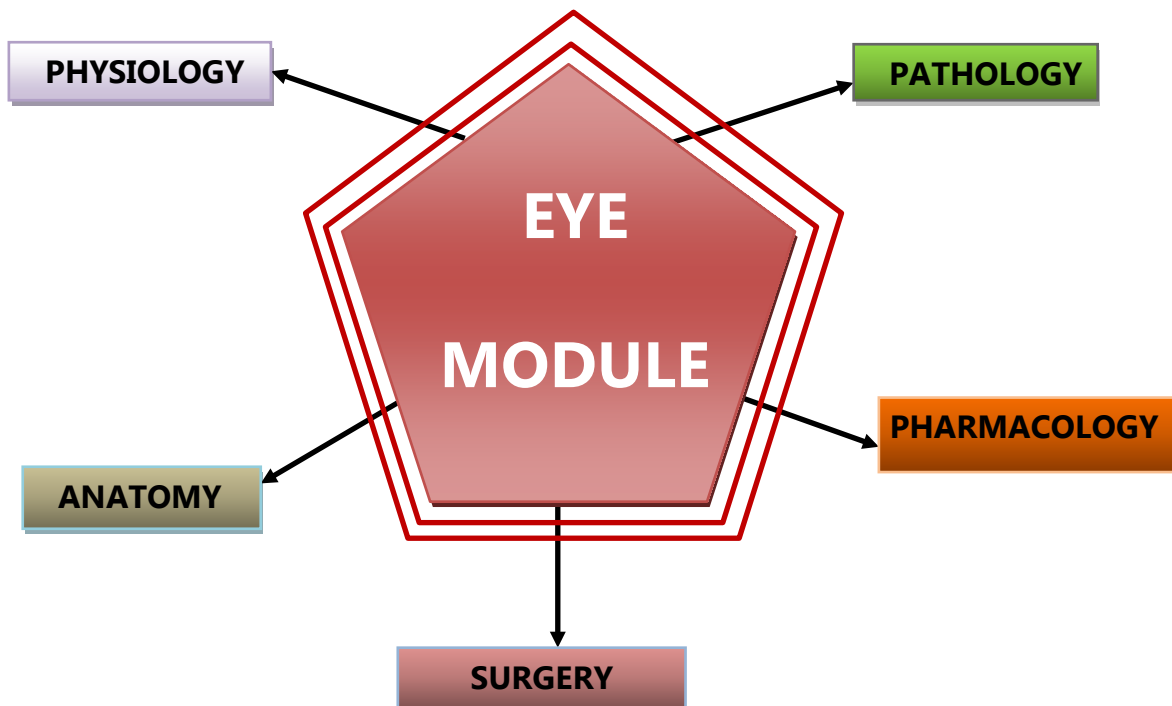
1. DISCLAIMER

- Developing a study guide is a dynamic process and undergoes iteration according to the needs and priorities.
- This study guide is subjected to the change and modification over the whole academic year.
- However, students are advised to use it as a guide for respective modules.
- The time tables are for guiding purpose. It is to advise that final timetables are always displayed over the notice boards of each lecture hall.
- Students are encouraged to provide feedback via coordinator

2. CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Eye, ENT, Endocrine and Reproduction-III, Git and Hepatobiliary-III, Neuroscience-II and Renal-II modules which link basic science knowledge to clinical problems.



3. MODULE OVERVIEW

OPHTHALMOLOGY MODULE DETAILS

Course	MBBS
Year	Fourth professional
Duration	5 weeks
Learning Outcomes	The competent Medical Practitioner
Competencies covered	To develop medical professionals who are well - versed, adept, and have the right mindset.
Module Assessment	End module formative assessment
Teaching Methods	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
Assessment Methods	MCQs, SEQs, OSPE, VIVA

OPHTHALMOLOGY MODULE COMMITTEE

Sr. No	Names	Department	Designation
MODULE COORDINATOR			
1.	Prof: Dr. Allah Bachayo Rajar	Community Medicine	Professor
COMMITTEE MEMBERS			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

4. WHAT IS STUDY GUIDE

It is an aid to Inform students how student learning program of the module has been organized, to help students organize and manage their studies throughout the module and guide students on assessment methods, rules and regulations.

The study guide:

- Communicates information on organization and management of the module.
- This will help the student to contact the right person in case of any difficulty.
- Defines the objectives which are expected to be achieved at the end of the module.
- Identifies the learning strategies such as lectures, small group teachings.

Module objectives.

- Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- Highlights information on the contribution of continuous on the student's overall performance.
- Includes information on the assessment methods that will be held to determine every student's performance.

Achievement of objectives.

- Focuses on information pertaining to examination policy, rules and regulations.

5. LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations
- Skills session
- Practicals
- Self-Directed Study

• **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

• **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

• **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

- **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to pharmacology, microbiology, forensic medicine, and community medicine have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

6. INTRODUCTION

An essential component of a patient's general examination is the examination of the eyes and adnexa. Many different systemic disorders that are common in the community can be seen in the eye. For comprehensive patient care, it is essential to comprehend the consequences of eye disease.

Furthermore, blindness affects at least 2.5% of Pakistanis, of whom 80% can be cured with awareness-raising. Glaucoma, corneal disease, and cataracts are the three main causes of blindness.

In addition to a variety of ophthalmological disorders whose early diagnosis and treatment can avoid impairment and blindness, this session will cover frequent ophthalmological problems you may face in primary care settings.

6.1 RATIONALE

Eye disorders are frequently seen in the practice of medicine. A medical graduate must possess a solid understanding of systemic disorders that impact the eye in addition to being able to comprehend common diseases affecting the eye and related structures, such as ocular trauma.

Infections including conjunctivitis, cataracts, glaucoma, retinal illnesses, refraction problems, and involvement of the eyes in systemic ailments are common diseases that impact the eyes. A physician also has to grasp the fundamentals of funduscopy. These illnesses are covered in this lesson, where students can review the fundamental information they learned in the Head & Neck module.

6.2 IBN E SINA UNIVERSITY (ISU) VISION:

To become a world-leading organization in rural health and social care research, training, recruitment and best evidence-based practice.

6.3 IBN E SINA UNIVERSITY (ISU) MISSION:

Our Mission is to inspire hope, and contribute to health and well-being by providing the best care to every patient through integrated clinical practice, education and research. To provide a focal point for the development and collation of high-quality research pertinent to rural health and wellbeing. To improve the training, recruitment and retention of a professional workforce within rural communities. To be recognized as an exemplar in rural health and wellbeing on the international stage. To establish a network of individuals and groups that support research, innovation and development in rural health and social care.

7. LEARNING OBJECTIVES

7.1 General learning Objectives:

By the end of this module, the students should be able to:

1. Recognize eye conditions, including emergencies, offer basic eye care, direct patients to the proper facility, and follow up with them.
2. Carry out necessary minor surgical operations.
3. Effectively communicate any eye disorders and related difficulties to the patient, family, and community.
4. Recognize medical ethics, their relevance to ophthalmology, and how to protect patient confidentiality.
5. To comprehend the community's typical ophthalmology-related public health issues and how to prevent them.
6. Recognize medical research principles, including information technology essentials.

7.2 Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Explain the visual requirements.
2. Describe and categorize blindness.
3. Explain the various visual field defects and the anatomy and physiology of the visual pathway.
4. Explain the fundamentals and applications of visual fields, ultrasonography, and optical coherence tomography (OCT) in common eye problems.
5. Identify the various forms of lid bumps and suggest a treatment strategy.
6. Explain about ptosis, entropion, and ectropion, and outline the available treatments.
7. Examine swollen eyes and look into possible causes.
8. Explain the red eye differential diagnosis.
9. Describe the etiology and treatment of the various inflammations of the conjunctiva.
10. Describe the causes, symptoms, and treatment options for various corneal inflammations.
11. Explain about the etiology and treatment of ocular inflammations.
12. Explain the dynamics of aqueous fluid and how glaucoma is affected by it.
13. List the various reasons of progressive vision loss and suggest a course of action for each.
14. List the many (painful and painless) reasons of sudden visual loss and suggest a course of action for each.
15. Explain the presentation of squint and its guiding management concepts.
16. List the various reasons of double vision and suggest a course of action for each.

17. List the various causes of childhood blindness and suggest a course of action for each.
18. Talk about the significance of white pupils in children's clinical care.
19. Describe the symptoms, causes, and treatment of amblyopia.
20. Distinguish between terminology used in the field of ocular trauma.
21. Provide a plan for the treatment of eye injuries.

7.3 Skills / Psychomotor Domain:

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

1. Observation and Assistance
2. Performing the skill under supervision
3. Performing the skill independently
4. Near and distant visual acuity
5. Examination of adnexa and anterior segment of the eye with a torch / slit lamp examination
6. Use of fluorescein and schirmer strip
7. Eversion of upper eyelid
8. Lacrimal regurgitation test
9. Extra ocular movements
10. Detection of the deviated eye (cover uncover test)
11. Test for pupillary reflexes
12. Measurement of intra ocular pressure Palpation assessment / digital tonometry Schiotz tonometer
13. Direct and indirect ophthalmoscopy
14. Retinoscopy with plane mirror

7.4 Attitude / Affective Domain:

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

1. Respect oneself and one's peers, both when providing and receiving comments.
2. To show patients compassion and understanding.
3. Develop your ability to communicate while keeping a sense of duty to your patients.
4. Showcase appropriate laboratory procedures.
5. Relate to patient and careers vulnerability
6. Demonstrate ethical self-management
7. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
8. Display compassion with patient and colleagues
9. Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease

7.5 Outcomes of Ophthalmology Module

1. Knowledgeable
2. Skillful
3. Community Health Promoter
4. Problem-solver
5. Professional
6. Researcher
7. Leader and Role Model

8. THEMES FOR OPHTHALMOLOGY MODULE

SNO	Themes	Duration
1	Foundation of Ophthalmology	1 week
2	Lid Abnormalities & Bulging Eyes	1 week
3	Red Eye	1 week
4	Visual Loss	1 week
5	Multiple Endocrine Neoplasia Syndromes	1 week

9. SPECIFIC LEARNING OBJECTIVES THEME WISE

Theme 1: Foundation of Ophthalmology

S. No.	Lecture Topic	Topic Objectives	Teaching Hours	Mode of Teaching	Assessment Tools
1.	Standards Of Vision and Blindness	Discuss visual standards and blindness according to WHO classification.	1 hr	Lecture SGD	MCQs OSCE SEQ
2.	Pupil Reflexes and Drugs Used In Common Eye Conditions	Describe the normal and abnormal pupil reflexes. Discuss drugs used in common eye diseases.	1 hr	Lecture SGD	MCQs OSCE SEQ
3.	Visual Pathway and Visual Field Defects	Describe the visual pathway. Describe the common visual field defects.	1 hr	Lecture SGD	MCQs OSCE SEQ
4.	Optical Coherence Tomography (OCT) and Visual fields (VF)	Discuss the uses of OCT and VF in ophthalmology.	1 hr	Lecture SGD	MCQs OSCE SEQ
5.	Fundus Fluorescein Angiography (FFA) and Ultrasonography	Discuss the uses of FFA and Ultrasonography in ophthalmology.	1 hr	Lecture SGD	MCQs OSCE SEQ
6.	Optics & Eye	Discuss visual functions (visual acuity, color vision, contrast sensitivity, light brightness), Refraction, Pseudophakia, Aphakia, and Anisometropia	1 hr	Lecture SGD	MCQs OSCE SEQ
7.	Refractive Errors	Discuss pathophysiology and clinical presentation of myopia, hypermetropia, astigmatism and presbyopia	1 hr	Lecture SGD	MCQs OSCE SEQ
8.	Correction of Refractive Errors	Describe management of myopia, hypermetropia, astigmatism and presbyopia.	1 hr	Lecture SGD	MCQs OSCE SEQ

Theme 2: Lid Abnormalities & Bulging Eyes

9.	Differential Diagnosis Of Lid Bumps	Discuss overview of different causes of lid bumps.	1 hr	Lecture SGD	MCQs OSCE SEQ
10	Chalazion, Stye	Describe pathophysiology and management of chalazion and stye.	1 hr	Lecture SGD	MCQs OSCE SEQ

11	Tumors of Eyelids	Discuss different eyelid tumors and its pathogenesis.	1 hr	Lecture SGD	MCQs, OSCE SEQ
12	Management of Lid Bumps	Describe management plan of lid bumps.	2 hr	Lecture SGD	MCQs OSCE SEQ
13	Ptosis	Discuss causes of ptosis, assessment and their management.	1 hr	Lecture SGD	MCQs OSCE SEQ
14	Trichiasis, Entropion and Ectropion	Discuss Trichiasis, Entropion and Ectropion, assessment and their management.	1 hr	Lecture SGD	MCQs OSCE SEQ
15	Proptosis - Basics	Discuss the etiology, clinical features, investigation and management of proptosis in children and adults	1 hr	Lecture SGD	MCQs OSCE SEQ
16	Preseptal and Orbital Cellulitis	Enumerate Differential diagnosis / causes of proptosis in children and adults.	1 hr	Lecture SGD	MCQs OSCE SEQ
17	Thyroid Eye disease (TED)	Discuss the etiology, clinical features, investigation and management of TED.	1 hr	Lecture SGD	MCQs OSCE SEQ
18	Myasthenia Gravis & Migraine	Discuss the etiology, clinical features, investigation, and management of Myasthenia Gravis. Discuss the etiology, clinical features, investigation, and management of Migraine.	1 hr	Lecture SGD	MCQs OSCE SEQ
Theme 3: Red Eye					
19	Red eye	Enumerate causes of red eye. Describe pathophysiology and management of different conjunctival (Bacterial/Viral/Fungal/Allergic) inflammations.	2 hr	Lecture SGD	MCQs OSCE SEQ
20	Corneal Inflammations/Infections	Discuss the etiology, clinical features, investigation, and management of non-infectious corneal inflammations. Discuss investigations for corneal ulcers.	1 hr	Lecture SGD	MCQs OSCE SEQ
21	Bacterial Keratitis	Discuss the etiology, clinical features, investigation, and management of different bacterial corneal ulcers.	1 hr	Lecture SGD	MCQs OSCE SEQ
22	Fungal, Viral & Acanthamoeba Keratitis	Discuss the etiology, clinical features, investigation, and management of different fungal, viral & acanthamoeba corneal ulcers.	2 hr	Lecture SGD	MCQs OSCE SEQ

23	Dacryocystitis	Discuss the etiology, clinical features, investigation, and management of congenital nasolacrimal duct obstruction. Assess the time of probing in children. Differentiate between acute, acute on chronic and chronic Dacryocystitis. Discuss the etiology, clinical features, investigation, and management of Dacryocystitis.	1 hr	Lecture SGD	MCQs OSCE SEQ
24	Dry Eyes	Discuss the etiology, clinical features, investigation, and management of Dry Eyes with special emphasis on Vit. A deficiency and Sjogren's syndrome.	1 hr	Lecture SGD	MCQs OSCE SEQ
25	Blepharitis	Discuss the etiology, clinical features, investigation, and management of blepharitis.	1 hr	Lecture SGD	MCQs OSCE SEQ
26	Pterygium, Pseudo-Pterygium, Episcleritis & Scleritis	Describe differences between Pterygium, Pseudo-ptyerygium, Episcleritis & Scleritis and their management.	1 hr	Lecture SGD	MCQs OSCE SEQ
27	Basic Concepts In Ocular Trauma	Discuss definitions, classification & clinical evaluation of ocular injuries and principles of management. Discuss corneal and conjunctival foreign bodies and their treatment.	1 hr	Lecture SGD	MCQs OSCE SEQ
28	Open Globe Injury (OGI) / IOFB / Sympathetic Ophthalmia (SO)	Classify OGI. Discuss the etiology, clinical features, investigation, and management of OGI and IOFB. Discuss the etiology, clinical features, investigation, and management of SO.	1 hr	Lecture SGD	MCQs OSCE SEQ
29	Closed Globe Injury (CGI) Orbital Floor Injury	Discuss the etiology, clinical features, investigation, and management of CGI. Classify CGI.	1 hr	Lecture SGD	MCQs OSCE SEQ
30	Radiation, Thermal, Chemical Injuries	Discuss the etiology, clinical features, investigation, and management of radiation injury. Discuss the etiology, clinical features, investigation, and management of thermal injury Discuss etiology, clinical features, investigation, & management of chemical injury	1 hr	Lecture SGD	MCQs OSCE SEQ

31	Visual Rehabilitation	Discuss various options of visual rehabilitation after ocular trauma. Discuss rehabilitation services for blind people in our setup.	1 hr	Lecture SGD	MCQs OSCE SEQ
32	Uveitis - Basics	Discuss Definitions, classifications, history & workup of uveitis.	1 hr	Lecture SGD	MCQs OSCE SEQ
33	Anterior & Posterior Uveitis	Discuss the etiology, clinical features, investigation, and management of Anterior uveitis. Discuss the etiology, clinical features, investigation, and management of Posterior Uveitis.	1 hr	Lecture SGD	MCQs OSCE SEQ
Theme 4: Visual loss					
34	Visual Loss & Intraocular Pressure (IOP)	Classify causes of visual loss in following order: Visual Loss associated with Anterior segment. Visual Loss associated with Posterior segment. Discuss Aqueous humor dynamics and its role in IOP. Enumerate causes of gradual & sudden visual loss. Define and Classify Glaucoma.	1 hr	Lecture SGD	MCQs OSCE SEQ
35	Open angle glaucoma	Discuss the differences between POAG, NTG and OHT. Discuss the etiology, clinical features, investigation, and management of POAG. Discuss the etiology, clinical features, investigation, and management of NTG. Discuss the etiology, clinical features, investigation, and management of OHT.	1 hr	Lecture SGD	MCQs OSCE SEQ
36	Primary Angle Closure Glaucoma (PACG)	Discuss the stages of PACG. Discuss the etiology, clinical features, investigation, and management of Acute angle closure.	1 hr	Lecture SGD	MCQs OSCE SEQ
37	Neovascular Glaucoma & Lens Induced Glaucoma	Discuss the etiology, clinical features, investigation, and management of Neovascular glaucoma. Discuss the etiology, clinical features, investigation, and management of lens induced glaucoma.	1 hr	Lecture SGD	MCQs OSCE SEQ
38	Treatment Options In Glaucoma	Enumerate different treatment options in glaucoma. Discuss the indications of each treatment option.	1 hr	Lecture SGD	MCQs OSCE SEQ

39	Cataract	Define cataract. Describe the types of Age-related cataract. Describe the pathogenesis and complications of cataract. Describe the management of cataract.	1 hr	Lecture SGD	MCQs OSCE SEQ
40	Cataract Surgery Complications	Discuss the etiology, clinical features, investigation, and management of Endophthalmitis. Discuss the etiology, clinical features, investigation, and management of Panophthalmitis.	1 hr	Lecture SGD	MCQs OSCE SEQ
41	Corneal Ectasia, Dystrophy & Degeneration	Discuss the etiology, clinical features, investigation, and management of keratoconus. Give overview of corneal dystrophies and degenerations.	1 hr	Lecture SGD	MCQs OSCE SEQ
42	Diabetic Eye Disease	Discuss the effects of diabetes on eye. Discuss the etiology, clinical features, investigation, and management of Diabetic Eye Disease (Diabetic Retinopathy and maculopathy).	1 hr	Lecture SGD	MCQs OSCE SEQ
43	Hypertensive Retinopathy	Discuss the effects of hypertension on eye. Discuss the etiology, clinical features, investigation, and management of Hypertensive Retinopathy.	1 hr	Lecture SGD	MCQs OSCE SEQ
44	Central Retinal Vein Occlusion (CRVO)	Discuss the etiology, clinical features, investigation, and management of CRVO.	1 hr	Lecture SGD	MCQs OSCE SEQ
45	Central Retinal Artery Occlusion (CRAO)	Discuss the etiology, clinical features, investigation, and management of CRAO.	1 hr	Lecture SGD	MCQs OSCE SEQ
46	Retinal Detachment (RD)	Discuss the etiology, clinical features, investigation, and management of RD.	1 hr	Lecture SGD	MCQs OSCE SEQ
47	Choroidal Melanoma	Discuss the etiology, clinical features, investigation, and management of choroidal melanoma. Describe the importance of this condition on mortality.	1 hr	Lecture SGD	MCQs OSCE SEQ
48	Night Blindness - Retinitis Pigmentosa, Vit. A Deficiency	Discuss the etiology, clinical features, investigation, and management of Retinitis pigmentosa. Discuss the etiology, clinical features, investigation, and management of Vit. A deficiency.	1 hr	Lecture SGD	MCQs OSCE SEQ

49	Optic neuritis	Classify optic neuritis. Discuss the etiology, clinical features, investigation, and management of optic neuritis.	1 hr	Lecture SGD	MCQs OSCE SEQ
50	Hereditary, Nutritional & Toxic Optic Neuropathies	Discuss the etiology, clinical features, investigation, and management of these optic neuropathies.	1 hr	Lecture SGD	MCQs OSCE SEQ
51	Papilledema	Describe the difference between papilledema and disc swelling. Discuss the etiology, clinical features, investigation, and management of papilledema.	1 hr	Lecture SGD	MCQs OSCE SEQ
Theme 5: Childhood Blindness & Crossed Eyes					
52	White pupil (leukocoria) and Retinoblastoma (RB)	Describe the importance of white pupil in children. Differentiate different causes of white pupil in children. Discuss investigations in white pupil. Discuss the etiology, clinical features, investigation and management of RB.	1 hr	Lecture SGD Lecture SGD	MCQs OSCE SEQ
53	Congenital Cataract	Define congenital cataract. Describe the types of congenital cataracts. Describe the pathogenesis and complications of congenital cataracts. Describe the management of congenital cataracts.	1 hr	Lecture SGD	MCQs OSCE SEQ
54	Congenital Glaucoma	Discuss the etiology, clinical features, investigation and management of Congenital Glaucoma.	1 hr	Lecture SGD	MCQs OSCE SEQ
55	Amblyopia	Define Amblyopia. Discuss the etiology, clinical features, investigation, and management of amblyopia.	1 hr	Lecture SGD	MCQs OSCE SEQ
56	Squint - Basics	Discuss definitions, clinical evaluation of squint and principles of management	1 hr	Lecture SGD	MCQs OSCE SEQ
57	Concomitant Squint Esotropia	Define concomitant squint. Discuss the etiology, clinical features, investigation, and management of esotropia.	1 hr	Lecture SGD	MCQs OSCE SEQ
58	Exotropia	Discuss the etiology, clinical features, investigation, and management of exotropia.	1 hr	Lecture SGD	MCQs OSCE SEQ

59	Diplopia & Incomitant Squint	<p>Discuss differential diagnosis/causes of diplopia.</p> <p>Define incomitant squint.</p> <p>Discuss the etiology, clinical features, investigation, and management of 3rd nerve palsy.</p> <p>Discuss the etiology, clinical features, investigation, and management of 4th nerve palsy.</p> <p>Discuss the etiology, clinical features, investigation, and management of 6th nerve palsy.</p>	1 hr	Lecture SGD	MCQs OSCE SEQ
----	------------------------------	--	------	----------------	------------------

CLINICAL ROTATION 4TH YEAR MBBS

Theme 1: Foundation of Ophthalmology

Topic	Learning objectives	Assessment method	Hours
1. History Taking 2. Visual Acuity	<ul style="list-style-type: none"> • Take detailed history in ocular conditions • Check visual acuity. 	OSCE	03 + 02
3. Pupil Examination	<ul style="list-style-type: none"> • Perform pupillary examination. 	OSCE	03
4. Visual Fields (Confrontation)	<ul style="list-style-type: none"> • Perform visual fields examination by confrontation methods. 	OSCE	03
5. Slit-Lamp Examination	<ul style="list-style-type: none"> • Identify parts of slit-lamp 	OSCE	01
6. Anterior Segment Examination	<ul style="list-style-type: none"> • Examine anterior segment on slit lamp 	OSCE	01
7. Direct Ophthalmoscopy	<ul style="list-style-type: none"> • Perform direct ophthalmoscopy 	OSCE	02
8. Retinoscopy	<ul style="list-style-type: none"> • Identify trial lenses used in refraction. 	OSCE	03
9. Indirect Ophthalmoscopy	<ul style="list-style-type: none"> • Perform indirect ophthalmoscopy 	OSCE	02
Investigations 10. OCT 11. Visual Fields 12. Biometry 13. B-Scan 14. FFA 15. Corneal Topography	Describe/interpret the results of: <ul style="list-style-type: none"> • OCT • Visual fields • Biometry • B-scan • FFA & Corneal topography 	OSCE	03 + 02

Theme 2: Lid Abnormalities & Bulging Eyes

Topic	Learning objectives	Assessment method	Hours
16. Eversion Of Upper Lids	<ul style="list-style-type: none"> • Observe Eversion of upper lids 	OSCE	01
17. Ptosis Examination	<ul style="list-style-type: none"> • Perform ptosis examination. 	OSCE	03
18. Ptosis And Its Surgeries	<ul style="list-style-type: none"> • Observe ptosis surgery 	OSCE	03
19. Lids Abnormalities	<ul style="list-style-type: none"> • Examine common lid abnormalities (Ectropion, Entropion, Chalazion, Stye) 	OSCE	03
20. Lids Surgery Related Instruments	<ul style="list-style-type: none"> • Identify instruments used in lids surgery 	OSCE	03
21. Lid Reconstruction Procedures	<ul style="list-style-type: none"> • Observe lid reconstruction procedures 	OSCE	05
22. Proptosis	<ul style="list-style-type: none"> • Observe proptosis 	OSCE	03

Theme 3: Red Eye

Topic	Learning objectives	Assessment method	Hours
23. Use Of Topical Anesthesia and Staining	<ul style="list-style-type: none"> • Perform topical anesthesia and staining. 	OSCE	01
24. Removal Of Superficial Foreign Bodies	<ul style="list-style-type: none"> • Observe corneal foreign body removal. 	OSCE	01
25. Corneal Scrapping	<ul style="list-style-type: none"> • Observe corneal scrapping. 	OSCE	02
26. Keratoplasty Surgery	<ul style="list-style-type: none"> • Observe keratoplasty. 	OSCE	03
27. Lacrimal Regurgitation Test	<ul style="list-style-type: none"> • Perform lacrimal regurgitation test. 	OSCE	01
28. Dacryocystorhinostomy (DCR) Surgery & Its Instruments	<ul style="list-style-type: none"> • Observe DCR surgery and identify instruments used 	OSCE	03
29. Ocular Trauma	<ul style="list-style-type: none"> • Observe first aid to Ocular trauma • Perform eye wash in chemical injury. 	OSCE	03
30. Globe Repair Surgery	<ul style="list-style-type: none"> • Observe OGI surgery. 	OSCE	03

Theme 4: Visual Loss

Topic	Learning objectives	Assessment method	Hours
31. Normal Disc 32. Disc Abnormalities 33. Swollen Disc(S)	<ul style="list-style-type: none"> • Examine normal disc • Examine glaucomatous disc. • Examine swollen disc 	OSCE	03
34. Detection Of Retinal Lesions 35. Retinal Vascular Diseases	<ul style="list-style-type: none"> • Detect common retinal conditions • Differentiate different retinal vascular conditions. 	OSCE	03
36. Retinal Detachment	<ul style="list-style-type: none"> • Identify RD in pictures • Observe Retinal detachment surgery 	OSCE	03
37. Use Of Lasers In Eye 38. Intravitreal Injections	Discuss <ul style="list-style-type: none"> • Use of lasers in eye • Intravitreal injections 	OSCE	02
39. Tonometry	Observe goldman tonometry	OSCE	01
40. Glaucoma Filtration Surgery	Observe Glaucoma filtration surgery	OSCE	03

Theme 5: Childhood Blindness & Crossed Eyes

Topic	Learning objectives	Assessment method	Hours
41. Congenital Glaucoma	<ul style="list-style-type: none">• Observe congenital glaucoma examination (EUA) and surgery	OSCE	03
42. Cataract (Adult and Ccongenital)	<ul style="list-style-type: none">• Detect cataract on ocular examination	OSCE	03
43. Cataract surgery	<ul style="list-style-type: none">• Observe types of Adult and Congenital cataract surgery	OSCE	03 + 03
44. Extraocular Mmovements	<ul style="list-style-type: none">• Perform extraocular movements and squint examination	OSCE	03
45. Squint Eexamination	<ul style="list-style-type: none">• Perform cover / uncover / alternate cover tests• Identify the pattern of squint (Esotropia vs. Exotropia)	OSCE	03
46. Squint Surgery	<ul style="list-style-type: none">• Observe squint surgery	OSCE	03

9.1 CLINICAL SCIENCES SUBJECTS

EYE				
S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	FAMILY MEDICINE	Red Eye	1	Lecture
	Common complaints of EYE	Eye lid Problems	1	Lecture
		Cataract	1	Lecture
		Gloucoma	1	Lecture
		Headaches and Dizziness	1	Lecture

10. TEACHING HOURS ALLOCATION

Theme	In class teaching (Hours)	Clinical (Hours)	Total (Hours)
Theme 1: Foundation of Ophthalmology	08	25	33
Theme 2: Lid Abnormalities & Bulging Eyes	11	21	32
Theme 3: Red Eye	17	17	34
Theme 4: Visual loss	18	15	33
Theme 5: Childhood Blindness & Crossed Eyes	08	21	29
Family Medicine	5	-	5
Total	67	99	166

11. EXAMINATION AND METHODS OF ASSESSMENT

11.1 EXAMINATION RULES AND REGULATIONS

- Student must report to examination hall/venue, in time for smooth conduction of the exams.
- No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
- No students will be allowed to sit in exam without College ID Card, and Lab Coat
- Students must sit according to their roll numbers mentioned on the seats.
- Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) - Sharing is prohibited
- Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
- Students must not possess any written material or communicate with their fellow students
- Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
- **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

11.2 ASSESSMENT

11.2.1 Internal: Total 10% (20 marks)

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
 - **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
 - **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:

- NOTE: at least 75% attendance is mandatory to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

11.2.2 University Annual Exam: Total 90%

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

11.3 METHODS OF ASSESSMENT

11.3.1 Multiple Choice Questions

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

11.3.2 Short Essay Questions (SEQs):

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

11.3.3 OSPE / OSCE

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas

- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
 - Interactive Stations:
 - In this station, examiner ask questions related to the task within the allocated time.
 - Observed Stations:
 - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
 - Unobserved (static) Stations:
 - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
 - Rest station
 - It is a station where there is no task given and in this time student can organize his/her thoughts

11.3.4 ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

11.3.5 WEEKLY TESTS

- The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

- The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.
- It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.
- Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

11.3.6 POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD
- Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class
- PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

12. GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable

13. ASSESMENT BLUEPRINT

OPHTHALMOLOGY MODULE

Assessment is based on Table of Specification (TOS)

	ASSESMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

14. RECOMMENDED BOOKS

OPHTHALMOLOGY

- **CLINICAL OPHTHALMOLOGY TEXT AND ATLAS**
SHAFI JATOI
6TH EDITION
- **PARSONS' DISEASES OF THE EYE**
RAMANJIT SIHOTA, RADHIKA TANDON
23RD EDITION
- **VAUGHAN & ASBURY'S GENERAL OPHTHALMOLOGY**
PAUL RIORDAN-EVA, JAMES J. AUGSBURGER
19TH EDITION
- **COMPREHENSIVE OPHTHALMOLOGY**
A K KHURANA
6th EDITION

PHARMACOLOGY

- **LIPPINCOTT ILLUSTRATED REVIEWS: PHARMACOLOGY**
KAREN WHALEN, CARINDA FEILD, RAJAN RADHAKRISHNAN
7TH EDITION

PATHOLOGY

- **ROBBINS & COTRAN PATHOLOGIC BASIS OF DISEASE**
VINAY KUMAR, ABUL K. ABBAS, JON C. ASTER
10TH EDITION

COMMUNITY MEDICINE

- **PARK'S TEXTBOOK OF PREVENTIVE AND SOCIAL MEDICINE**

K. PARK
26TH EDITION

PHYSIOLOGY

- **GUYTON AND HALL TEXTBOOK OF MEDICAL PHYSIOLOGY**
GUYTON AND HALL
13TH EDITION

ANATOMY

- **CLINICALLY ORIENTED ANATOMY**
KEITH.L. MOORE, ARTHUR F. DALLEY, ANNE M.R. AGUR
7TH OR LATEST EDITION

- **GRAY'S ANATOMY FOR STUDENTS**
DRAKE & VOGL & MITCHELL
3RD OR LATEST EDITION



IBN-E-SINA UNIVERSITY MIRPURKHAS
FACULTY OF BASIC MEDICAL SCIENCES



Course Feedback Form

Course Title: _____

Semester/Module _____ Dates: _____

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

THE DESIGN OF THE MODLUE

- A. Were objectives of the course clear to you? Y N
- B. The course contents met with your expectations
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with
l. Too few examples 5. Adequate examples
- E. The level of the course was
l. Too low 5. Too high
- F. The course contents compared with your expectations
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?
l. Not at all 5. Very strongly

THE CONDUCT OF THE MODLUE

- A. The lectures were clear and easy to understand
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes No

F. Please give overall rating of the course

90% - 100% ()

60% - 70% ()

80% - 90% ()

50% - 60% ()

70% - 80% ()

below 50% ()

Please comment on the strengths of the course and the way it was conducted.

Please comment on the weaknesses of the course and the way it was conducted.

Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

Thank you!!

STUDENT'S STUDY GUIDE
ENT MODULE
FOURTH PROFESSIONAL MBBS



TABLE OF CONTENTS

Sr. No	Contents
1.	DISCLAIMER
2.	CURRICULUM FRAMEWORK
3.	MODEL OVERVIEW
4.	WHAT IS STUDY GUIDE
5.	LEARNING METHODOLOGIES
6.	INTRODUCTION
7.	LEARNING OBJECTIVES
8.	THEMES
9.	SPECIFIC LEARNING OBJECTIVES
10.	TEACHING HOURS ALLOCATION
11.	EXAMINATION AND METHODS OF ASSESSMENT
12.	GRADING POLICY
13.	ASSESSMENT BLUEPRINT
14.	RECOMMENDED BOOKS

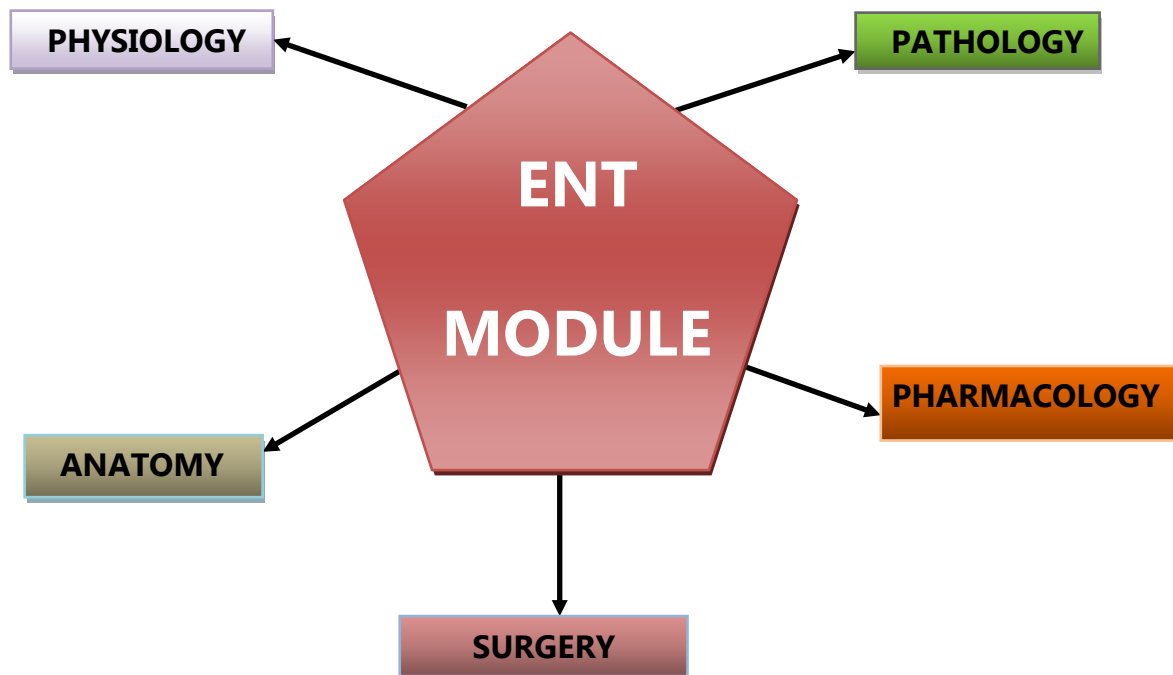
1. DISCLAIMER

- Developing a study guide is a dynamic process and undergoes iteration according to the needs and priorities.
- This study guide is subjected to the change and modification over the whole academic year.
- However, students are advised to use it as a guide for respective modules.
- The time tables are for guiding purpose. It is to advise that final timetables are always displayed over the notice boards of each lecture hall.
- Students are encouraged to provide feedback via coordinator

2. CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Eye, ENT, Endocrine and Reproduction-III, Git and Hepatobilliary-III, Neuroscience-II and Renal-II modules which link basic science knowledge to clinical problems.



3. MODULE OVERVIEW

ENT MODULE DETAILS

Course	MBBS
Year	Fourth professional
Duration	6 weeks
Learning Outcomes	The competent Medical Practitioner
Competencies covered	To develop medical professionals who are well - versed, adept, and have the right mindset.
Module Assessment	End module formative assessment
Teaching Methods	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
Assessment Methods	MCQs, SEQs, OSPE, VIVA

ENT MODULE COMMITTEE

Sr. No	Names	Department	Designation
MODULE COORDINATOR			
1.	Prof: Dr. Allah Bachayo Rajar	Community Medicine	Professor
COMMITTEE MEMBERS			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

4. WHAT IS STUDY GUIDE

It is an aid to Inform students how student learning program of the module has been organized, to help students organize and manage their studies throughout the module and guide students on assessment methods, rules and regulations.

The study guide:

- Communicates information on organization and management of the module.
- This will help the student to contact the right person in case of any difficulty.
- Defines the objectives which are expected to be achieved at the end of the module.
- Identifies the learning strategies such as lectures, small group teachings.

Module objectives.

- Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- Highlights information on the contribution of continuous on the student's overall performance.
- Includes information on the assessment methods that will be held to determine every student's performance.

Achievement of objectives.

- Focuses on information pertaining to examination policy, rules and regulations.

5. LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations
- Skills session
- Practicals
- Self-Directed Study

• **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

• **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

• **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

• **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to pharmacology, microbiology, forensic medicine, and community medicine have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

6. INTRODUCTION

Welcome to the ENT module. This fascinating session will act as a foundation and is crucial to your future practice as physicians. This module includes a number of interactive tasks that are meant to make your learning engaging and fruitful. As a general trend, disease burden is increasing with passage of time and is also true for common ENT problems. According to a local study, the highest incidence is noted for ear diseases; especially discharging ear, followed by nose (rhinosinusitis) and throat (sore throat) respectively with a general increasing trend over the past decade (Z. Awan, 2009). So this module is designed to specifically address the basic needs of medical students as graduating doctors, enabling them to diagnose and treat common everyday diseases of ear, nose and throat and contribute to better overall health care.

6.1 RATIONALE

The head, neck, and ear regions are home to some of the most prevalent disorders that general practitioners treat. A medical graduate ought to be well-versed in the diagnosis, treatment, and symptomatology of ENT disorders. They should be able to address some common issues, order and interpret relevant investigations, and, where necessary, make appropriate referrals.

The fundamental sciences spiral's Head and Neck module has given students background information on the anatomy, physiology, and basic pathology of this area. The student will get the clinical knowledge necessary for the diagnosis and treatment of disorders pertaining to the ear, nose, and throat based on this foundation.

6.2 IBN E SINA UNIVERSITY (ISU) VISION:

To become a world-leading organization in rural health and social care research, training, recruitment and best evidence-based practice.

6.3 IBN E SINA UNIVERSITY (ISU) MISSION:

Our Mission is to inspire hope, and contribute to health and well-being by providing the best care to every patient through integrated clinical practice, education and research. To provide a focal point for the development and collation of high-quality research pertinent to rural health and wellbeing. To improve the training, recruitment and retention of a professional workforce within rural communities. To be recognized as an exemplar in rural health and wellbeing on the international stage. To establish a network of individuals and groups that support research, innovation and development in rural health and social care.

7. LEARNING OBJECTIVES

7.1 General learning Objectives:

By the end of this module, the students should be able to:

1. Knowledge and understanding of the structures and functions of the ear, nose and throat with application to clinical practice, integrating basic science knowledge to solve and manage common related diseases in community
2. Knowledge and understanding of the origin and associated risk factors of common diseases of ear, nose and throat and application in real context
3. Application of knowledge in management and prevention of common pathologies of ear, nose and throat
4. Practice of basic skills used to diagnose and treat diseases in a simulated clinical setting.
5. Knowledge of drugs used to treat ear, nose and throat diseases and their application

7.2 Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Describe the anatomy of the throat, nose, and ears.
2. Remember the physiology of smell and hearing.
3. Talk about the etiology, diagnosis, clinical manifestations, and treatment of disorders affecting the middle, outer, and inner ears.
4. Examine the pathophysiology of the salivary, oropharyngeal, and hypopharyngeal regions.
5. Describe benign and malignant tumors involving the ENT and Head & Neck.
6. Assist in diagnostic procedures and take swab for culture and sensitivity from ear, Nose & throat under supervision.
7. Prescribe hematological investigations, x-ray paranasal sinuses, CT/MRI scan of paranasal sinuses, temporal bone and Head & Neck & interpret it.
8. Perform clinical tests of hearing, tuning fork tests and balance independently
9. Interpret pure tone audiogram & tympanogram.
10. Describe the ABC protocol for resuscitation of traumatic patients.
11. Discuss differential diagnosis of membrane on the tonsils and describe diphtheria.
12. Describe sialadenitis, sialolithiasis and enumerate the benign and malignant salivary tumors.
13. Discuss a treatment plan for the patients with various common diseases of the ENT and Head and Neck region.
14. Describe dysphagia and its causes, Plummer-Vinson Syndrome and malignant tumors of hypopharynx that could lead to dysphagia and hoarseness along with their management.

15. Describe the management of corrosive ingestion and foreign body in the esophagus.
16. Describe various congenital and acquired disorders of the ENT and Head & Neck region.
17. Describe the significance of hoarseness and stridor & enumerate their causes and clinical features of respiratory obstruction.
18. Differentiate clinically between various types of stridor and possible site of obstruction.
19. Describe tracheostomy and indications for this procedure.
20. Describe squamous cell carcinoma of the larynx and the impact of stage of disease on management and survival of patient.
- 21.
22. Explain the mutual association of hearing and balance disorders & the various conditions that give rise to these disorders.
23. Describe the clinical features and course of otosclerosis, Meniere's disease, vestibular neuronitis & BPPV.
24. Diagnose suppurative otitis media & describe its intracranial and extra cranial complications.
25. Describe the 'rehabilitation of deaf and mute child' and the impact of hearing impairment in children.
26. Describe rhinosinusitis, its various types of rhino-sinusitis and its complications.
27. Describe the diseases of the nasal septum & define DNS and enumerate its various types.
28. Describe the pathophysiology, types, and management of Sino nasal polyposis.
29. Enumerate various conditions resulting in nasal obstruction & discharge.
30. Describe various types of allergic & non-allergic rhino-sinusitis.
31. Enumerate fungal and other granulomatous diseases of the nose & paranasal sinuses and describe their management.
32. Categorize various conditions benign & malignant neoplasms of the nose & paranasal sinuses.
33. Classify various types of neck swellings and describe clinical differentiating features of benign & malignant neck masses.
34. Describe a classification of various lymph nodes levels in the neck and describe the lymphatic drainage of the head and neck.
35. Obtain informed consent from patient and communicate with the patients, their families and community regarding diseases & its relevant issues.
36. Describe the anatomy and physiology of salivary glands
37. Describe benign & malignant diseases of the salivary glands

7.3 Skills / Psychomotor Domain:

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

1. Observation and Assistance
2. Performing the skill under supervision
3. Performing the skill independently
4. Analyze the consequences of the nose trauma.
5. Identify and talk about the management of neoplastic disorders affecting the larynx, esophagus, and mouth cavity.
6. Examine the issues brought on by foreign objects in the nose and inner ear, and talk about how to treat them.
7. Give an example of when a tracheostomy is necessary and describe the process.
8. Obtain appropriate history, examine Ear, Nose, oral cavity, pharynx, larynx and Neck including mirror examinations and functional examinations of these areas.

7.4 Attitude / Affective Domain:

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

1. Respect oneself and one's peers, both when providing and receiving comments.
2. To show patients compassion and understanding.
3. Develop your ability to communicate while keeping a sense of duty to your patients.
4. Showcase appropriate laboratory procedures.
5. Relate to patient and careers vulnerability
6. Demonstrate ethical self-management
7. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
8. Display compassion with patient and colleagues
9. Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease

7.5 Outcomes of ENT Module

1. Knowledgeable
2. Skillful
3. Community Health Promoter
4. Problem-solver
5. Professional
6. Researcher
7. Leader and Role Model

8. THEMES FOR ENT MODULE

SNO	Themes	Duration
1	Sore Throat	1 week
2	Difficulty in Swallowing	1 week
3	Hoarseness & Stridor	1 week
4	Deafness, Ear Discharge & Dizziness	1 week
5	Nasal Obstruction	1 week
6	Swelling Neck	1 week

9. SPECIFIC LEARNING OBJECTIVES THEME WISE

Theme 1 – Sore Throat					
Sr. No	Lecture Topic	Topic Objectives	Teaching Hours	Teaching Method	Assessment Tool
1.	Anatomy & physiology of oral cavity, Pharynx & salivary glands	<ul style="list-style-type: none"> Discuss the anatomy of oral cavity and siteclassification of oral cavity. Discuss applied anatomy of pharynx & mechanismof deglutition Discuss applied anatomy of nasopharynx andanatomy and physiology of adenoids Discuss applied anatomy of oropharynx and anatomy and physiology of pharyngeal tonsils Discuss the anatomy of minor and major salivary glands 	2 hours	Interactive Lecture SGD	MCQs, SEQs, OSCE
2.	Acute Pharyngitis	Discuss classification, types, aetiology, clinical features, diagnosis and treatment of acute pharyngitis	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
3.	Chronic Pharyngitis	Discuss classification, types, aetiology, clinical features, diagnosis and treatment of chronicpharyngitis	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
4.	Acute Tonsillitis/ Peritonsillar abscess (Quinsy)	<ul style="list-style-type: none"> Discuss classification, types, aetiology, clinical features, diagnosis and treatment of acute tonsillitis Discuss the aetiology, clinical features andtreatment of quinsy 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
5.	Chronic Tonsillitis	Discuss classification, types, aetiology, clinical features, diagnosis and treatment of chronic tonsillitis	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
6.	Oral ulceration	Enumerate differential diagnosis of oral ulcers anddiscuss management of Aphthous ulcers	1 hours	Interactive Lecture SGD	MCQs, SEQs, OSCE
7.	Trauma to the palate and Oropharynx	Discuss the principles of soft tissue & bone repair inpalatal and pharyngeal trauma.	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
8.	Carcinoma of oral cavity	Discuss the aetiology , clinical features and treatmentof oral carcinoma	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

9.	Approach to a patient with sore throat	Enumerate differentials of sore throat and discuss important differentiating points	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
10.	Anatomy & physiology of salivary glands	Describe the anatomy & physiology of parotid, submandibular, sublingual & minor salivary glands	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
11.	Non neoplastic disorders of the salivary glands	Describe non neoplastic disorders of salivary glands, its management and treatment	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
12.	Sialolithiasis and sialectasis	Describe stone formation and stasis of secretions in the salivary glands and its management	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
13.	Neoplasm of salivary glands	Describe the features, course and management of benign and malignant, submandibular, sublingual and minor salivary glands	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
14.	Complications of salivary gland surgeries	Describe in detail different surgical procedures of salivary glands and its complications	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

Theme 2 - Difficulty in Swallowing

Sr. No.	Lecture Topic	Topic Objectives	Teaching Hours	Teaching Method	Assessment Tool
1.	Dysphagia & Plummer Vinson Syndrome	<ul style="list-style-type: none"> • Discuss Dysphagia & the anatomy and physiology of Esophagus and the appropriate medical and surgical treatment of dysphagia. • Discuss PVS & the predisposing factors for causation & management 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
2.	Pharyngeal and esophageal Pouches	Discuss Pharyngeal pouch & the predisposing factors, clinical features, and treatment.	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
3.	Oropharyngeal Tumors	<ul style="list-style-type: none"> • Enumerate oropharyngeal tumors. • Discuss the types, aetiology and treatment of oropharyngeal carcinoma. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
4.	Hypopharyngeal Tumors	<ul style="list-style-type: none"> • Enumerate oropharyngeal tumors. • Discuss the aetiology and treatment of hypopharyngeal carcinoma. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
5.	Tumors of Esophagus.	Classify esophageal tumors & describe the etiology, clinical features, and treatment options.	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

Theme 3 - Hoarseness & Stridor

Sr. No.	Lecture Topic	Topic Objectives	Teaching Hours	Teaching Method	Assessment Tool
1.	Applied anatomy of potential spaces in & around the larynx and neck	<ul style="list-style-type: none"> Discuss applied anatomy of larynx. Discuss the pre-piglottic, paraglottic & Rinke's space. 	2 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
2.	Anatomy of Potential neck spaces	<ul style="list-style-type: none"> Discuss anatomy of deep fascia of neck & anatomy of potential pharyngeal and neck spaces. Discuss surgical anatomy of peritonsillar, parapharyngeal & submandibular spaces. Discuss anatomy of retro pharyngeal space 	3 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
3.	Applied anatomy & physiology of Larynx/neck , Voice physiology	<ul style="list-style-type: none"> Discuss applied anatomy of Larynx. Discuss the physiology of larynx. Discuss the physiology of voice, speech production & its regulation 	2 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
4.	Acute Laryngitis	Discuss aetiology, clinical features, diagnosis, and treatment of acute simple laryngitis	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
5.	Chronic Laryngitis	Discuss chronic laryngitis including chronic granulomatous conditions of the larynx, its clinical features, diagnosis, and treatment.	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
6.	Vocal nodules & vocal polyps	Discuss differentiating points between vocal nodules & polyps, its aetiology, clinical features, diagnosis, and treatment.	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
7.	Vocal cord paralysis	Discuss paralytic causes of hoarseness, its types, clinical features, diagnosis, and treatment.	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
8.	Stridor	Enumerate causes of stridor. Explain types of stridor. Discuss management of congenital stridor	1 hours	Interactive Lecture SGD	MCQs, SEQs, OSCE

9.	Apyrexial causes of stridor	Discuss the aetiology and management of acquired apyrexial causes of stridor	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
10.	Pyrexial causes	Discuss the aetiology and management of pyrexial causes of stridor	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
11.	Laryngeal trauma	Discuss the management of laryngeal trauma	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
12.	Acute Respiratory obstruction	Discuss signs of respiratory obstruction. Enumerate alternate airways & discuss tracheostomy.	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
13.	Laryngotrachea Foreign body	Discuss the aetiology, types & treatment of Laryngotracheal Foreign bodies.	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
14.	Malignant Tumours of the Larynx / Carcinoma of Larynx	<ul style="list-style-type: none"> • Discuss incidence, epidemiology, risk factors, Pathology & classification of carcinoma larynx. • Discuss UICC classification of laryngeal sites & subsites. Discuss management of carcinoma of all the subsites 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
15.	Approach to a patient with hoarseness	Discuss the differential diagnosis of hoarseness and explain management approach to a patient presenting with hoarseness	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

Theme 4 - Deafness, Ear Discharge & Dizziness

Sr. no.	Lecture Topic	Topic Objectives	Teaching Hours	Teaching Method	Assessment Tool
1.	Applied Anatomy and Physiology of Ear	<ul style="list-style-type: none"> • Describe the applied anatomy of the external, middle & internal ear. • Discuss the functions of the ear. • Discuss basic principles & interpretation of various tuning fork tests. • Discuss the interpretation of PTA & impedance audiometry 	2 hours	Interactive Lecture SGD	MCQs, SEQs, OSCE
2.	Trauma to External Ear and the Temporal Bone	<ul style="list-style-type: none"> • Classify the trauma to external ear and the temporal bone. • Describe the appropriate imaging investigations & treatments. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
3.	Otitis Externa	<ul style="list-style-type: none"> • Discuss Otitis Externa, its clinical features, differential diagnosis and relevant clinical & radiological investigations and treatment. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
4.	Acute Suppurative otitis media	<ul style="list-style-type: none"> • Discuss acute suppurative otitis media. • Describe its clinical features, differential diagnosis and relevant clinical & radiological investigations and treatment 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
5.	Chronic Suppurative Otitis Media without cholesteatoma	<p>Discuss Chronic Suppurative Otitis Media and its clinical features, differential diagnosis and relevant clinical & radiological investigations and treatment.</p>	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
6.	Chronic Suppurative Otitis Media with Cholesteatoma	<ul style="list-style-type: none"> • Discuss cholesteatoma and its clinical features, differential diagnosis and relevant clinical & radiological investigations and 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

		treatment.			
7.	Complications of Suppurative Otitis Media.	<ul style="list-style-type: none"> Discuss intracranial & extracranial otogenic complications and enumerate the appropriate clinical & radiological investigations and treatment. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
8.	Mastoiditis: Acute and Chronic	<ul style="list-style-type: none"> Discuss mastoiditis, its clinical features, differential diagnosis and relevant clinical & radiological investigations and treatment. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
9.	Acoustic Neuroma	<ul style="list-style-type: none"> Discuss acoustic neuroma & the appropriate clinical, audiological, and imaging studies used in diagnosis and treatment of acoustic neuroma. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
10.	Approach to patient with a Conductive hearing loss	<ul style="list-style-type: none"> Discuss the differential diagnosis of hearing loss & the medical and surgical management of CHL. Discuss otosclerosis & its medical & surgical treatment of otosclerosis. Discuss OME & its medical and surgical treatment 	2 hours	Interactive Lecture SGD	MCQs, SEQs, OSCE
11.	Approach to patient with a Sensorineural Hearing Loss (SNHL)	<ul style="list-style-type: none"> Discuss SNHL & its differential diagnosis. Discuss tinnitus & its management. Discuss Ototoxicity & its management. 	2 hours	Interactive Lecture SGD	MCQs, SEQs, OSCE
12.	Vertigo Vestibular Neuritis Meniere's Diseases BPPV	<ul style="list-style-type: none"> Discuss true vertigo & its types, pathophysiology, investigations & management. Discuss Meniere's disease & its treatment. Discuss BPPV & its clinical features, diagnoses & treatment. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

13.	Approach to a deaf patient	<ul style="list-style-type: none"> Discuss the approach to a deaf patient. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
14.	Approach to Management of Deaf Child	<ul style="list-style-type: none"> Differentiate congenital, developmental, and acquired hearing loss & describe the impact of hearing impairment at various ages and their management. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

Theme 5 - Nasal Obstruction

Sr. No.	Lecture Topic	Topic Objectives	Teaching Hours	Mode of Teaching	Assessment Tool
1.	Applied Anatomy, Physiology of Nose & Paranasal Sinuses	<ul style="list-style-type: none"> Discuss the surgical anatomy, physiology & congenital disorders of the nose & PNS. Discuss the congenital disorders of the nose, palate & choanal atresia 	2 hours	Interactive Lecture SGD	MCQs, SEQs, OSCE
2.	Diseases of the Nasal Septum	<ul style="list-style-type: none"> Discuss DNS, its types, the clinical features, medical & surgical treatment of nasal obstruction. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
3.	Sino-Nasal Polyposis	<ul style="list-style-type: none"> Discuss sino-nasal polyposis, its types and describe the clinical features, medical & surgical treatment of nasal polyps. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
4.	Fungal Rhinosinusitis	<ul style="list-style-type: none"> Discuss various fungi implicated in fungal rhinosinusitis and the appropriate clinical, radiological investigations and treatment of fungal rhinosinusitis. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
5.	Sino-Nasal Tumors	<ul style="list-style-type: none"> Discuss various benign and malignant tumors affecting the nose and paranasal sinuses and their clinical features, step involved in diagnosis and treatment options 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
6.	Trauma to Nose and Face and CSF rhinorrhea	<ul style="list-style-type: none"> Discuss the Le Forte classification of mid face fractures & the appropriate clinical and radiological investigations & management of these fractures. Discuss CSF rhinorrhea and the predisposing factors, types, clinical features, investigations and treatment. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
7.	Headaches and Facial Pain	<ul style="list-style-type: none"> Discuss rhinogenic headaches and the appropriate clinical, radiological investigations and treatment. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
8.	Granulomatous Diseases of the Nose	<ul style="list-style-type: none"> Discuss various granulomatous disorders affecting the nose & the clinical features, investigations & treatments. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

9.	Adenoids	<ul style="list-style-type: none"> Discuss anatomy diseases of adenoids and treatment 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
10.	Juvenile Nasopharyngeal Angiofibroma	<ul style="list-style-type: none"> Enumerate diseases of the nasopharynx. Discuss Juvenile nasopharyngeal angiofibroma, clinical features, investigations and treatment. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
11.	Nasopharyngeal Carcinoma	<ul style="list-style-type: none"> Discuss the risk factor, clinical features, investigation, treatment and follow up nasopharyngeal carcinoma 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
12.	Acute Sinusitis	<ul style="list-style-type: none"> Discuss acute sinusitis & the appropriate clinical, radiological investigations and steps involved in treatment of patients. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
13.	Chronic Sinusitis	<ul style="list-style-type: none"> Discuss chronic sinusitis & the appropriate clinical, radiological investigations and steps involved in treatment of patients. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
14.	Complications of Sinusitis	<ul style="list-style-type: none"> Enumerate the predisposing factors for development of complications due to sinusitis. Discuss treatment. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
15.	Allergic Rhinitis (AR) and Non-allergic	<ul style="list-style-type: none"> Discuss allergic rhinitis and its types, pathophysiology, investigations & the medical and surgical treatment. Discuss non-allergic rhinitis and the appropriate clinical and radiological investigations and its treatment. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
16.	Infective Rhinitis: Acute. & Chronic.	<ul style="list-style-type: none"> Discuss infective rhinitis and the medical and surgical treatment of various types of acute and chronic infective rhinitis. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

17.	Foreign Body, Rhinolith, Maggots Nose	<ul style="list-style-type: none"> Discuss Rhinolith and maggots in the nose and the appropriate medical and surgical treatment of patients with these conditions. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
18.	Approach to a patient with Epistaxis	<ul style="list-style-type: none"> Approach to a patient with epistaxis Discuss epistaxis & the appropriate clinical, radiological & hematological investigations & treatment of the condition. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
RADIOLOGY					
1.	Head X-ray	<ul style="list-style-type: none"> Identify radiological findings of nasal disorders 	2 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

Theme 6 - Neck Swelling

Sr. No.	Lecture Topic	Topic Objectives	Teaching Hours	Mode of Teaching	Assessment Tool
1.	Para pharyngeal Abscess	<ul style="list-style-type: none"> • Discuss the aetiology and management of each Para pharyngeal abscess. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
2.	Retropharyngeal Abscess	<ul style="list-style-type: none"> • Discuss the types, aetiology, treatment and complications of each retropharyngeal abscess. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
3.	Submandibular Abscess	<ul style="list-style-type: none"> • Discuss the causes and treatment of submandibular abscess. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
4.	Trauma of the Larynx and Neck	<ul style="list-style-type: none"> • Classify the nature of trauma to the neck & larynx. • Discuss clinical features, investigations and treatment. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
5.	Approach to a neck swelling	<ul style="list-style-type: none"> • Discuss the approach to a neck swelling. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE
6.	Evaluation of metastatic lymph nodes and occult primary in Neck (Occult Primary).	<ul style="list-style-type: none"> • Discuss Occult primary & the predictable nodal drainage in head and Neck region. • Discuss the signs and symptoms of occult primary & the appropriate clinical and radiological investigations & different treatment options. 	1 hour	Interactive Lecture SGD	MCQs, SEQs, OSCE

CLINICAL ROTATION ENT 4TH YEAR MBBS

Theme 1 - Foundation of Otorhinolaryngology & Head and Neck				
S.No	Topic	Learning Objectives	Assessment Method	Clinical Hours
1.	History taking	Obtain detailed history of sore throat	OSCE	01
2.	Examination	Perform Examination in a sore throat patient including general physical, local and systemic examination	OSCE	02
3.	Nasopharyngeal examination	Perform mirror examination of nasopharynx	OSCE	02
4.	Examination of oral cavity and oropharynx	Examine oral cavity and oropharynx in a systematic way	OSCE	02
5.	Hypopharyngeal Examination	Perform Indirect hypopharyngoscopy with mirror	OSCE	01
6.	Mouth gauge and other instruments	Assemble mouth gauge and name the instrument used in tonsillectomy with utility of each instrument.	OSCE	01
7.	Examination of Neck	Perform systematic examination of Neck	OSCE	02

Theme 2 - Sore Throat

Sr. No.	Topic	Learning Objectives	Assessment Method	Clinical Hours
1.	Communicate with patient of tonsillectomy	Obtain a pre-operative informed consent from a patient of tonsillectomy	OSCE	01
2.	Tonsillar surgery & its instruments	Observe tonsillectomy surgery and identify instruments used	OSCE	02
3.	Conservative management of sore throat	Discuss a conservative management plan for inpatient acute follicular tonsillitis	OSCE	01
4.	Scrubbing technique	Demonstrate scrubbing hands using proper solution & take proper time by proper method	OSCE	01
5.	Biopsy from oral ulcer	Assist to take a biopsy from tongue ulcer	OSCE	01

Theme 3 - Difficulty in Swallowing

Sr. No.	Topic	Learning Objectives	Assessment Method	Clinical Hours
1.	Rigid Endoscopy system	Identify instruments & equipment used in rigid endoscopy system, describe rigid endoscopies.	OSCE	01
2.	Oral & oropharyngeal mass palpation	How to palpate a mass in the oral cavity and oropharynx	OSCE	01
3.	Oesophagoscopy	Observe rigid oesophagoscopy done for pharyngeal growth or dysphagia	OSCE	02

Theme 4 - Hoarseness and Stridor

Sr. No.	Topic	Learning Objectives	Assessment Method	Clinical Hours
1.	History taking	Obtain detailed history of hoarseness & stridor	OSCE	02
2.	Examination	Perform Examination in a patient with hoarseness & stridor, including general physical, local and systemic examination	OSCE	02
3.	Indirect laryngoscopy examination	Perform mirror examination of Laryngopharynx	OSCE	01
4.	Examination of Neck	Perform systematic examination of Neck	OSCE	01
5.	Investigations of Laryngeal diseases	Fill requisition form for different types of investigations for Laryngeal diseases.	OSCE	01
6.	Video laryngoscopy	Observe a video of laryngoscopy for the diagnosis of hoarseness in clinical setting	OSCE	01
7.	Conservative management of Hoarseness	Discuss a conservative management plan for a patient of hoarseness due to voice abuse.	OSCE	01
8.	Laryngoscopy	Observe rigid system laryngoscopy under general anesthesia and identify instruments used in the procedure	OSCE	02
9.	Communicate with patient for voice rest	Counsel a patient on voice rest	OSCE	01

10.	Stridor in bilateral abductor vocal paralysis	Council bilateral abductor paralysis patient & its management in a post thyroidectomy patient	OSCE	02
11.	Biopsy from laryngeal growth.	Observe the procedure for taking biopsy from laryngeal growth.	Formative	01
12.	Tracheostomy	Demonstrate the procedure of tracheostomy	Formative	01
13.	Communicate with patient on laryngectomy	Demonstrate the procedure how to Obtain informed consent from a patient for total laryngectomy	OSCE	01

Theme 5 - Deafness, Ear Discharge & Dizziness

Sr. No.	Topic	Learning Objectives	Assessment Method	Clinical Hours
1.	History taking	Obtain detailed history from a patient with ear discharge/deafness/dizziness	OSCE	02
2.	Local Examination	Perform clinical examination of the hearing & balance system.	OSCE	01
3.	Otoscopy Tuning fork test Balance testing Examination under microscope	<ul style="list-style-type: none"> • Perform otoscopic examination of the ear • Perform tuning fork tests • Perform test of balance, peripheral & central • Assist in performing EUM 	OSCE	03
4.	Investigations of ear diseases	Discuss & fill requisition form for different types of investigations for ear diseases.	OSCE	01
5.	Interpretation of audiogram and Impedance	Discuss the interpretation of audiogram and impedance.	OSCE	01

Theme VI - Nasal Obstruction

Sr. No.	Topic	Learning Objectives	Assessment Method	Clinical Hours
1.	History taking	Obtain detailed history from a patient with nasal obstruction	OSCE	02
2.	Local Examination	Perform clinical examination of the nose & paranasal sinuses.	OSCE	01
3.	Anterior & posterior Rhinoscopy	Perform anterior & posterior Rhinoscopies with mirror		
4.	Probe test	Perform probe test		
5.	Nasendoscopy	Assist in performing nasendoscopy.	OSCE	01
6.	Pus culture / sensitivity	Perform Take swab from nose for different purpose	OSCE	01
7.	X – Rays nasopharynx /PNS	interpret X – Rays nasopharynx/PNS for enlarged soft tissues shadow		
8.	Nasal patency & adenoid facies in enlarged adenoids	Perform examination for nasal patency in enlarged adenoids.	OSCE	01
9.	Adenoid surgery	Observe adenoid surgery being done in operating room	Formative	01
10.	CT scan nose & nasopharynx	Interpret CT scan in nasopharyngeal angiofibroma, describe bowing sign.	Formative	01
11.	Nasopharyngeal Biopsy	Observe surgery for nasopharyngeal biopsy	Formative	01
12.	Investigations of nose & paranasal sinuses diseases	Document Fill requisition form for different types of investigations for nose & paranasal sinuses diseases.	Formative	01

Theme VII - Swelling Neck

Sr. No.	Topic	Learning Objectives	Assessment Method	Clinical Hours
1.	Examination of Neck Nodes	Perform systematic examination of all groups of neck nodes	OSCE	02
2.	Examination of lump in the neck	Perform examination of lump in the neck in a systematic way.	OSCE	01
3.	Surgery on a pharyngeal abscess	Observe surgery on a pharyngeal abscess & describe drainage of peritonsillar abscess	OSCE	01
4.	Thyroid examination	Perform Thyroid Examination both anatomically & functionally	OSCE	01
5.	Pharyngeal abscess surgery related instruments	Identify instruments used in drainage of pharyngeal abscess surgery	OSCE	01
6.	Examination of parotid	Perform examination of parotid swelling	OSCE	01
7.	Examination of thyroid	Perform examination of thyroid gland	OSCE	01

9.1 CLINICAL SCIENCES SUBJECT

ENT				
S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	FAMILY MEDICINE	Sleep Problems (snoring, OSA)	1	Lecture
	Common ENT Complains	Rhinitis	1	Lecture
		Sinusitis	1	Lecture
		Age related deafness	1	Lecture
		Hoarseness of voice	1	Lecture

10. TEACHING HOURS ALLOCATION

Themes	Total Hours	In class teaching (Hours)	Clinical (Hours)
Theme 01: Foundation of Otorhinolaryngology & Head and Neck	11	---	11
Theme 02: Sore Throat	21	15	06
Theme 03: Difficulty in Swallowing	09	05	04
Theme 04: Hoarseness & Stridor	36	19	17
Theme 05: Deafness, Ear Discharge & Dizziness	27	20	08
Theme 06: Nasal Obstruction	29	19	10
Theme 07: Swelling Neck	14	06	08
Family Medicine	5	5	-
Total	152	89	64

11. EXAMINATION AND METHODS OF ASSESSMENT

11.1 EXAMINATION RULES AND REGULATIONS

- Student must report to examination hall/venue, in time for smooth conduction of the exams.
- No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
- No students will be allowed to sit in exam without College ID Card, and Lab Coat
- Students must sit according to their roll numbers mentioned on the seats.
- Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) - Sharing is prohibited
- Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
- Students must not possess any written material or communicate with their fellow students
- Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
- **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

11.2 ASSESSMENT

11.2.1 Internal: Total 10% (20 marks)

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
 - **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
 - **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:

- NOTE: at least 75% attendance is mandatory to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

11.2.2 University Annual Exam: Total 90%

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

11.3 METHODS OF ASSESSMENT

11.3.1 Multiple Choice Questions

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

11.3.2 Short Essay Questions (SEQs):

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

11.3.3 OSPE / OSCE

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas

- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
 - Interactive Stations:
 - In this station, examiner ask questions related to the task within the allocated time.
 - Observed Stations:
 - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
 - Unobserved (static) Stations:
 - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
 - Rest station
 - It is a station where there is no task given and in this time student can organize his/her thoughts

11.3.4 ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

11.3.5 WEEKLY TESTS

- The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

- The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.
- It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.
- Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

11.3.6 POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD
- Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class
- PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

12. GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable

13. ASSESMENT BLUEPRINT

ENT MODULE

Assessment is based on Table of Specification (TOS)

	ASSESMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

10. RECOMMENDED BOOKS

ENT

- **DISEASES OF EAR, NOSE AND THROAT**
LOGAN TURNER
11TH EDITION
- **LECTURE NOTES EAR, NOSE AND THROAT NOTES**
P.D BULL
10th EDITION
- **DISEASES OF EAR, NOSE AND THROAT**
P.L. DHINGRA
6TH EDITION
- **COMPREHENSIVE OPHTHALMOLOGY**
A K KHURANA
6th EDITION

PHARMACOLOGY

- **LIPPINCOTT ILLUSTRATED REVIEWS: PHARMACOLOGY**
KAREN WHALEN, CARINDA FEILD, RAJAN RADHAKRISHNAN
7TH EDITION

PATHOLOGY

- **ROBBINS & COTRAN PATHOLOGIC BASIS OF DISEASE**
VINAY KUMAR, ABUL K. ABBAS, JON C. ASTER
10TH EDITION

COMMUNITY MEDICINE

- **PARK'S TEXTBOOK OF PREVENTIVE AND SOCIAL MEDICINE**
K. PARK
26TH EDITION

PHYSIOLOGY

- **GUYTON AND HALL TEXTBOOK OF MEDICAL PHYSIOLOGY**
GUYTON AND HALL
13TH EDITION

ANATOMY

- **CLINICALLY ORIENTED ANATOMY**
KEITH.L. MOORE, ARTHUR F. DALLEY, ANNE M.R. AGUR
7TH OR LATEST EDITION

- **GRAY'S ANATOMY FOR STUDENTS**
DRAKE & VOGL & MITCHELL
3RD OR LATEST EDITION



IBN-E-SINA UNIVERSITY MIRPURKHAS
FACULTY OF BASIC MEDICAL SCIENCES



Course Feedback Form

Course Title: _____

Semester/Module _____ Dates: _____

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

THE DESIGN OF THE MODLUE

- A. Were objectives of the course clear to you? Y N
- B. The course contents met with your expectations
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with
l. Too few examples 5. Adequate examples
- E. The level of the course was
l. Too low 5. Too high
- F. The course contents compared with your expectations
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?
l. Not at all 5. Very strongly

THE CONDUCT OF THE MODLUE

- A. The lectures were clear and easy to understand
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes No

F. Please give overall rating of the course

90% - 100% ()

60% - 70% ()

80% - 90% ()

50% - 60% ()

70% - 80% ()

below 50% ()

Please comment on the strengths of the course and the way it was conducted.

Please comment on the weaknesses of the course and the way it was conducted.

Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

Thank you!!

STUDENT'S STUDY GUIDE
GIT AND HEPATOBILIARY-III MODULE
FOURTH PROFESSIONAL MBBS



TABLE OF CONTENTS

Sr. No	Contents
1.	DISCLAIMER
2.	CURRICULUM FRAMEWORK
3.	MODEL OVERVIEW
4.	WHAT IS STUDY GUIDE
5.	LEARNING METHODOLOGIES
6.	INTRODUCTION
7.	LEARNING OBJECTIVES
8.	THEMES
9.	SPECIFIC LEARNING OBJECTIVES
10.	TEACHING HOURS ALLOCATION
11.	EXAMINATION AND METHODS OF ASSESSMENT
12.	GRADING POLICY
13.	ASSESSMENT BLUEPRINT
14.	RECOMMENDED BOOKS

1. DISCLAIMER

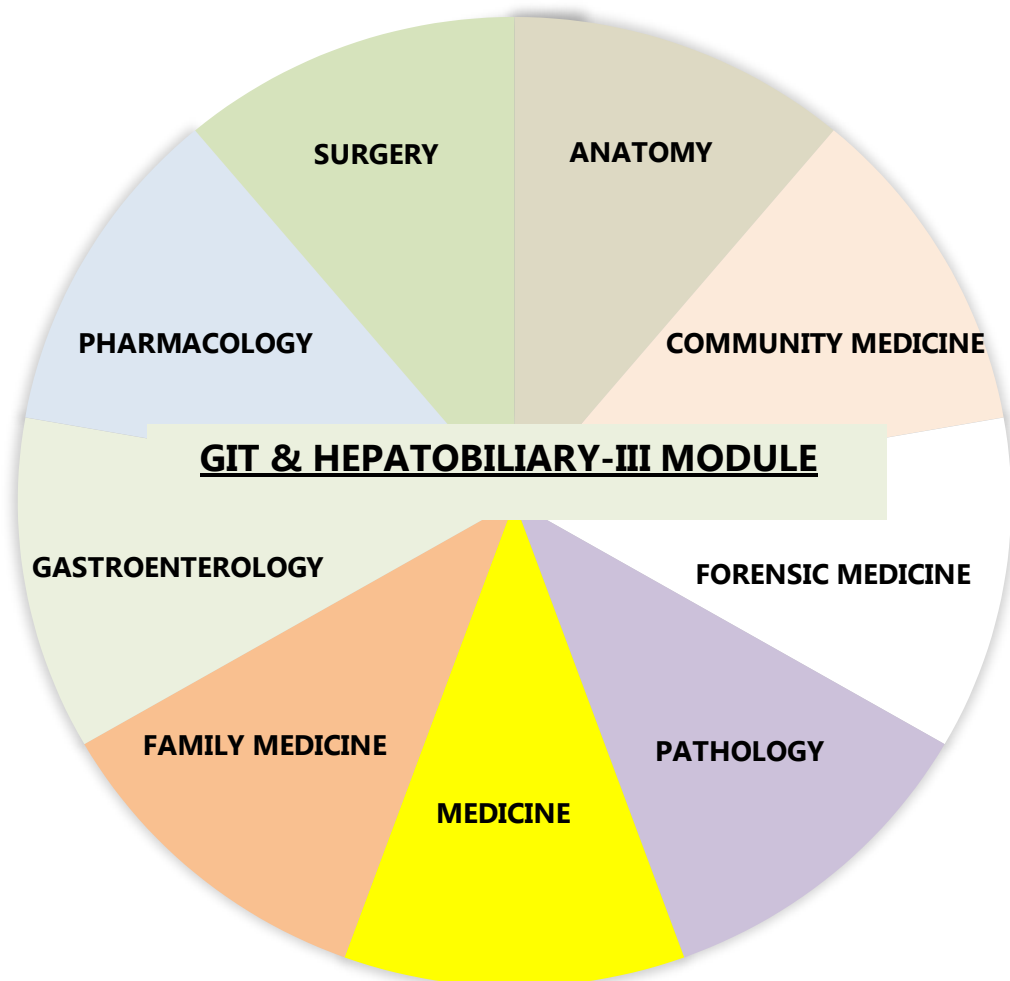
- Developing a study guide is a dynamic process and undergoes iteration according to the needs and priorities.
- This study guide is subjected to the change and modification over the whole academic year.
- However, students are advised to use it as a guide for respective modules.
- The time tables are for guiding purpose. It is to advise that final timetables are always displayed over the notice boards of each lecture hall.
- Students are encouraged to provide feedback via coordinator

2. CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Eye, ENT, Endocrine and Reproduction-III, Git and Hepatobiliary-III, Neuroscience-II and Renal-II modules which link basic science knowledge to clinical problems.

INTEGRATING DISCIPLINES OF GIT & HEPATOBILIARY-III MODULE



3. MODULE OVERVIEW

GIT AND HEPATOBILIARY-III MODULE DETAILS

Course	MBBS
Year	Fourth professional
Duration	8 weeks
Learning Outcomes	The competent Medical Practitioner
Competencies covered	To develop medical professionals who are well - versed, adept, and have the right mindset.
Module Assessment	End module formative assessment
Teaching Methods	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
Assessment Methods	MCQs, SEQs, OSPE, VIVA

GIT AND HEPATOBILIARY -III MODULE COMMITTEE

Sr. No	Names	Department	Designation
MODULE COORDINATOR			
1.	Prof: Dr. Allah Bachayo Rajar	Community Medicine	Professor
COMMITTEE MEMBERS			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

4. WHAT IS STUDY GUIDE

It is an aid to Inform students how student learning program of the module has been organized, to help students organize and manage their studies throughout the module and guide students on assessment methods, rules and regulations.

The study guide:

- Communicates information on organization and management of the module.
- This will help the student to contact the right person in case of any difficulty.
- Defines the objectives which are expected to be achieved at the end of the module.
- Identifies the learning strategies such as lectures, small group teachings.

Module objectives.

- Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- Highlights information on the contribution of continuous on the student's overall performance.
- Includes information on the assessment methods that will be held to determine every student's performance.

Achievement of objectives.

- Focuses on information pertaining to examination policy, rules and regulations.

5. LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations
- Skills session
- Practicals
- Self-Directed Study

• **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

• **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

• **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

• **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to pharmacology, microbiology, forensic medicine, and community medicine have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

6. INTRODUCTION

Greetings from the Liver and GIT module. This fascinating session will act as a foundation and is crucial to your future practice as physicians. This module includes a number of interactive tasks that are meant to make your learning engaging and fruitful.

The topics covered in this module include malignancies of the stomach, diarrheal disorders, malabsorption syndromes, inflammatory bowel diseases, benign and malignant lesions of the small and large intestine, non-neoplastic and tumors of the esophagus, inflammation and peptic ulcer, and diseases of the salivary gland.

Liver pathologies include jaundice and cholestasis, cholangiopathies and autoimmune liver diseases, metabolic liver diseases-1, drug and toxin-induced liver injury and fatty liver disease, liver cirrhosis, liver tumors, inflammatory illnesses, and gallbladder tumors. Understanding the pathology of the GIT and liver will be made easier by the fact that all of these illnesses are highly prevalent in clinical settings.

In order to assist students in developing their clinical approach to comprehend and solve the clinical problem by connecting their foundational knowledge of anatomy, physiology, biochemistry, and pathology with findings of a clinical case, real-life scenarios have been added to the module and will be discussed in small groups

6.1 RATIONALE

Diseases of the GIT are common all over our country. It is essential to make early diagnosis and treat the disease in order to reduce morbidity and mortality. This module provides an integrative understanding and detailed and clinically relevant information of pathology related to the digestive and biliary system.

6.2 IBN E SINA UNIVERSITY (ISU) VISION:

To become a world-leading organization in rural health and social care research, training, recruitment and best evidence-based practice.

6.3 IBN E SINA UNIVERSITY (ISU) MISSION:

Our Mission is to inspire hope, and contribute to health and well-being by providing the best care to every patient through integrated clinical practice, education and research. To provide a focal point for the development and collation of high-quality research pertinent to rural health and wellbeing. To improve the training, recruitment and retention of a professional workforce within rural communities. To be recognized as an exemplar in rural health and wellbeing on the international stage. To establish a network of individuals and groups that support research, innovation and development in rural health and social care.

7. LEARNING OBJECTIVES

7.1 General learning Objectives:

By the end of this module, the students should be able to:

1. Describe the etiology, pathogenesis, morphology, clinical features, laboratory diagnosis, medical and surgical management of diseases of GIT & hepatobiliary system.
2. Interpret the liver function tests in different hepatic diseases.
3. Describe the basic and clinical pharmacology of drugs used in GIT & hepatobiliary diseases.
4. Write prescriptions for common GIT & hepatobiliary disorders.
5. Describe medico legal aspects of abdominal trauma.
6. Describe medico legal aspects of vegetable acid, corrosive and irritants poisoning.
- 7.
8. Describe the epidemiology and prevention of malnutrition and viral hepatitis.
9. Analyze demographic processes in context of public health care.

7.2 Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Explain the etiology and clinical manifestations of common gastrointestinal diseases.
2. Assess patients with children and adult nutritional problems.
3. Examine the gastrointestinal system physically.
4. Take a history and create a suitable investigative strategy to arrive at a differential diagnosis.
5. For a diagnosis, evaluate the results of the investigations, exams, and history.
6. Apply the fundamentals of managing gastrointestinal and nutritional diseases.
7. Talk to the patients about prognosis and preventive measures.
8. Comprehend the public health importance of Nutrition.
9. Understand the nutritional requirement for different ages and gender.
10. Identify the factors for micro and macronutrient deficiencies in Pakistan.
11. Identify the risk factors of Malnutrition in children < 5 and over 5 years of age
12. Classify the types of malnutrition among children under and over 5 years

7.3 Skills / Psychomotor Domain:

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

1. Observation and Assistance
2. Performing the skill under supervision

3. Performing the skill independently
4. Link the structure and functional abnormalities of the gastrointestinal tract based on the clinical history and signs and symptoms)
5. Obtain a comprehensive history of patient with gastrointestinal and hepatobiliary disorders.

7.4 Attitude / Affective Domain:

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

1. Respect oneself and one's peers, both when providing and receiving comments.
2. To show patients compassion and understanding.
3. Develop your ability to communicate while keeping a sense of duty to your patients.
4. Showcase appropriate laboratory procedures.
5. Relate to patient and caregivers vulnerability
6. Demonstrate ethical self-management
7. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
8. Display compassion with patient and colleagues
9. Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease

7.5 Outcomes of Git and Hepatobiliary-III Module

1. Knowledgeable
2. Skillful
3. Community Health Promoter
4. Problem-solver
5. Professional
6. Researcher
7. Leader and Role Model

8. THEMES FOR ENDOCRINE AND REPRODUCTION-II MODULE

S.NO	Themes	Duration
1	Difficulty in swallowing	1 week
2	Epigastric pain	1 week
3	Pain right upper abdomen	2 week
4	Diarrhea and Constipation	3 week
5	Bleeding per Rectum	1 weeks

9. SPECIFIC LEARNING OBJECTIVES THEME WISE

Sr. No.	Lecture Topic	Topic Objectives	Teaching Hours	Mode of Teaching	Assessment Tools
<u>Theme 1: Difficulty in swallowing (Pathology)</u>					
1	Salivary Gland (Inflammation and tumors)	Classify the inflammatory and neoplastic diseases of salivary gland.	1	LGD	MCQs SAQ
2	Esophagus	Describe the etiology, morphology and clinical presentation of inflammatory and neoplastic diseases of salivary gland.	1	LGD	MCQs SAQ
<u>Theme 1: Difficulty in swallowing (Medicine)</u>					
3	Oral Cavity Diseases	Discuss the etiology of stomatitis and Aphthous ulcers Discuss the clinical features of stomatitis and Aphthous ulcers Discuss the investigations of stomatitis and Aphthous ulcers Devise a management plan for stomatitis and Aphthous ulcers	1	LGD	MCQs SAQ
4	Esophagus: 1) Esophageal motility disorder	Discuss the causes of esophageal motility disorders Discuss the clinical features of esophageal motility disorders Discuss the relevant investigations of esophageal motility disorders Devise a management plan of esophageal motility disorders	1	LGD	MCQs SAQ
5	2) Esophagitis	Discuss the etiology of esophagitis Discuss the clinical features of esophagitis Discuss the appropriate diagnostic testing for Esophagitis Devise a management plan for esophagitis	1	LGD	MCQs SAQ
6	Cardia achalasia	Discuss the etiology, clinical features, investigations and management of Cardia achalasia	1	LGD	MCQs SAQ
7	Gastro Esophageal reflux disease (GERD)	Discuss the risk factors, etiology, clinical features, investigations, complications and management of GERD	1	LGD	MCQs SAQ
<u>Theme 1: Difficulty in swallowing (ENT)</u>					
8	Cleft lip and palate	Discuss the etiology, clinical features, investigations, complications and management of cleft lip and palate	1	LGD	MCQs SAQ

9	Pharyngitis and Tonsillitis	Discuss the etiology, clinical features, investigations, complications and management of Pharyngitis and acute Tonsillitis	1	LGD	MCQs SAQ
		Explain the clinical features, and management of peritonsillar abscess	1	LGD	MCQs SAQ
		Discuss the classification, etiology, clinical features, investigations, and management of Chronic Tonsillitis	1	LGD	MCQs SAQ
10	Oropharyngeal cancer	Discuss the classification, etiology, clinical features, investigations, and management of oropharyngeal cancers	1	LGD	MCQs SAQ
11	Salivary glands	Classify diseases of the salivary glands	1	LGD	MCQs SAQ
		Explain the etiology, clinical features, investigations and management of Mumps, and Sialadenitis	1	LGD	MCQs SAQ
		Explain the etiology, clinical features, investigations and management of salivary ducts stones	1	LGD	MCQs SAQ
12	Dysphagia	Explain the types, etiology, clinical features, investigations and management of a patient with dysphagia	1	LGD	MCQs SAQ
Theme 1: Difficulty in swallowing (Surgery)					
13	Tumors of the esophagus	Discuss the classification, etiology, clinical features, investigations, staging and management of Esophageal cancers	1	LGD	MCQs SAQ
14	Para-esophageal hiatus hernia	Explain the etiology, clinical features, investigations and management of Para- esophageal hiatus hernia	1	LGD	MCQs SAQ
Theme 1: Difficulty in swallowing (Medical Education)					
15	Social accountability	Explain the concept of social accountability	1	LGD	MCQs SAQ
16		Differentiate between different social accountability issues	1	LGD	MCQs SAQ
Theme 2: Epigastric pain (Pathology)					
17	Gastritis	Explain the types, etiology, microscopic morphology and clinical features of Gastritis	1	LGD	MCQs SAQ
18	Peptic ulcers	Discuss the etiology, pathophysiology, morphology, complications and lab. diagnosis of peptic ulcer disease	1	LGD	MCQs SAQ
		Discuss the role of H.Pylori & campylobacter in the causation of Peptic ulcer disease			
		Discuss the morphology, virulence factors and lab diagnosis of H. Pylori & campylobacter			

19	Gastric polyps and tumors	Classify gastric polyps and tumors	1	LGD	MCQs SAQ
		Describe the pathogenesis, morphology, lab diagnosis and complications of gastric polyps and tumors.	1	LGD	MCQs SAQ
Theme 2: Epigastric pain (Medicine)					
20	Gastritis	Explain the types, etiology, clinical features, investigations, management and complications of Gastritis	1	LGD	MCQs SAQ
21	Peptic ulcer disease	Explain the types, etiology, clinical features, investigations, management and complications of Gastritis	1	LGD	MCQs SAQ
		Describe H.pylori eradication therapy protocols in the treatment of peptic ulcer disease			
22	Upper GI Bleeding	Explain the etiology, clinical features, investigations and management of a patient with upper GI bleeding	1	LGD	MCQs SAQ
		Describe the indications and procedures of pharmacological and endoscopic treatment of variceal bleeding			
Theme 2: Epigastric pain (Pharmacology)					
23	Anti-emetics	Classify anti-emetic drugs	4	LGD	MCQs SAQ
		Describe the mechanism of serotonin antagonists as anti-emetic agents.			
		Enlist the clinical uses (anti-emetic) and adverse effects of serotonin antagonists.			
		Describe the pharmacological basis of serotonin antagonists in chemotherapy induced vomiting			
		Describe the mechanism of H1-antagonists as anti-emetic agents.			
		Enlist the clinical uses (anti-emetic) of H1-antagonists.			
		Describe the mechanism of anticholinergic drugs as anti-emetic agents.			
		Enlist the clinical uses (anti-emetic) of anticholinergic drugs.			

		Describe the pharmacological basis of scopolamine in motion sickness			
		Describe the anti-emetic mechanism of D2- receptor blockers (Metoclopramide & Domperidone).			
		Enlist the clinical uses (anti-emetic) and adverse effects of D2-receptor blockers.			
		Compare the pharmacological features of metoclopramide & Domperidone.			
		Describe the drug interaction of metoclopramide with levodopa.			
		Describe the mechanism of neuroleptics as anti-emetic agent.			
		Enumerate the clinical uses (anti-emetic) of neuroleptic drugs.			
		Enumerate the indications (anti-emetic) of glucocorticoids.			
		List anti-emetic drugs used in morning sickness.			
		List anti-emetic drugs used in chemotherapy induced vomiting.			
24	Drugs used in the treatment of variceal bleeding	Enlist the drugs used in variceal hemorrhage	1	LGD	MCQs SAQ
		Describe the mechanism of somatostatin and octreotide in variceal hemorrhage			
		Describe the mechanism of Vasopressin & Terlipressin in variceal hemorrhage			
		Describe the mechanism of beta-blockers in variceal hemorrhage			
25	Drugs used in the treatment of Peptic ulcer disease and Gastritis	Classify the drugs used in Peptic ulcer disease	1	LGD	MCQs SAQ
		Describe the mechanism of action, indications and adverse effects of proton pump inhibitors (PPIs).			
		Describe the pharmacokinetics of PPIs with special emphasis on time of administration			
		Describe the drug interaction of Omeprazole & H2 blockers with Sucralfate			
		Describe the drug interaction of Omeprazole with Clopidogrel			

	Enumerate the indications (anti-emetic) of glucocorticoids.			
	Describe the mechanism of action, indications and adverse effects of H-2 blockers.	4	LGD	MCQ, SEQ
	Compare/differentiate H2-blockers in terms of bioavailability and involvement in drug interactions			
	Describe the mechanism of action, indications and adverse effects of Antacids.			
	Enumerate the properties of an ideal antacid.			
	Describe the pharmacokinetics of antacids with special emphasis on time of administration			
	Describe the drug interactions of antacids with tetracyclines, iron and fluoroquinolones.			
	Describe the mechanism of sucralfate in the treatment of peptic ulcer			
	List the indications of sucralfate.			
	Discuss the drug interaction of sucralfate with digoxin, ketoconazole and tetracyclines.			
	Describe the pharmacokinetics of sucralfate with special emphasis on time of administration.			
	Describe the mechanism, indications and adverse effects of bismuth compounds.			
	Describe the mechanism of action, indications and adverse effects of H-2 blockers.			
	Describe the role of anticholinergic drugs in peptic ulcer.			
	List the indications (anti-peptic ulcer) of anticholinergic drugs.			
	Discuss the pharmacological basis for the use of prostaglandin analogues (Misoprostol) in the treatment of peptic ulcer.			
	List the contraindications of misoprostol.			
	Describe triple therapy for the eradication of H.pylori infection.			

		Describe quadruple therapy for the eradication of H.pylori infection			
Theme 2: (Epigastric pain)Surgery					
30	Gastric cancer	Describe the types, etiology, risk factors, lab diagnosis and management of a patient with gastric cancer	1	LGD	MCQs SAQ
31	Gastric outlet obstruction	Describe the etiology, diagnosis and management of a patient with gastric outlet obstruction	1	LGD	MCQs SAQ
Theme 2: Epigastric pain (Community medicine)					
32	Health system of Pakistan: Introduction	Describe health care system of Pakistan using WHO Health system frame work	1	LGD	MCQs SAQ
33	Primary health care (PHC)	Define PHC	2	LGD	MCQs SAQ
		Describe the history of development of PHC			
		Describe the concepts and components of PHC			
		Describe comprehensive & selective PHC			
		Describe reasons for failure of PHC			
		Describe Health Systems before & after PHC			
		Describe district health care system			
		Enumerate indicators for assessing PHC			
	Health education	Define health education	4	LGD	MCQs SAQ
		Describe objectives and functions of health education			
		Describe the components of health education			
		Describe the methods of health education			
		Describe the communication channel in health education			

34		Describe the constraints in health education			
		Describe classification of theories of health education			
		Describe the stages in health education			
		Describe the principles of health education			
		Describe the strategies for an effective health education program			
		Explain the methods of evaluation and effectiveness of a health education project			
35	Health	Define concept of HMIS	1	LGD	MCQs SAQ
		Enumerate the components of HMIS			
		Describe its importance in health care delivery system			
		Enumerate the principles of HMIS			
		Give the causes of failure of HMIS			
36	Hospital administration	Define health care delivery system	1	LGD	MCQs
	Describe the need of a specialized hospital administration			SAQ	
	Describe the attributes of a good administrator				
	Describe functions involved in administration				
	Describe the levels of hospitals and management levels in a hospital				

37	Health plans - Longitudinal, horizontal, integrated, 5 year, ADP, SAP, Short term, long term	Describe different health plans	1	LGD	MCQs SAQ
		Describe characteristics of health plans			
38	Health plans – MDGs	Enumerate MDGS	1	LGD	MCQs SAQ
		Describe targets & indicators of various health related MDGs			
		Describe reasons for failure to achieve MDGS			
39	Health plans – SDGs	Enumerate SDGs related to health	1	LGD	MCQs SAQ
		Describe targets & indicators of various health related SDGs			
		Describe Pakistan progress on set targets			
40	Health planning	Define health planning	1	LGD	MCQs SAQ
		Describe importance & use of planning in health			
		Explain the reasons for ineffective planning in Pakistan			
		Describe health planning cycle			
		Describe the types of health planning			
		Describe functions involved in administration			
41	Health economics	Define Health economics	1	LGD	MCQs SAQ
		Explain the importance of economic studies			

		inhealth			
		Describe different tools used in e evaluations			
42	Health policy	Define health policy	1	LGD	MCQs SAQ
		Describe its role in health system			
		Describe different stages in policy making			
		Describe the different types of policies			
		Describe the constraints in policy making			
		Describe health policy of Pakistan.			
43	Role of international health agencies in public health	Enumerate international health agencies working in health sector.	1	LGD	MCQs SAQ
		Discuss structure and function of WHO & UNICEF			
		Explain the roles of WHO & UNICEF in Pakistan.			
<u>Theme 3: Pain right upper abdomen (Anatomy)</u>					
44	Gross anatomy	Explain the lobes and segments of the liver	1	LGD	MCQs SAQ
		Discuss the gross structure of gall bladder and biliary channels			
		Explain the gross and microscopic structure of the pancreas			
45	Liver histology	Explain the microscopic structure of the liver and gall bladder	1	LGD	MCQs SAQ
<u>Theme 3: Pain right upper abdomen (Pathology)</u>					
46	Liver Function Tests	Enumerate the functions of the liver.	1	LGD	MCQs SAQ
		Explain the significance of different liver function tests.			
		Interpret the Liver function tests in different diseases.			

47	Mechanisms of liver injury and repair	Describe the etiology and morphology of liver injury and repair	1	LGD	MCQs SAQ
48	Acute Liver failure	Describe the etiology, pathogenesis, clinical and biochemical and other features of acute liver failure	1	LGD	MCQs SAQ
49	Chronic	Describe the etiology, pathogenesis, clinical and biochemical and other features of chronic liver disease	1	LGD	MCQs SAQ
		Explain the complications of liver cirrhosis			
50	Portal hypertension	Describe the etiology, pathogenesis, clinical features and complication of portal hypertension	1	LGD	MCQs SAQ
51	Viral hepatitis A and E	Explain the Etiology, pathogenesis, morphology and clinical features of Acute viral hepatitis A and E infection	1	LGD	MCQs SAQ
52	Viral hepatitis B	Explain the Etiology, risk factors, pathogenesis, morphology and clinical features of Acute viral hepatitis B infection	2	LGD	MCQs SAQ
		Explain the pathogenesis, morphology and clinical features of Chronic viral hepatitis B infection			
		Discuss the stages of viral hepatitis B infections			
		Discuss the complications of chronic Hepatitis B virus infection			
		Discuss the serological markers of hepatitis B Virus infection			
		Explain the preventive strategies of Hepatitis B virus infection			

53	Viral Hepatitis C	Explain the Etiology, risk factors, pathogenesis, morphology and clinical features of viral hepatitis C infection	1	LGD	MCQs SAQ
		Discuss the complications of chronic Hepatitis C virus infection			
54	Autoimmune hepatitis	Define autoimmune hepatitis	1	LGD	MCQs SAQ
		Explain the serological and morphological features of autoimmune hepatitis			
55	Toxin and hepatitis	Explain the etiology and morphological features of toxins and drug induced hepatitis	1	LGD	MCQs SAQ
56	Alcoholic liver disease	Discuss the morphology, pathogenesis and complications of Alcoholic liver disease	1	LGD	MCQs SAQ
57	Metabolic liver diseases <ul style="list-style-type: none"> • Non-Alcoholic liver disease (NAFLD) • Hemochromatosis • Wilson's disease • Alpha-1 	Describe the morphology, clinical features and complications of NAFLD, Hemochromatosis, Wilson's disease and Alpha-1 Anti-Trypsin deficiency	1	LGD	MCQs SAQ
		Describe the etiology, morphology, features and complications of Hemochromatosis			
		Describe the etiology, morphology, features and complications of Wilson's disease			
		Describe the etiology, morphology, deficiency			
58	Liver abscess	Describe the etiology, pathogenesis, morphology, clinical presentation, complications	1	LGD	MCQs SAQ
59	Tumors of the liver	Classify liver tumors	1	LGD	MCQs SAQ
		Explain the benign tumors of the liver			

		Discuss the risk factors, etiology, morphology, clinical features, staging and complications of hepatocellular carcinoma			
60	Gall bladder Gall stone	Discuss the types, risk factors, morphology, clinical features and complications of gall stones	1	LGD	MCQs SAQ
61	Chole cystitis	Discuss the risk factors, etiology, morphology, clinical features and complications of acute cholecystitis	1	LGD	MCQs SAQ
		Discuss the risk factors, etiology, morphology, clinical features and complications of Chronic cholecystitis			
62	Gall bladder cancer	Discuss the risk factors, etiology, morphology, clinical features, staging and complications of carcinoma gall bladder			
63	Pancreas	Enlist and define the congenital anomalies of pancreas	1	LGD	MCQs SAQ
		Discuss the risk factors, etiology, morphology, clinical features and complications of acute pancreatitis			
		Discuss the risk factors, etiology, morphology, clinical features and complications of chronic pancreatitis			
		Describe the pathogenesis and complications of pancreatic pseudocyst			

64	Gall bladder • Gall stones	Discuss the types, risk factors, morphology, clinical features and complications of gall stones	1	LGD	MCQs SAQ
65	• Cholecystitis	Discuss the risk factors, etiology, morphology, clinical features and complications of acute cholecystitis			
<u>Theme 3: Pain right upper abdomen (Pediatrics)</u>					
66	Hereditary hyperbilirubinemias	Classify hereditary hyperbilirubinemias	1	LGD	MCQs SAQ
		Explain the types, clinical features, investigations and management of different hereditary hyperbilirubinemias			
67	Acute hepatitis A	Explain the Etiology, pathogenesis, features, investigations and treatment of Acute viral hepatitis A infection	1	LGD	MCQs SAQ
<u>Theme 3: Pain right upper abdomen (Medicine)</u>					
68	Hepatitis B virus infection	Explain the Etiology, pathogenesis, viral hepatitis B infection	1	LGD	MCQs SAQ
		Explain the Etiology, pathogenesis, features, investigations and treatment of chronic viral hepatitis B infection			
69	Hepatitis C virus infection	Explain the Etiology, pathogenesis, viral hepatitis C infection	1	LGD	MCQs SAQ
		Explain the clinical features, investigations, management and complications of liver cirrhosis			
		Explain the treatment of a patient with hepatic encephalopathy			
70	Metabolic liver diseases	Discuss the management of a patient with Wilson's disease	1	LGD	MCQs SAQ
		Discuss the management of a patient with Hemochromatosis			

		Discuss the management of a patient with primary biliary cirrhosis			
		Discuss the management of a patient with autoimmune hepatitis			
71	Hepatic vein obstruction	Discuss the etiology, clinical hepatic vein obstruction	1	LGD	MCQs SAQ
72	Hepatocellular carcinoma	Explain the etiology, clinical hepatic carcinoma	1	LGD	MCQs SAQ
73	Carcinoma of the pancreas	Discuss the risk factors, etiology, of pancreas	1	LGD	MCQs SAQ
Theme 3: Pain right upper abdomen (Surgery)					
74	Gall bladder and pancreas	Explain the etiology, clinical gall stones	1	LGD	MCQs SAQ
		Explain the etiology, clinical investigations, treatment and complications of acute and chronic cholecystitis			
		Explain the etiology, clinical investigations, treatment and complications of acute and chronic pancreatitis			
75	Carcinoma of the gall bladder	Discuss the risk factors, etiology, of gall bladder	1	LGD	MCQs SAQ
76	Liver abscess	Explain the etiology, clinical liver abscesses	1	LGD	MCQs SAQ
77	Hydatid liver cysts	Explain the etiology, clinical Hydatid liver cysts.	1	LGD	MCQs SAQ
Theme 3: Pain right upper abdomen (Pharmacology)					
78	Hepatotoxic drugs	Describe first pass hepatic metabolism	1	LGD	MCQs SAQ
		Enlist common hepatotoxic drugs			
		Explain the drug treatment of paracetamol poisoning.			

79	Drugs used in the treatment of hepatitis B	Classify the drugs for hepatitis B virus infection.	2	LGD	MCQs SAQ
		Describe the duration and adverse effects of drugs used in the treatment of chronic hepatitis B.			
		Classify the drugs for hepatitis C virus infection.			
80	Drugs used in the treatment of hepatitis C	Describe the duration and adverse effects of drugs used in the treatment of chronic hepatitis C.	1	LGD	MCQs SAQ
<u>Theme 3: Pain right upper abdomen (Community medicine)</u>					
81	Viral Hepatitis	Describe the epidemiological determinants of Hepatitis B & C.	1	LGD	MCQs SAQ
		Describe the prevalence and incidence with reference to local context.			
		Describe the preventive & control measures for Hepatitis B & C.			
<u>Theme 3: Pain right upper abdomen (Family Medicine)</u>					
82	Acute and chronic hepatitis	Explain the etiology and clinical features of acute hepatitis.	2	LGD	MCQs SAQ
		Explain the management strategies of acute hepatitis in family practice.			
		Explain the etiology, clinical features and complications of Chronic hepatitis.			
		Explain the management strategies of chronic hepatitis in family practice.			
		Describe the red flags in a patient with acute and chronic hepatitis for referral to specialty care.			
<u>Theme 4: Diarrhea and Constipation (Pathology)</u>					

83	Intestinal obstruction	Define hernia, adhesions, volvulus, and intussusception	1	LGD	MCQs SAQ
84	Ischemic bowel disease	Describe the etiology, pathogenesis, morphology, and complications of small bowel ischemia	1	LGD	MCQs SAQ
85	Diarrheas	Define malabsorption syndrome	1	LGD	MCQs SAQ
		Classify diarrheas			
		Explain the etiology, morphology, features and complications of Celiac disease			
86	Bacterial enterocolitis	Explain the etiology, pathogenesis, and clinical features of bacterial enterocolitis	1	LGD	MCQs SAQ
		Explain the etiology, pathogenesis, morphology and clinical features of Salmonellosis			
87	Parasitic enterocolitis	Classify the parasites invading the small gut	1	LGD	MCQs SAQ
88	Entamoeba histolytica	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Amebiasis	1	LGD	MCQs SAQ
89	Giardia lamblia	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Giardiasis	1	LGD	MCQs SAQ
90	Hymenolepis nana	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of H. nana	1	LGD	MCQs SAQ
91	Intestinal obstruction	Define hernia, adhesions, volvulus, and intussusception	1	LGD	MCQs SAQ
92	Diphyllobothrium latum	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Diphyllobothrium latum	1	LGD	MCQs SAQ
93	Schistosoma	Enlist physical characteristics of Trematodes	1	LGD	MCQs SAQ

		Classify Schistosoma on the basis of organ systems affected	1	LGD	MCQs SAQ
		Describe the routes of infection, pathophysiology life cycle, clinical features and lab diagnosis of Schistosoma hematobium, mansoni and japonicum			
		Compare the morphological characteristics of eggs of different species of Schistosoma.			
94	Ascaris lumbricoides	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Ascaris lumbricoides	1	LGD	MCQs SAQ
95	Strongyloides	Discuss the life cycle, morphology, pathogenesis, clinical features and Strongyloides	1	LGD	MCQs SAQ
96	Ankylostoma duodenale	Discuss the life cycle, morphology, pathogenesis, clinical features and Ankylostoma duodenale	1	LGD	MCQs SAQ
97	Diphyllobothrium latum	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Diphyllobothrium latum	1	LGD	MCQs SAQ
98	Enterobius vermicularis	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Enterobius vermicularis	1	LGD	MCQs SAQ
Theme 4: Diarrhea and Constipation (Medicine)					
99	Intestinal tuberculosis	Discuss the etiology, pathogenesis, features, investigations, treatment and complications of intestinal tuberculosis	1	LGD	MCQs SAQ
Theme 4: Diarrhea and Constipation (Surgery)					

100	Acute appendicitis	Discuss the etiology, risk factors, pathogenesis, clinical features, differential diagnosis, investigations, treatment and complications of acute appendicitis	1	LGD	MCQs SAQ
101	Intestinal obstruction	Discuss the etiology, clinical intestinal obstruction	1	LGD	MCQs SAQ
Theme 4: Diarrhea and Constipation (Pharmacology)					
102	Antidiarrheal etc	Define and classify antidiarrheal agents	1	LGD	MCQs SAQ
		Describe the mechanism of action of different antidiarrheal agents			
103	Laxatives (Bulk-forming, stool softeners, osmotic laxatives, laxatives, etc.	Define and classify laxative drugs	1	LGD	MCQs SAQ
		Describe the mechanism of action of different laxatives			
104	Lactulose	Describe the pharmacological basis of Lactulose in the treatment of hepatic encephalopathy	1	LGD	MCQ, SAQ
105	Anti-amoebic drugs	Classify anti-amoebic drugs	1	LGD	MCQs SAQ
		Describe mechanism of actions of Metronidazole & Dialoxanide Furoate			
		Enlist indications and adverse effect of Metronidazole & Dialoxanide Furoate.			

		Describe the drug interaction of Metronidazole with Alcohol.			
106	Anthelmintics	Classify Anti-Helminthic drugs	1	LGD	MCQs SAQ
		Enumerate clinical use(s), adverse effects and contraindications of Albendazole, Mebendazole, Pyrantal Pamoate, Ivermectin, Praziquantel & Niclosamide			
		Describe mechanism of action of Albendazole, Mebendazole, Pyrantal Pamoate, Ivermectin, Praziquantel & Niclosamide			
107	Anti-Salmonellosis drugs	List the drugs used in enteric fever	1	LGD	MCQs SAQ
		Describe the basis for selection of antibiotics in enteric fever based on age, pregnancy and resistance			
		Describe the clinical applications of Fluroquinolones in the treatment of gastrointestinal disorders			
Theme 4: Diarrhea and Constipation (Community medicine)					
113	Overview of common intestinal worms' infestation and their control	Describe the common intestinal worm infestation in our local context	1	LGD	MCQs SAQ

		Describe the epidemiological determinants of common worm infestation with reference to local context			
		Describe the preventive & control measures for common worm infestation			
114	Control of dysentery	Describe the epidemiology of Dysentery.	1	LGD	MCQs SAQ
		Describe the prevention & control measures of Dysentery.			
115	Food hygiene	Describe the term food Hygiene	1	LGD	MCQs SAQ
		Describe the importance of food hygiene			
		Describe the process of Food hygiene			
Theme 4: Diarrhea and Constipation (Family medicine)					
116	Enteric infections	Classify enteric infections	2	LGD	MCQs SAQ
		Describe the etiology, clinical investigations and management of Salmonellosis			
		Describe the red flags in a patient with Salmonella infections for referral to specialty care.			
		Explain the etiology, and management of acute gastroenteritis.			
		Discuss the primary and secondary prevention of acute gastroenteritis in a primary healthcare setting.			
		Describe the red-flags in a patient with acute gastroenteritis for referral to specialty care.			
Theme 4: Diarrhea and Constipation (Pediatrics)					
117	Lactase deficiency	Describe the clinical features, investigations, complications, and management of Lactase deficiency.	1	LGD	MCQs SAQ

118	Infectious diarrhea	Describe the etiology, clinical investigations, complications, and management of infectious diarrheas in children.	1	LGD	MCQs SAQ
119	Celiac disease	Describe the etiology, clinical of Celiac disease.	1	LGD	MCQs SAQ

Theme 5: Bleeding per Rectum (Pathology)

120	Inflammatory bowel disease (IBD)	Classify IBD	1	LGD	MCQs SAQ
		Discuss the risk factors and etiology of IBDs			
		Explain the pathogenesis clinical presentation of IBD			
		Differentiate between Ulcerative colitis and Crohn's disease			
		Discuss the investigations and management of IBDs			
		Explain the intestinal and extra-intestinal manifestations/complications of IBDs			
		Explain the role of surveillance colonoscopy in patients with Ulcerative colitis			
121	Diverticular disease	Explain the etiology, pathogenesis, morphology and clinical features of Colonic diverticulosis	1	LGD	MCQs SAQ
122	Colonic polyps	Classify colonic polyps.	1	LGD	MCQs SAQ
		Describe the pathogenesis, morphology, clinical presentation, complications and diagnosis			

		f different types of colonic polyps			
123	Hemorrhoids	Define hemorrhoids	1	LGD	MCQs SAQ
		Explain the morphology, pathogenesis and clinical features of Hemorrhoids			
124	Colorectal carcinoma	Describe the adenoma carcinoma sequence	1	LGD	MCQs SAQ
		Describe the pathogenesis, morphology, clinical presentation, complications and staging of colorectal Carcinoma			
Theme 5: Bleeding per Rectum (Surgery)					
125	Diverticular disease	Explain the etiology, pathogenesis, features, complications and management of Diverticulosis and Diverticulitis	1	LGD	MCQs SAQ
126	Anal diseases: • fistula • fissures • hemorrhoids	Define perianal fistula and anal fissure	1	LGD	MCQs SAQ
		Explain the risk factors and management of anal fistula and anal fissures			
		Explain the risk factors and management of hemorrhoids			
127	Colorectal cancers	Classify colorectal cancers	1	LGD	MCQs SAQ

		Describe the staging of colorectal cancers			
		Explain the pathogenesis, risk factors and clinical features of colorectal cancers			
		Explain the complications, management and prognosis of colorectal cancers			
128	Ischemic Colitis	Explain the etiology, pathogenesis, Ischemic colitis	1	LGD	MCQs SAQ
<u>Theme- 5: Bleeding per Rectum (Medicine)</u>					
129	Irritable bowel syndrome	Explain the risk factors, clinical features, and management of Irritable bowel syndrome	1	LGD	MCQs SAQ
130	Ulcerative colitis	Explain the etiology, pathogenesis, of Crohn`s disease	1	LGD	MCQs SAQ
131	Crohn`s disease	Explain the etiology, pathogenesis, features, complications and management of Crohn`s disease	1	LGD	MCQs SAQ
132	Ano-rectal infections	Classify anorectal infections	1	LGD	MCQs SAQ
		Explain the risk factors, clinical features and management of anorectal infections including sexually transmitted infections			
<u>Theme 5: Bleeding per Rectum (Pharmacology)</u>					
133	Drugs used in the treatment of Irritable Bowel Syndrome (IBS)	Enlist the drugs used in IBS	1	LGD	MCQs SAQ
		Describe the mechanism of action of antispasmodics (anticholinergics), 5-HT receptor antagonisms (Aldosterone) in IBS			
134	Drugs used in the treatment of IBD	Classify the drugs used in IBD	1	LGD	MCQs SAQ

		Describe the mechanism of actions of amino salicylates, glucocorticoids, purine analogues, methotrexate, monoclonal antibodies and anti-integrin in IBDs			
		Explain the adverse effects of drugs used in the treatment of IBD			

PRACTICAL WORK

Subject	Topic	Learning Objectives	Learning Modalities	Practical Hours
Week 1 Practical's				
Pathology	Ascaris Lumbricoides	Identify the important morphological and staining characteristics of the ova	Practical	2 hour
	Enterobius vermicularis	Identify the important morphological and staining characteristics of the ova	Practical	2 hour
	Ankylostoma duodenale	Identify the important morphological and staining characteristics of the ova	Practical	2 hour
	Liver Function Tests	To interpret normal and abnormal liver function tests in different clinical scenarios	Practical	2 hour
Pharmacology	Peptic ulcer disease	Construct prescription (Quadruple therapy)	Practical	2 hour
	Anti-emetics	construct prescriptions morning sickness, post-operative patient	Practical	2 hour
		construct prescriptions for cancer chemotherapy-induced vomiting	Practical	2 hour
		construct a prescription for a patient suffering from amoebic dysentery	Practical	2 hour
	Enteric fever	construct a prescription for a patient suffering from Enteric fever	Practical	2 hour
		Write a prescription for a patient suffering from Ascariasis	Practical	2 hour
Community medicine	Protein calorie malnutrition	Identify the model	Practical	2 hour
		Differentiate between the clinical features of 2 models	Practical	2 hour
		Justify its public health importance	Practical	2 hour

		Signify the concept of food fortification and food adulteration	Practical	2 hour
	My food plate/ The pyramid	Identify the model	Practical	2 hour
		Describe different components of the model	Practical	2 hour
	Health education	identify a health education message on the problem/scenario provided	Practical	2 hour
		Formulate a health education message on the problem/scenario provided	Practical	2 hour
	House fly /arthropods	Identify the model	Practical	2 hour
		Explain the disease caused by this vector and its control	Practical	2 hour
	Aedes Egypti	Identify the model	Practical	2 hour
		Explain the disease caused by this vector and its control	Practical	2 hour
	Autoclave	Identify the model	Practical	2 hour

9.1 TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
RESEARCH AND BIOSTATICS						
Biostatistics	Intro to biostats	Describe the significance of biostat in health and epidemiology	Small group Discussion		2Hrs	MCQ
	Data and variable types	Define and classify variables				
Sampling	Sampling	Define sampling	Lecture		2 hr	MCQ
		Discuss types of sampling				
Bias	Biases in epidemiological studies	Define Bias Discuss different types of bias Discuss ,how bias can be prevented	Lecture		2 hrs	MCQ
Measures of central tendency	Measures of central tendency	Classify measures of central tendency	Small Group Discussions		2 hr	MCQ
		Calculate measures of central tendency				
		Interpret and signify the results				
		Describe the advantages and disadvantages of different measures				

Measures of dispersion	Measures of dispersion	Classify measures of dispersion	Lecture		1 hr	MCQ
		Calculate measures of dispersion				
		Interpret the results of measures of dispersion				
		Explain the advantages and disadvantages of measures of dispersion				
		Explain the use of different measures In specific circumstances				

9.2 CLINICAL ROTATION SCHEDULE

Duration	11 weeks			11 weeks			9 weeks	5 weeks
	5wks	3wks	3wks	5wks	3wks	3wks		
Disciplines	Medicine	Medicine & Allied	Paeds	Surgery	Surgery & Allied	Gynae Obs	EYE	ENT
Total hours*	65	39	39	65	39	39	100	64

* 2.6 Clinical rotation hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

10. TEACHING HOURS ALLOCATION

S. No	Subject	Hours	Practical Hours
1	Pathology	49	8
2	Pharmacology	25	12
3	Community medicine	23	26
4	Medicine	13	-
5	Surgery	14	-
6	Pediatrics	4	-
7	Family medicine	3	-
8	Medical Education	1	-
19	Research and Biostatistics	9	-
	Total hours	151	54

11. EXAMINATION AND METHODS OF ASSESSMENT

11.1 EXAMINATION RULES AND REGULATIONS

- Student must report to examination hall/venue, in time for smooth conduction of the exams.
- No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
- No students will be allowed to sit in exam without College ID Card, and Lab Coat
- Students must sit according to their roll numbers mentioned on the seats.
- Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) - Sharing is prohibited
- Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
- Students must not possess any written material or communicate with their fellow students
- Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
- **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

11.2 ASSESSMENT

11.2.1 Internal: Total 10% (20 marks)

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
 - **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
 - **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:

- NOTE: at least 75% attendance is mandatory to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

11.2.2 University Annual Exam: Total 90%

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

11.3 METHODS OF ASSESSMENT

11.3.1 Multiple Choice Questions

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

11.3.2 Short Essay Questions (SEQs):

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

11.3.3 OSPE / OSCE

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas

- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
 - Interactive Stations:
 - In this station, examiner ask questions related to the task within the allocated time.
 - Observed Stations:
 - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
 - Unobserved (static) Stations:
 - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
 - Rest station
 - It is a station where there is no task given and in this time student can organize his/her thoughts

11.3.4 ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

11.3.5 WEEKLY TESTS

- The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

- The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.
- It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.
- Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

11.3.6 POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD
- Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class
- PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

12. GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable

13. ASSESMENT BLUEPRINT

GIT AND HEPATOBILLIARY MODULE-III MODULE

Assessment is based on Table of Specification (TOS)

	ASSESMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

14. RECOMMENDED BOOKS

SUBJECT	RESOURCES
ANATOMY	TEXT BOOKS 1. K.L. Moore, Clinically Oriented Anatomy
COMMUNITY MEDICINE	TEXTBOOKS 1. Community Medicine by Parikh 2. Community Medicine by M Illyas 3. Basic Statistics for the Health Sciences by Jan W Kuzma
FORENSIC MEDICINE	TEXT BOOKS 1. Nasib R. Awan. Principles and practice of Forensic Medicine 1st ed. 2002. 2. Parikh, C.K. Parikh's Textbook of Medical Jurisprudence, Forensic Medicine and Toxicology. 7th ed. 2005. REFERENCE BOOKS 3. Knight B. Simpson's Forensic Medicine. 11th ed. 1993. 4. Knight and Pekka. Principles of forensic medicine. 3rd ed. 2004 5. Krishan VIJ. Text book of forensic medicine and toxicology (principles and practice). 4th ed. 2007 6. Dikshit P.C. Text book of forensic medicine and toxicology. 1st ed. 2010 7. Polson. Polson's Essential of Forensic Medicine. 4th edition. 2010. 8. Rao. Atlas of Forensic Medicine (latest edition). 9. Rao. Practical Forensic Medicine 3rd ed, 2007. 10. Knight: Simpson's Forensic Medicine 10th 1991, 11th ed. 1993 11. Taylor's Principles and Practice of Medical Jurisprudence. 15th ed. 1999 WEBSITES: www.forensicmedicine.co.uk
GENERAL MEDICINE	REFERENCE BOOKS: 1. Hutchison's Clinical Methods, 23 rd Edition 2. MacLeod's clinical examination 13th edition 3. Davidson's Principles and Practice of Medicine 4. Kumar and Clark's Clinical Medicine 5. HCAI guidelines CDC
PATHOLOGY/MICROBIOLOGY	TEXTBOOKS 1. Robbins & Cotran, Pathologic Basis of Disease, 9th edition. 2. Rapid Review Pathology, 4th edition by Edward F. Goljan MD WEBSITES: 1. http://library.med.utah.edu/WebPath/webpath.html 2. http://www.pathologyatlas.ro/
PHARMACOLOGY	A. TEXTBOOKS 1. Lippincott Illustrated Pharmacology 2. Basic and Clinical Pharmacology by Katzung



IBN-E-SINA UNIVERSITY MIRPURKHAS
FACULTY OF BASIC MEDICAL SCIENCES



Course Feedback Form

Course Title: _____

Semester/Module _____ Dates: _____

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

THE DESIGN OF THE MODLUE

- A. Were objectives of the course clear to you? Y N
- B. The course contents met with your expectations
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with
l. Too few examples 5. Adequate examples
- E. The level of the course was
l. Too low 5. Too high
- F. The course contents compared with your expectations
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?
l. Not at all 5. Very strongly

THE CONDUCT OF THE MODLUE

- A. The lectures were clear and easy to understand
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes No

F. Please give overall rating of the course

90% - 100% ()

60% - 70% ()

80% - 90% ()

50% - 60% ()

70% - 80% ()

below 50% ()

Please comment on the strengths of the course and the way it was conducted.

Please comment on the weaknesses of the course and the way it was conducted.

Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

Thank you!!

STUDENT'S STUDY GUIDE
ENDOCRINE AND REPRODUCTION-III MODULE
FOURTH PROFESSIONAL MBBS



TABLE OF CONTENTS

Sr. No	Contents
1.	DISCLAIMER
2.	CURRICULUM FRAMEWORK
3.	MODEL OVERVIEW
4.	WHAT IS STUDY GUIDE
5.	LEARNING METHODOLOGIES
6.	INTRODUCTION
7.	LEARNING OBJECTIVES
8.	THEMES
9.	SPECIFIC LEARNING OBJECTIVES
10.	TEACHING HOURS ALLOCATION
11.	EXAMINATION AND METHODS OF ASSESSMENT
12.	GRADING POLICY
13.	ASSESSMENT BLUEPRINT
14.	RECOMMENDED BOOKS

1. DISCLAIMER

- Developing a study guide is a dynamic process and undergoes iteration according to the needs and priorities.
- This study guide is subjected to the change and modification over the whole academic year.
- However, students are advised to use it as a guide for respective modules.
- The time tables are for guiding purpose. It is to advise that final timetables are always displayed over the notice boards of each lecture hall.
- Students are encouraged to provide feedback via coordinator

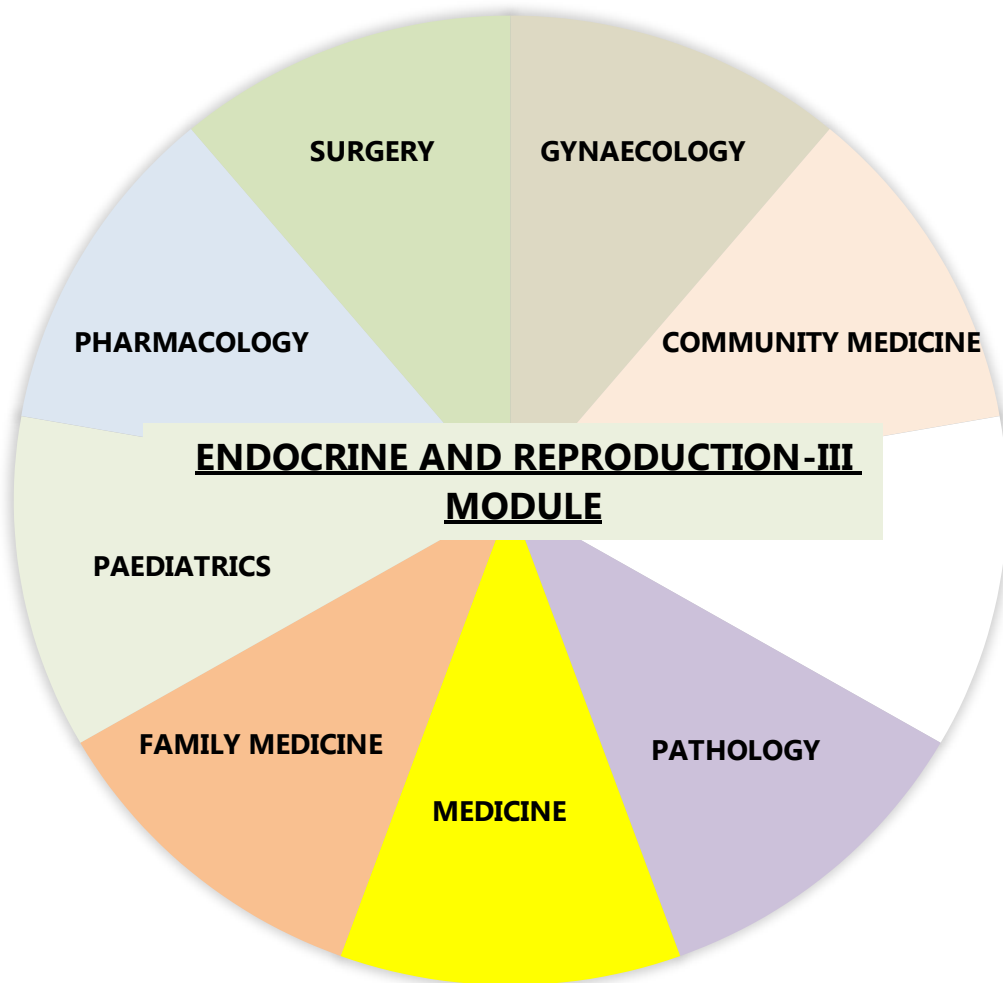
2. CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Eye, ENT, Endocrine and Reproduction-III, Git and Hepatobilliary-III, Neuroscience-II and Renal-II modules which link basic science knowledge to clinical problems.

INTEGRATING DISCIPLINES OF ENDOCRINE AND REPRODUCTION-III

MODULE



3. MODULE OVERVIEW

ENDOCRINE AND REPRODUCTION-III MODULE DETAILS

Course	MBBS
Year	Fourth professional
Duration	6 weeks
Learning Outcomes	The competent Medical Practitioner
Competencies covered	To develop medical professionals who are well - versed, adept, and have the right mindset.
Module Assessment	End module formative assessment
Teaching Methods	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
Assessment Methods	MCQs, SEQs, OSPE, VIVA

ENDROCRINE AND REPRODUCTION -III MODULE COMMITTEE

Sr. No	Names	Department	Designation
MODULE COORDINATOR			
1.	Prof: Dr. Allah Bachayo Rajar	Community Medicine	Professor
COMMITTEE MEMBERS			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

4. WHAT IS STUDY GUIDE

It is an aid to Inform students how student learning program of the module has been organized, to help students organize and manage their studies throughout the module and guide students on assessment methods, rules and regulations.

The study guide:

- Communicates information on organization and management of the module.
- This will help the student to contact the right person in case of any difficulty.
- Defines the objectives which are expected to be achieved at the end of the module.
- Identifies the learning strategies such as lectures, small group teachings.

Module objectives.

- Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- Highlights information on the contribution of continuous on the student's overall performance.
- Includes information on the assessment methods that will be held to determine every student's performance.

Achievement of objectives.

- Focuses on information pertaining to examination policy, rules and regulations.

5. LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations
- Skills session
- Practicals
- Self-Directed Study

• **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

• **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

• **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

• **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practical related to pharmacology, microbiology, and community medicine have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

6. INTRODUCTION

The body produces hormones, which are chemicals that control the function of cells or organs. The endocrine system is composed of glands that generate and secrete these chemicals. These hormones control sexual development and function, as well as the body's growth and metabolism—the body's physical and chemical processes. Once in the bloodstream, the hormones can have an impact on one or more body organs. The hypothalamus, pituitary, thyroid, parathyroid, adrenal glands, pineal body, and reproductive organs (ovaries and testes) are the main glands that make up the endocrine system.

A state of total physical, mental, and social well-being in all aspects pertaining to the reproductive system is known as reproductive health (RH). For people to be healthy generally, reproductive health is crucial. Thus Globally, emphasis is placed mostly on women's reproductive health and overall reproductive health. Even though Pakistan's population's reproductive health status has improved, it still falls well short of the intended Sustainable Development Goal target level. Pakistan's maternal mortality ratio (MMR) stands at 178 per 100,000 live births, with the bulk of deaths coming from avoidable causes associated with pregnancy and delivery. Newborn and maternal health are intimately related. Pakistan's perinatal mortality rate is 64 per 1,000 live births, according to reports.

Common concerns pertaining to mother and child health, such as safe parenting, contraception, abortion, infant care, STDs and HIV/AIDS, and infertility, will be covered in this module. It will also cover men's RH-related problems.

6.1 RATIONALE

Upon entering a medical school, a student must get orientation and an introduction to the medical sciences concerning health and illness. In order to fulfill their dreams of becoming a successful yet moral doctor in the future, students also require a set of guidelines. Pakistan's population is composed primarily of women. Diseases pertaining to the endocrine reproductive systems of men and women make up a sizable portion of medical practice worldwide. The main lessons in this module are around these illnesses as well as pregnancy and conditions connected to it. Given that obstetrics and gynecology will be covered again as a subject in the third spiral, the curriculum appropriately recognizes the importance of these topics. The first module on reproduction included the fundamentals of anatomy, physiology, biochemistry, pharmacology, and pathology. The student will get a deeper understanding of the pathology, clinical presentation, diagnosis, and treatment of reproductive and endocrine problems, as well as normal pregnancy and associated abnormalities, in this module.

6.2 IBN E SINA UNIVERSITY (ISU) VISION:

To become a world-leading organization in rural health and social care research, training, recruitment and best evidence-based practice.

6.3 IBN E SINA UNIVERSITY (ISU) MISSION:

Our Mission is to inspire hope, and contribute to health and well-being by providing the best care to every patient through integrated clinical practice, education and research. To provide a focal point for the development and collation of high-quality research pertinent to rural health and wellbeing. To improve the training, recruitment and retention of a professional workforce within rural communities. To be recognized as an exemplar in rural health and wellbeing on the international stage. To establish a network of individuals and groups that support research, innovation and development in rural health and social care.

7. LEARNING OBJECTIVES

7.1 General learning Objectives:

By the end of this module, the students should be able to:

1. Develop an overview of endocrine system and emphasize the close relationship with nervous and immune systems.
2. Discuss the structure, synthesis, metabolism and molecular mechanism of action of key hormones and explain mechanisms that control hormones secretion
3. Explain the structure, development and functions of the endocrine and reproductive systems.
4. Integrate the pathophysiology of endocrine and reproductive systems into their related disorders (including breast disorders related to reproductive system).
5. Identify the clinical manifestations of excess or deficiency of key hormones applying the basic knowledge in development of a plan of investigation and management.
6. Discuss the structural and functional basis of major reproductive processes and apply the knowledge gained to in the contraception counselling.
7. Explain the basis of infertility and related pathological disorders and develop an understanding of plan for investigations & management.
8. Describe epidemiology and public health importance of major health problems related to endocrine and reproductive systems (including sexually transmitted diseases).

7.2 Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Describe the pathology, clinical features, investigations, and treatment of Hyper and hypopituitarism
2. Describe the pathology, clinical features, investigations, and treatment of Hyper and hypothyroidism, and hyper and hypoparathyroidism
3. Describe the classification, pathogenesis, clinical features, investigations, and treatment of Diabetes mellitus
4. Explain the pathology, clinical features, investigations, and treatment of Hyper and hypoadrenalism
5. Explain the causes of male and female infertility and its management
6. Explain the classification, pathology, and management of testicular tumors
7. Explain benign and malignant breast disease
8. Discuss the etiology, risk factors, clinical features, investigations, and treatment of carcinoma of breast

9. Describe the pharmacokinetics and pharmacodynamics of pituitary, gonadal, pancreatic, thyroid, and adrenocortical hormones, their synthetic analogues and antagonists, and their role in the management of relevant disease conditions
10. Formulate prescriptions for patients with Graves' disease and Diabetes mellitus
11. Discuss the laws related to sexual offenses, and management of a rape victim in forensic aspects
12. Explain the pathophysiology and surgical management of benign prostatic hyperplasia and carcinoma of the prostate

7.3 Skills / Psychomotor Domain:

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

1. Observation and Assistance
2. Performing the skill under supervision
3. Performing the skill independently
4. Link the structure and functional abnormalities of the reproductive system based on the clinical history and signs and symptoms)
5. Obtain a comprehensive history of patient with endocrinological and reproductive disorders.
6. Demonstrate appropriate technique for performing thyroid gland examination.

7.4 Attitude / Affective Domain:

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

1. Respect oneself and one's peers, both when providing and receiving comments.
2. To show patients compassion and understanding.
3. Develop your ability to communicate while keeping a sense of duty to your patients.
4. Showcase appropriate laboratory procedures.
5. Relate to patient and careers vulnerability
6. Demonstrate ethical self-management
7. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
8. Display compassion with patient and colleagues
9. Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease

7.5 Outcomes of Endocrine and Reproduction-III Module

1. Knowledgeable
2. Skillful
3. Community Health Promoter
4. Problem-solver
5. Professional
6. Researcher
7. Leader and Role Model

8. THEMES FOR ENDOCRINE AND REPRODUCTION-III MODULE

S.NO	Themes	Duration
1	Tall/short stature	1 week
2	Neck swelling and Muscle cramps	1 week
3	Excessive thirst and urination	1 week
4	Moon face	1 week
5	Infertility and pregnancy	1 weeks
6	Breast lump	1 week

9. SPECIFIC LEARNING OBJECTIVES THEME WISE

Theme 1: Tall / short stature			
Subject	Topic	Hours	Learning Objectives
Pathology	Pituitary gland- Physiological anatomy	1	<p>Explain the gross and microscopic structure of pituitary gland</p> <hr/> <p>Explain the functions of hormones of the anterior and posterior pituitary gland and their regulation by the Hypothalamus</p>
	Hyperpituitarism/Pituitary adenomas:	1	<p>Explain the causes of hyperpituitarism</p> <hr/> <p>Discuss the gross and microscopic structure of pituitary adenomas, and the hormones secreted from these</p> <hr/> <p>Explain the clinical manifestations of different types of pituitary adenomas</p>
	<ul style="list-style-type: none"> • Prolactinomas • Somatotrophic tumors • Corticotrophic tumors • others 		
	Hypopituitarism	1	Describe the etiology and clinical manifestations of hypopituitarism
Medicine	Acromegaly/Gigantism	2	Explain the etiology, clinical features, investigations, treatment, and complications of Acromegaly/gigantism
	Hyperprolactinemia		Discuss the etiology, clinical features, investigations, and treatment of Hyperprolactinemia

	Hypopituitarism/Sheehan's syndrome		Explain the etiology, clinical features, investigations and treatment of Hypopituitarism and Sheehan's syndrome
Pharmacology	Growth hormone	1	Describe the sources of Growth hormone (old and new sources)
	Growth hormone antagonists (Octreotide and others)		Describe the mechanism of action, clinical uses, and adverse effects of Growth hormone
			Enlist Growth hormone antagonists
			Describe the clinical role of Octreotide in acromegaly
			Describe the route of administration, dosage, and adverse effects of octreotide in acromegaly and gigantism
	Bromocriptine	1	Describe the mechanism of action, clinical uses, and adverse effects of Bromocriptine
Paediatrics	Short stature	1	Describe the method to measure and plot height; and calculate height velocity and midparental, target height to allow early diagnosis of growth disorders in paediatric Patients
			Explain the diagnostic criteria that allow to differentiate causes of growth deficiency
			Discuss the tools for better communication with patients and families and coordination of multidisciplinary care

			Discuss treatment of growth hormone deficiency or other diseases responsible for short stature and their appropriate management
Neurosurgery	Surgical management of pituitary adenoma	1	Explain the surgical treatment and complications of pituitary macro/microadenomas
Community medicine	Occupational Health: Introduction	1	Define occupational health
			Discuss importance of occupational health
			Describe ergonomics
			Describe principles and responsibilities of occupational health officer [OHO]
	Physical hazards	1	Enumerate physical hazards (heat, cold, noise, light, vibrations, pressure effect, Radiations)
			Discuss its ill effects on health
			Discuss its preventive measures
	Chemical hazards	1	Enumerate chemical hazards (inorganic dust diseases, organic dust diseases, metals & chemicals)
			Discuss its ill effects on health
			Discuss preventive measures
	Mechanical, Biological & Psychosomatic hazards	1	Describe mechanical hazards
			Discuss control measures of mechanical hazards
			Discuss control measures of mechanical hazards
			Discuss control measures of biological hazards
			Describe psychosomatic stressors
		Discuss control measures of psychosomatic Stressors	
Animal hazards	1	Describe types, prevalence, and statistics of snake bite	

			Discuss prevention and management of snake bite
			Discuss causes of poor management with respect to awareness and vaccination
	Preventive measures, health insurance, social security schemes	1	Describe various preventive measures of occupational hazards (Medical engineering and legal measure)
			Discuss role and benefits of health insurance
			Discuss social security and its benefits
	Demography :Introduction	3	Define demography and various related terms
			Explain and interpret population pyramid
			Explain demographic transition
			Describe the causes of high and low fertility and mortality
	Growth rate		Define population growth rate, CDR, CBR
			Describe growth rate
			Describe population explosion & its implications
			Explain advantages of population control
	Demographic indicators		Describe the demographic indicators of Pakistan
MEDICAL EDUCATION	Dealing with patients	1	Serve the patient as an individual, considering lifestyle, beliefs, and support system
	Community Need analysis		Identify the health care needs of community.

Theme 2: Neck swelling and muscle cramps

Pathology	Hyperthyroidism including Grave`s disease	1	Discuss the etiology, pathogenesis and morphology of Hyperthyroidism and Grave`s disease
	Hypothyroidism	1	Discuss the etiology, pathogenesis, morphology, and clinical features of Hypothyroidism
	Thyroiditis	1	Discuss the classification, morphology, and presentations of Thyroiditis
	Multinodular goitre		Explain the etiology, clinical features, and complications of multinodular goitre
	Thyroid malignancies	1	Classify thyroid malignant disorders
	Explain morphology, clinical features, and prognosis of thyroid malignancies		
Medicine	Hyperthyroidism including Grave`s disease	1	Discuss the etiology, clinical features, investigations and treatment and prognosis of Hyperthyroidism and Grave`s disease
			Explain the pathogenesis, clinical features, and management of Grave`s Ophthalmopathy
	Hypothyroidism	2	Discuss the types, etiology, clinical features, investigations, and treatment of Hypoparathyroidism
	Thyroiditis		Describe the classification, etiology, clinical features, investigations, and treatment of Thyroiditis
	Multinodular goitre	1	Discuss the etiology, clinical features, investigations, and management approach to a patient with multinodular goitre
Thyroid malignancies	Classify thyroid malignant disorders		

			Discuss the pathogenesis, clinical features, investigations, and management of Thyroid malignancies
	Hyperparathyroidism	1	Discuss the types, etiology, clinical features, investigations, and treatment of Hyperparathyroidism
	Hypoparathyroidism		Discuss the types, etiology, clinical features, investigations, and treatment of Hypoparathyroidism
Pharmacology	Thyroid hormones	1	Enlist thyroid preparations (used clinically as well as older-obsolete ones)
			Describe the mechanism of action, pharmacological effects, clinical use, and adverse effects of Thyroxine (T ₄) and Triiodothyronine (T ₃)
	Antithyroid drugs	2	Classify Antithyroid drugs
			Describe the mechanism of action, clinical use, and adverse effects of Thioamides
			Describe the mechanism of action, clinical use, and adverse effects of Potassium iodide
			Describe Lugol's iodine solution
	Describe the mechanism of action, clinical use, and adverse effects of Radioactive iodine (¹³¹ I)		
	Describe the use of β-blockers in hyperthyroid patients		
Paediatrics	Congenital hypothyroidism	1	Discuss the types and clinical features of hypoparathyroidism
			Discuss investigations and treatment of Hypoparathyroidism
Community medicine	Iodine deficiency / Goitre	1	Discuss sources of iodine and goitrogens
			Discuss iodine deficiency disorders and daily requirement of Iodine
			Explain the epidemiological determinants and control strategies for iodine deficiency/goitre

Theme 3: Excessive thirst and urination

Pathology	Diabetes Mellitus <ul style="list-style-type: none"> • Classification • Diagnosis • Insulin resistance • Beta cell dysfunction • Complications <ul style="list-style-type: none"> ○ Acute ○ Chronic 	1	Classify Diabetes mellitus	
			Explain the diagnostic criteria of DM	
			Explain the mechanisms of insulin resistance	
			Explain the mechanisms of beta cell dysfunction	
			Explain the acute and chronic complications of DM	
	Pancreatic neuroendocrinetumors	1	89	Describe the types and clinical presentations of pancreatic neuroendocrine tumors
Medicine	Diabetes mellitus <ul style="list-style-type: none"> • Types • Insulin resistance syndromes • Clinical features investigations • Treatment • Complications 	2	Explain the different types of DM	
			Discuss the mechanism presentation, and management of insulin resistance	
			Discuss the clinical features of DM	
			Explain the diagnostic workup of a patient with DM	
			Classify the pharmacological treatment of DM	
			Explain lifestyle modifications in the management of DM	
		1	Discuss the acute and chronic complications of DM	
	Hypoglycemic coma	1	Explain the etiology, clinical features and management of hypoglycemic coma	
	Diabetic ketoacidosis	1	Explain the precipitating factors, diagnostic workup, and treatment of a patient with diabetic	

			ketoacidosis
	Hyperosmolar non-ketotic diabetic coma		Explain the precipitating factors, diagnostic work up, and treatment of a patient with Hyperosmolar non-ketotic diabetic coma
	Lactic acidosis		Explain the precipitating factors, diagnostic workup, and treatment of a patient with Lactic acidosis
	Posterior pituitary gland	1	Discuss the functions of hormone Vasopressin secreted by the posterior pituitary gland
			Explain the etiology, clinical features, investigations, and treatment of Diabetes insipidus
	SIADH		Explain the etiology, and pathogenesis of SIADH secretion
Pharmacology	Insulin	1	Classify Insulins
			Describe the sources of Insulin
			Describe the differences between the human, bovine and porcine Insulins
			Describe the mechanism of action and clinical uses of Insulin
			Describe the complications of Insulin therapy
			Describe the management of hypoglycemia caused by Insulin
			Describe the management of diabetic ketoacidosis
	Oral hypoglycemic drugs	2	Classify oral hypoglycemic drugs
			Enlist euglycaemic drugs
			Describe the mechanism of action and adverse effects of Sulphonylureas

			Describe the mechanism of action and clinical use of Meglitinides
			Describe the mechanism of action, clinical use, and adverse effects of Biguanides
			Describe the mechanism of action, clinical use, and adverse effects of Thiazolidinediones
			Describe the mechanism of action, clinical use, and adverse effects of α -glucosidase inhibitors
			Describe the mechanism of action and clinical use of Pramlintide, Exenatide and Sitagliptin
	Glucagon	1	Describe the mechanism of action and clinical use of Glucagon
	Vasopressin/Desmopressin		Describe the mechanism of action, clinical use, and adverse effects of Desmopressin
			Enlist the drugs used in nephrogenic diabetesinsipidus
Paediatrics	Management of Type 1 Diabetes mellitus in children	1	Enumerate the blood glucose parameters and the clinical signs for an early diagnosis of diabetes in a child. Recognize how diabetes may present in young children or babies, to make the diagnosis and prevent coma or death Plan investigations and management plan for anewly diagnosed and a known diabetic child. Enumerate the different types of insulins.
Community medicine	Non-communicable diseases: Prevention of diabetes mellitus	2	Discuss Prevalence of diabetes mellitus globally and in Pakistan Discuss modifiable and non-modifiable riskfactors for diabetes mellitus Describe epidemiological determinants of diabetes mellitus Discuss screening methods for diabetes mellitus Discuss the prevention (Primary, secondary, and tertiary) and care of diabetes mellitus

Theme 4: Moon face

Physiology	Physiology of the Adrenal cortical hormones	1	Explain the gross and microscopic structure of Adrenal gland
			Explain the synthesis and functions of hormones of the adrenal cortex and their regulation by the anterior pituitary
Pathology	Hypercortisolism and Cushing`s syndrome	1	Discuss the etiology of Hypercortisolism
			Explain the etiology and clinical features, of Cushing`s syndrome
	Hyperaldosteronism	1	Explain the etiology, and presentation of primary Hyperaldosteronism
			Explain the etiology, clinical features, of Adrenogenital syndrome
	Adrenal insufficiency <ul style="list-style-type: none"> • Primary (Acute and Chronic) • Secondary 	1	Classify adrenal insufficiency in the context of its etiology
			Discuss the clinical presentations and complications of adrenal insufficiency
Adrenal neoplasms	1	Discuss the types of adrenal neoplasms	
		Explain the morphology, and clinical features of adrenal neoplasma	
Pheochromocytoma	1	Explain the morphology, and clinical features of Pheochromocytoma	
Multiple Endocrine Neoplasia syndromes (MEN)		Classify Multiple endocrine neoplasia syndrome	
		Explain the morphology and clinical features of MEN	

Medicine	Hypercortisolism and Cushing`s syndrome	1	Explain the etiology, clinical features, diagnostic workup, and management of Hypercortisolism/Cushing`s syndrome
	Primary Hyperaldosteronism	1	Explain the etiology, clinical features, diagnostic workup, and management of Primary Hyperaldosteronism
	Adrenogenital syndrome	1	Explain the etiology, clinical features, diagnostic workup, and management of Adrenogenital syndrome
	Adrenal insufficiency <ul style="list-style-type: none"> • Primary (Acute and Chronic) • Secondary 	1	Classify adrenal insufficiency
			Explain the etiology, clinical features, investigations, and treatment of primary Addison`s disease
			Explain the etiology, clinical features, investigations, and treatment of pituitary adrenal insufficiency
Adrenal neoplasms	1	Explain the types of adrenal tumors	
		Discuss the clinical presentations, diagnostic workup, and treatment of adrenal tumors	
	Pheochromocytoma	1	Explain the clinical features, investigations, management, and complications of Pheochromocytoma

	Gastro-entero-pancreatico-neuroendocrine tumors (GEP-NETs) including Carcinoid tumors		Explain the clinical features, investigations, management of GEP-NETs/Carcinoid tumors
Pharmacology	Glucocorticoids	1	Classify Glucocorticoids Describe the mechanism of action, pharmacological effects, clinical uses, and adverse effects of glucocorticoids Describe dexamethasone suppression test
	Glucocorticoid antagonists/synthesis inhibitors	1	Enlist Glucocorticoid antagonists/synthesis inhibitors Describe the mechanism of action, clinical uses and adverse effects of Mifepristone, Ketoconazole, Metyrapone and Aminoglutethimide
	Aldosterone antagonists	1	Describe the mechanism of action, clinical uses, and adverse effects of Spironolactone (apart from being used as diuretic)
Community medicine	Introduction to nutrition, basic measurements & allowances Macronutrients	8	Classify nutrients Discuss quality of nutrients in diet Discuss the balanced diet Discuss energy value of different nutrients Describe classification of macronutrients Discuss the functions and importance of various macronutrients Discuss daily allowance of macro nutrients
	Micronutrients -Vitamin deficiencies allowances & control Micronutrients -mineral deficiencies allowances and control Undernutrition – Protein calorie malnutrition and		Discuss the diseases caused by their deficiency and excess Describe classification of micronutrients Discuss the function and importance of various vitamins Discuss daily allowances of vitamins Discuss diseases caused by their deficiency Discuss the function and importance of various minerals essential for health Discuss daily allowance of minerals intake Discuss diseases caused by their deficiency Define undernutrition and its classification Discuss protein calorie malnutrition & its causes

	control	Describe the various classifications for assessment of PEM
	Over-nutrition / obesity and it's control	Discuss control strategies of malnutrition Define obesity Calculate BMI Discuss Epidemiology of obesity. enumerate Causes of obesity. Explain the Complications of obesity Formulate a management plan for obesity Discuss Prevention of obesity

Theme 5: Infertility and pregnancy

Pathology	Testicular tumors	1	Classify testicular tumors
			Explain the gross and microscopic morphology of
			benign and malignant testicular tumors
			Discuss the staging and prognosis of testicular
			malignant tumors
	Prostatic disorders	2	Explain the etiology and morphology of Prostatitis
	<ul style="list-style-type: none"> • Prostatitis • Benign prostatic hyperplasia (BPH) • Prostatic carcinoma 		Explain the gross and microscopic morphology and complications of BPH
			Explain the clinical features, types and staging of prostatic carcinoma
	Sexually transmitted diseases (STDs)	1	Explain the types of STDs
	<ul style="list-style-type: none"> • Syphilis • Gonorrhoea 		Explain the stages, morphology, clinical features, and complications of Syphilis
		Name the organisms causing Gonorrhoea and its clinical features	
Introduction to gynecological cancers	1	Enlist different types of gynecological cancers	
Cervical carcinoma		Explain the gross and microscopic morphology, clinical features and staging of Cervical carcinoma	
Endometritis	1	Explain the etiology and pathogenesis of endometritis	
Uterine fibroids		Explain the etiology and morphology of uterine fibroids	
Endometriosis		Explain the etiology, pathogenesis and morphology of endometriosis	
Endometrial hyperplasia and endometrial	1	Explain the etiology, pathogenesis, morphology of Endometrial hyperplasia	

	carcinoma		/carcinoma
	Polycystic ovarian disease	1	Explain the etiology, risk factors, clinical features, and morphology of Polycystic ovary syndrome
	Tumors of the ovary <ul style="list-style-type: none"> • Benign • malignant 	1	Classify benign and malignant tumors of the ovary
			Explain the gross and microscopic morphology, clinical features, staging and complications of ovarian carcinoma
Gynaecology	Anatomy of the reproductive tract	1	Describe the anatomy of the perineum, the vagina, cervix and uterus, the adnexa and ovary
	Menopause	1	Define Menopause.
			Describe physiological and non-physiological menopause
			Explain the clinical effects of menopause on women
			Outline the assessment of menopausal women, based on modifiable and non-modifiable risk factors.
			Explain the management of menopause
			Describe the types, side-effects, relative and absolute contraindications of hormone replacement therapy (HRT)
	Contraception	1	Define contraception
			Classify contraceptive methods
			Explain their mechanisms of action, efficacy, and failure rates
			Explain the risks and benefits of each method

		Identify the complications of different contraceptive methods	
	Polycystic ovary syndrome	1	Explain the risk factors, etiology, clinical features, investigations, treatment, complications, and prognosis of polycystic ovary syndrome
	Uterine fibroids		Explain the risk factors, clinical features, and management of uterine fibroids
	Endometrial cancers	1	Explain the risk factors, clinical features, investigations, prognosis, and management of endometrial carcinoma
	Cervical carcinomas		Explain the risk factors, clinical features, investigations, prognosis, and management of cervical carcinoma
	Female infertility	1	Define infertility
			Discuss the causes and management of female infertility
	Malignant diseases of the ovaries	1	Classify benign and malignant diseases of the ovaries
			Explain the clinical features, diagnosis, serological markers, staging, management and complications of ovarian carcinoma
Uterovaginal prolapse	1	Describe the etiology, clinical features, complications, and management of Uterovaginal prolapse	
Urinary incontinence	1	Classify urinary incontinence	

			Explain the etiology, clinical features, management, and prevention of urinary incontinence
	Endometriosis	1	Define endometriosis Explain the etiology, clinical features, investigations, and management of Endometriosis
	Abnormal uterine bleeding	1	Explain the etiology of abnormal uterine bleeding Describe the diagnostic approach to a patient with abnormal uterine bleeding
	Miscarriage	1	Define miscarriage Explain the etiology, risk factors, management, and prevention of miscarriage
	Ectopic gestation		Describe the etiology, clinical features, diagnosis, and management of ectopic gestation
	Gestational trophoblastic diseases (GTDs)	1	Classify GTDs Explain the etiology, clinical features, diagnosis, management, and complications of H. Mole Explain the etiology, clinical features, diagnosis, management, and complications of Choriocarcinoma
	Vaginal discharge and STDs	1	Explain the etiology and diagnostic workup of vaginal discharge Describe the risk factors, etiology, clinical features, management, complications, and prevention of STDs

Pharmacology	Gonadotropins (FSH & LH) and human chorionic gonadotropin	1	Describe the mechanism of action, clinical uses, and adverse effects of Gonadotropins (FSH & LH) and human chorionic gonadotropin (hCG) Describe the role of gonadotropins in male infertility
	Gonadotropin-releasing hormone and analogues (Gonadorelin and others)	1	Describe the mechanism of action, clinical uses and adverse effects of Gonadotropin-releasing hormone and analogues (Gonadorelin and others)
	Oxytocin	1	Describe the mechanism of action, clinical uses, and adverse effects of Oxytocin
	Oestrogens	1	Classify Oestrogens
			Describe the mechanism of action, organ system effects, clinical uses, adverse effects, and contraindications of Oestrogens Describe Premarin
Progestins	1	Classify Progestins	
			Describe the mechanism of action, organ system effects, clinical uses, adverse effects, and contraindications of Progestins
	Oral contraceptives	2	Classify Oral contraceptives Describe the mechanism of action, organ system effects, clinical uses, adverse effects, and contraindications of oral contraceptive pills

		Describe mini pills with their advantages and disadvantages
		Describe post-coital contraceptives
Parenteral and implantable contraceptives	1	Describe the use of Parenteral (Medroxyprogesterone) and implantable (Norplant system) contraceptives
Ovulation-inducing agent (Clomiphene)	1	Describe the mechanism of action, clinical use, and adverse effects of Clomiphene
Mifepristone		Describe the mechanism of action, clinical uses, and adverse effects of Mifepristone
Danazol		Describe the mechanism of action, clinical uses, and adverse effects of Danazol
Androgens and anabolic steroids	1	Enlist Androgens and anabolic steroids
		Describe the mechanism of action, clinical uses, and adverse effects of androgen preparations
Antiandrogens	1	Classify antiandrogens
		Describe the role of Ketoconazole as steroid synthesis inhibitor, its clinical uses, and adverse effects
		Describe the mechanism of action and clinical use of Finasteride
		Describe the mechanism of action and clinical use of Cyproterone acetate
		Describe the role of Spironolactone as androgen receptor blocker and its use in this context
Male contraception		Enlist the drugs used for male contraception

			Describe the role of Gossypol as male contraceptive agent
Urology/Surgery	Causes of male infertility	1	Discuss the causes of male infertility
			Explain the diagnostic workup of a male infertile patient
Surgery	Cryptorchidism	1	Define Cryptorchidism
		1	Explain the etiology, complications and management of Cryptorchidism
	Hydrocele and varicocele		Explain the cause, clinical features, complications and surgical management of hydrocele and varicocele
	Benign prostatic hyperplasia	1	Explain the etiology, clinical features, complications, and management of BPH
	Carcinoma of prostate		Explain the etiology, clinical features, complications, staging, management, and prognosis of carcinoma of the prostate
Community medicine	Safe motherhood	1	Define reproductive health
			Describe components of reproductive health
			Define safe motherhood
			Discuss pillars of safe motherhood
	Antenatal care	1	Discuss antenatal care
			Discuss antenatal visits as per WHO
Family planning and post abortion care	1	Define family planning	
		Discuss different methods of family planning	
		Discuss contraceptive prevalence rate and factors responsible for low CPR	

			Discuss Post abortion care
		2	Define IMNCI & IMCI
	Child promotion and development strategies (IMNCI, IMCI and growth monitoring)		Describe components of IMNCI
			Enumerate principles of IMNCI
			Discuss growth monitoring
	Prevention of reproductive health diseases	1	Discuss different reproductive health diseases
			Discuss STIs in detail
			Discuss risk factors and Prevention of CA cervix
Family medicine	Menstrual disorders	1	Enlist menstrual disorders
			Explain the etiology, investigations and management of menstrual disorders in primary care
	Menopause		Explain the clinical features, and management of menopausal symptoms and complications in primary care
	Contraception	1	Explain the types of contraception methods
			Explain the merits and demerits of different contraceptive techniques
			Describe the complications associated with the use of oral and injectable contraceptives
	Vaginal discharge and STDs	1	Explain the etiology of vaginal discharge
			Describe the diagnosis and management of vaginal discharge in primary care
			Classify Sexually transmitted infections in females
			Describe the clinical features, investigations, and management of STDs in females in primary care

Theme 6: Breast lump

Pathology	Fibrocystic changes	1	Explain the fibrocystic changes in breast including cysts, fibrosis, epithelial hyperplasia and adenosis
	<ul style="list-style-type: none"> Cysts and fibrosis Epithelial hyperplasia Adenosis 		
	Fibro-adenoma		Explain the morphology of Fibro-adenoma of the breast
	Papilloma		Explain the morphology of papilloma of the breast
	Carcinoma of the breast	1	Explain the risk factors, etiopathogenesis, clinical features, staging, and complications of carcinoma of the breast
	Gynecomastia		Discuss the causes and morphology of Gynecomastia
Surgery	Investigations of breast diseases	1	justify the investigations of a patient with a breast lesion
	Benign breast diseases		Classify benign breast diseases
	Malignant breast diseases	2	Classify malignant breast diseases
			Discuss the risk factors, etiology, clinical features, investigations, management, and prognosis of a patient with breast cancer
			Describe the role of hormone receptors in breast cancer
			Explain the complications of breast cancer surgery

			Discuss the role of pharmacological treatment options in breast cancer management
			Explain the role of selective estrogen receptors modulators in the prevention of breast cancer in high-risk women
Pharmacology	Selective Estrogen Receptor Modulators (SERMs)- Tamoxifen and others	1	Enlist Selective Estrogen Receptor Modulators (SERMs)
			Describe the mechanism of action and clinical uses of Tamoxifen
Community medicine	Breast feeding	1	Discuss advantages of breast feeding
			Discuss artificial feeding
			Discuss baby friendly hospital initiative
			Discuss guidelines on infant and child feeding
	Screening and prevention of breast cancer		Discuss different methods of screening for breast cancer
			Discuss levels of prevention of breast cancer
Radiology	Radiological approaches to breast cancer screening	1	Explain the indications, procedure, and interpretation of ultrasound and mammography in the investigation of breast lumps
MEDICAL EDUCATION	Counselling- Breaking bad news	1	Explain the concept of SPICES model of breaking bad news.

Practical work

Pharmacology	Graves' disease	2	Formulate prescription for a patient with Graves' disease
	Diabetes mellitus	2	Formulate prescription for a patient with type 1 and type 2 Diabetes mellitus
Pathology	Glucose estimation	2	Check glucose in urine
			Check blood glucose in each sample
	Goitre	2	Identify the microscopic features of multinodular goitre
	Pap smear	2	Interpret a pap smear slide
	Fibroids	2	Identify the microscopic features of uterine fibroids
	Carcinoma breast	2	Identify the microscopic features of carcinoma of the breast
Community medicine	Contraception	2	Identify the contraceptive device/drug
			Explain the merits and demerits
			Discuss the method of administration of the given device/drug
	Mother and child health	2	Identify the chart
			Devise a schedule plan for antenatal visits as per WHO criteria
	EPI schedule	2	Counsel the mother for EPI schedule
	Vaccination and immunization	2	Identify the vaccine
			Explain its uses
			Discuss its schedule of administration
			Discuss the results of VVM (vaccine vial monitor) and its uses in epidemics
	IMCI-anthropometric measures / Shakir's tape	2	Identify the model
			Measure the mid-arm circumference
			Calculate the weight and height of the child
			Interpret the results

	Growth chart	2	Identify the chart
			Plot the graph using a scenario
			Interpret different parts of the chart
	Demographic indicators	2	Interpret the given demographic indicator (population pyramid, HDI, PQLI, Growth rate and dependency ratio)

9.1 TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
RESEARCH AND BIOSTATICS						
Normal distribution	Normal distribution	Define normal distribution Describe normal distribution Calculate and graphically represent normal distribution Explain it's use & significance in relation to data Describe percentile and interquartile range Calculate and depict percentile and interquartile range Explain use and significance of these in different situations	LGF	Endocrine and Reproduction	1 hr	MCQ
Confidence Interval, Confidence level, Standard error	Confidence interval, Confidence level, standard error	Define confidence level and interval Describe confidence level and interval Calculate confidence level and interval Explain their use and significance in different situations	LGF		1 Hr	

P value, critical region, rejection region, alpha beta errors	P value, critical region, rejection region, α β errors	Define P value, critical region, rejection region, α β errors Describe P value, critical region, rejection region, α β errors Calculate P value, critical region, rejection region, α β errors Describe their use and significance in different situations	SGD		2 hrs	
Z test & it's application, Types / shapes of frequency distribution	'z' test & it's application in hypothesis testing, applications of parametric and non parametric tests	Define & Describe 'z' test Describe it's use in different statistical settings Calculate 'z' test Explain it's application in hypothesis testing Interpret and apply to clinical settings	LGF		1 hr	
T test & it's application	t' test & it's application in hypothesis testing, degree of freedom	Define & Describe 't' test Explain it's use in different statistical settings Calculate 't' test Describe it's application in hypothesis testing Interpret and apply to clinical settings Calculate degree of freedom	LGF		1 hr	

Chi square test & it's application	Chi square & it's application in hypothesis testing	Describe 'x2' test Describe it's use in different statistical settings Calculate 'x2' test Explain it's application in hypothesis testing Interpret and apply to clinical settings	LGF		2 hr	
Correlation, regression	Correlation, regression,	Describe Correlation & Regression Interpret and apply to clinical settings Know the use of Transformations for Not Normal distributions	LGF		1 Hr	

9.2 CLINICAL SCIENCES SUBJECT

ENDOCRINE AND REPRODUCTION MODULE - III

S. No	Clinical Sciences Subjects	Learning Objectives	Hours	Learning Strategy
1.	FAMILY MEDICINE	Vaginal Discharge	1	Lecture
	Women's Health	Cervical and Breast Screening	1	Lecture

9.3 CLINICAL ROTATION SCHEDULE

Duration	11 weeks			11 weeks			9 weeks	5 weeks
	5wks	3wks	3wks	5wks	3wks	3wks		
Disciplines	Medicine	Medicine & Allied	Paeds	Surgery	Surgery & Allied	Gynae Obs	EYE	ENT
Total hours*	65	39	39	65	39	39	100	64

* 2.6 clinical rotation hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

10. TEACHING HOURS ALLOCATION

S#	Subject	Hours (approximate)	Practical Hours
1	Pathology	44	10
2	Pharmacology	23	8
3	Medicine	19	-
4	Community medicine	30	14
5	Gynaecology	14	-
6	Surgery	05	-
7	Paediatrics	02	-
8	Urology	01	-
9	Neurosurgery	01	-
10	Family medicine	05	-
11	MEDICAL EDUCATION	2	-
12	Research	9	-
	TOTAL	155	32

11. EXAMINATION AND METHODS OF ASSESSMENT

11.1 EXAMINATION RULES AND REGULATIONS

- Student must report to examination hall/venue, in time for smooth conduction of the exams.
- No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
- No students will be allowed to sit in exam without College ID Card, and Lab Coat
- Students must sit according to their roll numbers mentioned on the seats.
- Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) - Sharing is prohibited
- Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
- Students must not possess any written material or communicate with their fellow students
- Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
- **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

11.2 ASSESSMENT

11.2.1 Internal: Total 10% (20 marks)

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
 - **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
 - **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:

- NOTE: at least 75% attendance is mandatory to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

11.2.2 University Annual Exam: Total 90%

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

11.3 METHODS OF ASSESSMENT

11.3.1 Multiple Choice Questions

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

11.3.2 Short Essay Questions (SEQs):

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

11.3.3 OSPE / OSCE

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas

- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
 - Interactive Stations:
 - In this station, examiner ask questions related to the task within the allocated time.
 - Observed Stations:
 - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
 - Unobserved (static) Stations:
 - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
 - Rest station
 - It is a station where there is no task given and in this time student can organize his/her thoughts

11.3.4 ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

11.3.5 WEEKLY TESTS

- The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

- The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.
- It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.
- Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

11.3.6 POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD
- Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class
- PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

12. GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable

13. ASSESMENT BLUEPRINT

ENDOCRINE AND REPRODUCTION-III MODULE

Assessment is based on Table of Specification (TOS)

	ASSESMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

14. RECOMMENDED BOOKS

S#	Subjects	Resources
1.	Anatomy	A. GROSS ANATOMY 1. K.L. Moore, Clinically Oriented Anatomy B. EMBRYOLOGY 1. Keith L. Moore. The Developing Human 2. Langman's Medical Embryology
2.	Community Medicine	1. Community Medicine by Parikh 2. Community Medicine by M Ilyas 3. Basic Statistics for the Health Sciences by Jan W Kuzma
3.	OBGYN	1. Obstetrics by Ten Teachers, Louise C. Kenny, Jenny E. Myers 2. Gynaecology by Ten Teachers, Louise Kenny, Helen Bickerstaff 3. Hacker & Moore's Essentials of Obstetrics and Gynecology 4. Textbook of Gynecology, Rashid Latif Khan 5. Fundamentals of Gynaecology, Dr Arshad Chohan
4.	Pathology	1. Robbins & Cotran, Pathologic Basis of Disease, 9th edition. 2. Rapid Review Pathology, 4th edition by Edward F. Goljan MD
5.	Physiology	1. Textbook Of Medical Physiology by Guyton And Hall 2. Ganong's Review of Medical Physiology 3. Human Physiology by Lauralee Sherwood 4. Berne & Levy Physiology 5. Best & Taylor Physiological Basis of Medical Practice
6.	Paeds	Basis of Pediatrics (8th Edition Pervez Akbar)



IBN-E-SINA UNIVERSITY MIRPURKHAS
FACULTY OF BASIC MEDICAL SCIENCES



Course Feedback Form

Course Title: _____

Semester/Module _____ Dates: _____

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

THE DESIGN OF THE MODLUE

- A. Were objectives of the course clear to you? Y N
- B. The course contents met with your expectations
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with
l. Too few examples 5. Adequate examples
- E. The level of the course was
l. Too low 5. Too high
- F. The course contents compared with your expectations
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?
l. Not at all 5. Very strongly

THE CONDUCT OF THE MODLUE

- A. The lectures were clear and easy to understand
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes No

F. Please give overall rating of the course

90% - 100% ()

60% - 70% ()

80% - 90% ()

50% - 60% ()

70% - 80% ()

below 50% ()

Please comment on the strengths of the course and the way it was conducted.

Please comment on the weaknesses of the course and the way it was conducted.

Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

Thank you!!

STUDENT'S STUDY GUIDE
RENAL-II MODULE
FOURTH PROFESSIONAL MBBS



TABLE OF CONTENTS

Sr. No	Contents
1.	DISCLAIMER
2.	CURRICULUM FRAMEWORK
3.	MODEL OVERVIEW
4.	WHAT IS STUDY GUIDE
5.	LEARNING METHODOLOGIES
6.	INTRODUCTION
7.	LEARNING OBJECTIVES
8.	THEMES
9.	SPECIFIC LEARNING OBJECTIVES
10.	TEACHING HOURS ALLOCATION
11.	EXAMINATION AND METHODS OF ASSESSMENT
12.	GRADING POLICY
13.	ASSESSMENT BLUEPRINT
14.	RECOMMENDED BOOKS

1. DISCLAIMER

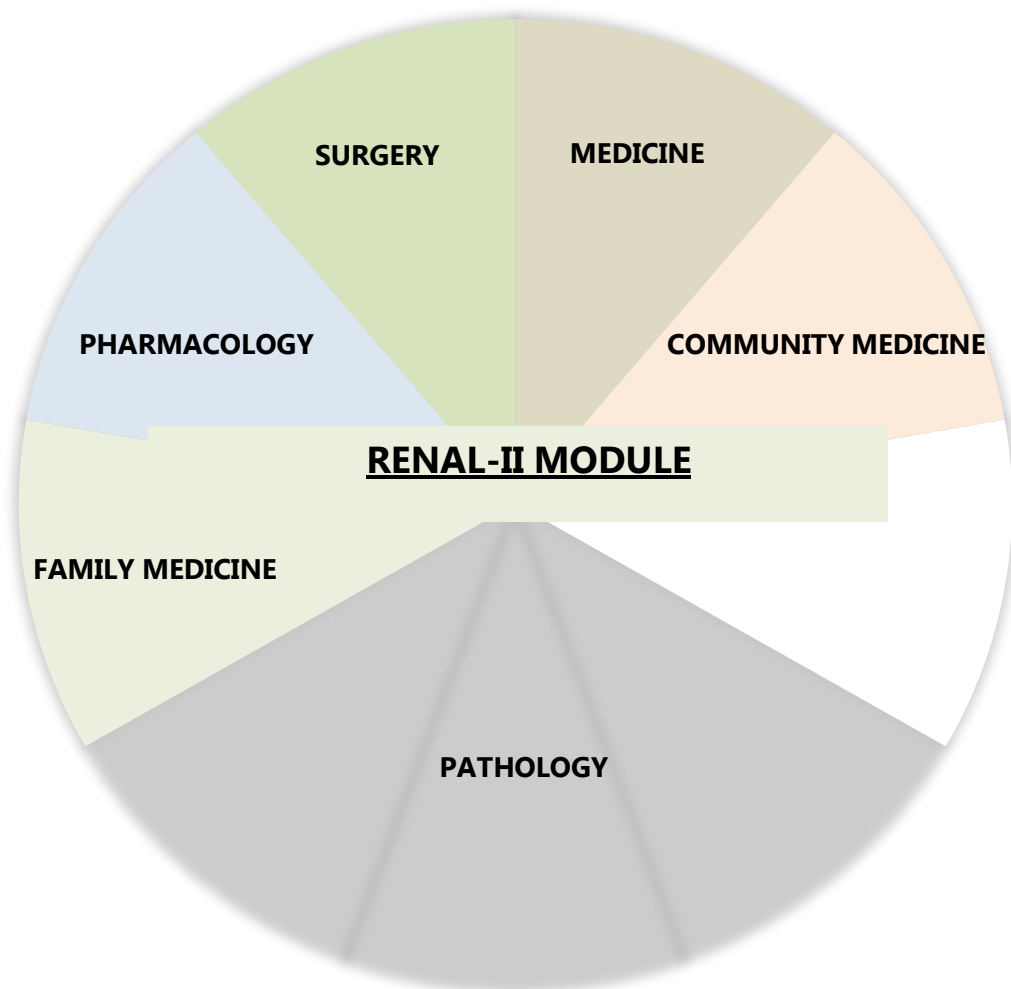
- Developing a study guide is a dynamic process and undergoes iteration according to the needs and priorities.
- This study guide is subjected to the change and modification over the whole academic year.
- However, students are advised to use it as a guide for respective modules.
- The time tables are for guiding purpose. It is to advise that final timetables are always displayed over the notice boards of each lecture hall.
- Students are encouraged to provide feedback via coordinator

2. CURRICULUM FRAMEWORK

An educational strategy known as integrated curriculum places a strong emphasis on interdisciplinary learning, in which students gain knowledge by integrating it from several topic areas. By integrating many subjects and disciplines into a cohesive curriculum, this method seeks to give students a more relevant and interesting learning experience. Integrated curriculum means that subjects are presented as a meaningful whole for better understanding of basic sciences in relation to clinical experience and application.

Integrated curriculum comprises of system-based modules such as Eye, ENT, Endocrine and Reproduction-III, Git and Hepatobilliary-III, Neuroscience-II and Renal-II modules which link basic science knowledge to clinical problems.

INTEGRATING DISCIPLINES OF RENAL-II MODULE



3. MODULE OVERVIEW

RENAL-II MODULE DETAILS

Course	MBBS
Year	Fourth professional
Duration	4 weeks
Learning Outcomes	The competent Medical Practitioner
Competencies covered	To develop medical professionals who are well - versed, adept, and have the right mindset.
Module Assessment	End module formative assessment
Teaching Methods	Interactive Lectures, Demonstrations, Case Based Learning, Practical Lab, Small Group Discussions, Self-Study Sessions, E-Learning, Clinical rotations
Assessment Methods	MCQs, SEQs, OSPE, VIVA

RENAL-II MODULE COMMITTEE

Sr. No	Names	Department	Designation
MODULE COORDINATOR			
1.	Prof: Dr. Allah Bachayo Rajar	Community Medicine	Professor
COMMITTEE MEMBERS			
1.	Prof: Dr. Syed Razi Muhammad	Surgery	Chancellor ISU
2.	Prof: Dr. Shams Ul Arfeen Khan	Biochemistry	Vice Chancellor ISU
3.	Prof: Dr. Aijaz Ahmed Memon	Surgery	Pro Vice Chancellor ISU

4. WHAT IS STUDY GUIDE

It is an aid to Inform students how student learning program of the module has been organized, to help students organize and manage their studies throughout the module and guide students on assessment methods, rules and regulations.

The study guide:

- Communicates information on organization and management of the module.
- This will help the student to contact the right person in case of any difficulty.
- Defines the objectives which are expected to be achieved at the end of the module.
- Identifies the learning strategies such as lectures, small group teachings.

Module objectives.

- Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- Highlights information on the contribution of continuous on the student's overall performance.
- Includes information on the assessment methods that will be held to determine every student's performance.

Achievement of objectives.

- Focuses on information pertaining to examination policy, rules and regulations.

5. LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
- Clinical Rotations
- Skills session
- Practicals
- Self-Directed Study

• **INTERACTIVE LECTURES:**

Large group discussions are not the same as traditional lecture formats. When a teacher or instructor uses images, radiographs, patient interaction recordings, etc. to discuss a topic or typical clinical scenario, the lecture becomes interactive. When they are given tiny activities to do that allow them to apply the knowledge they have learned throughout the session and are asked questions, students actively participate in the learning process.

• **SMALL GROUP DISCUSSIONS (SGDS):**

With the use of SGD, students can take an active role in their education, clarify ideas, develop psychomotor skills, and develop a positive attitude. Discussion themes, patient interviews, and clinical cases are used to design sessions in an organized manner. Pupils are inspired to express their ideas, apply the fundamental knowledge they have learned from lectures and independent study, and are encouraged to share their notions. In small groups, role play is a useful technique for acquainting pupils with real-world scenarios. Probing questions, rephrasing, and summarizing are used by the teacher to assist make the concepts obvious.

• **CASE-BASED LEARNING (CBL):**

Learning is centered around a sequence of questions based on a clinical scenario in this small group discussion format. Students create new information by discussing and responding to the questions using pertinent prior knowledge from the clinical and fundamental health sciences modules. The relevant department will give the CBL.

• **CLINICAL EXPERIENCES:**

Students examine patients in hospital wards, clinics, and outreach facilities in small groups, noting their signs and symptoms. This aids students in connecting their understanding of the module's basic and clinical sciences and getting ready for future practice.

- **CLINICAL ROTATIONS:**

Students cycle through a variety of wards in small groups, including those in family medicine clinics, outreach centers, pediatrics, surgery, obstetrics and gynecology, ENT, and community medicine. In both inpatient and outpatient settings, students watch patients, get medical histories, and carry out clinical examinations under supervision. They also have the chance to watch medical professionals function as a team. Students can link their basic medical and clinical skills to a variety of clinical domains through these rotations.

- **SKILL SESSIONS:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

- **PRACTICALS:**

Basic science practicals related to pharmacology, pathology and community medicine have been schedule for student learning.

- **SELF STUDY:**

Self-directed learning is a process in which students take charge, either on their own or with assistance from others. Students chart their learning objectives and determine their areas of need for learning. They select and employ their own learning methodologies, and they independently assess the learning objectives.

6. INTRODUCTION

Welcome to the Renal II module. This fascinating session will act as a foundation and is crucial to your future practice as physicians. This module includes a number of interactive tasks that are meant to make your learning engaging and fruitful. This is the second module on renal and excretory system in MBBS course. The basics of renal and excretory system including structure and function have been addressed in the first module. The module will focus on common diseases of the renal and excretory system, including infections, obstructive, genetics and acquired disorders and cancerous and non-cancerous renal and excretory diseases. The student will build upon the fundamental knowledge of anatomy, physiology, and biochemical processes acquired in the first spiral module of renal diseases in this second clinical spiral module. They will also gain an understanding of common renal diseases, renal failure, and how to manage it.

6.1 RATIONALE

Kidney disease has an indirect impact on global morbidity and mortality by increasing the risks associated with at least five other major killers: cardiovascular diseases, diabetes, hypertension, infection with human immunodeficiency virus (HIV) and malaria. Worldwide estimated prevalence of Chronic Kidney Disease is 10.4% in men and 11.8% in women. In Pakistan common causes of CKD identified in the patients included diabetic nephropathy (28%), glomerulonephritis (22%), hypertension (14.6%), tubulo-interstitial disease (13.4%) and renal stone disease (8%). Hence this module aims to equip medical undergraduates with the essential knowledge and skills required for dealing with prevalent renal disorders in the local context.

6.2 IBN E SINA UNIVERSITY (ISU) VISION:

To become a world-leading organization in rural health and social care research, training, recruitment and best evidence-based practice.

6.3 IBN E SINA UNIVERSITY (ISU) MISSION:

Our Mission is to inspire hope, and contribute to health and well-being by providing the best care to every patient through integrated clinical practice, education and research. To provide a focal point for the development and collation of high-quality research pertinent to rural health and wellbeing. To improve the training, recruitment and retention of a professional workforce within rural communities. To be recognized as an exemplar in rural health and wellbeing on the international stage. To establish a network of individuals and groups that support research, innovation and development in rural health and social care.

7. LEARNING OBJECTIVES

7.1 General learning Objectives:

By the end of this module, the students should be able to:

1. Understand how common kidney disorders appear clinically in the community.
2. Using the fundamentals of the history, examination, and clinical investigations, diagnose common conditions.
3. Describe the fundamentals of managing common diseases and provide the relevant referral.
4. Determine the precise diagnostic instruments for kidney illness and how to interpret them.
5. Use prognosis and preventive actions while counseling patients.

7.2 Knowledge / Cognitive Domain

It involves knowledge and the development of intellectual skills. By the end of this module, the students should be able to:

1. Describe applied anatomy of Urinary System with video demonstration
2. Discuss physiology of the renal system
3. Describe the different Acid-base Disorders and the Mechanism for maintaining Acid-base Balance
4. Classify the diseases involving glomeruli, tubules, interstitium, renal blood vessels, Chronic nephron loss, Cystic, urine out flow obstruction, congenital-developmental and neoplastic diseases of renal system
5. Describe the etiology, pathogenesis, clinical manifestations, diagnosis, and prognosis of the renal system diseases.
6. Perform various practical's used in laboratory diagnosis of renal diseases.
7. Describe the Pharmacology of drugs used in the treatment of Renal System Diseases.
8. Describe ethics of Organ Transplantation.
9. Describe prevalence of renal diseases.
10. Describe the clinical features of renal diseases.
11. Diagnose & manage Acute & Chronic Kidney Disease, Nephrotic, Nephritic Syndromes, Urinary Tract Infections.
12. Management of Urinary Tract Infections, Chronic Kidney Diseases & Renal Transplant patients during Pregnancy.
13. Enumerate/Describe various renal diseases primarily effecting pediatrics age group.
14. Describe pathogenesis and management of renal stones.
15. Describe pathogenesis and management of bladder outlet obstruction (BOO).

7.3 Skills / Psychomotor Domain:

Includes physical movement, co-ordination and the use of motor skill areas. For this Module, these include:

1. Observation and Assistance
2. Performing the skill under supervision
3. Performing the skill independently
4. Examine the patient with renal problems and diseases
5. Bimanual palpation of kidney.
6. Interpret the KUB plain and contrast xrays, renal ultrasound findings and IVP xrays

7.4 Attitude / Affective Domain:

It Involves our feelings, emotions and attitudes. By the end of this module, the students should be able to:

1. Respect oneself and one's peers, both when providing and receiving comments.
2. To show patients compassion and understanding.
3. Develop your ability to communicate while keeping a sense of duty to your patients.
4. Showcase appropriate laboratory procedures.
5. Relate to patient and caregivers vulnerability
6. Demonstrate ethical self-management
7. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
8. Display compassion with patient and colleagues
9. Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease

7.5 Outcomes of Renal-II Module

1. Knowledgeable
2. Skillful
3. Community Health Promoter
4. Problem-solver
5. Professional
6. Researcher
7. Leader and Role Model

8. THEMES FOR ENT MODULE

SNO	Themes	Duration
1	Facial swelling	1 week
2	Scanty Urine	1 week
3	Loin pain and dysuria	1 week
4	Urinary retention	1 week

9. SPECIFIC LEARNING OBJECTIVES THEME WISE

THEME 1: FACIAL SWELLING

THEME 1: FACIAL SWELLING						
Subject	Topic	Hours	S#	Learning objectives	Teaching Method	Assessment tool
Pathology	Basic terms	1	8	Define the terms: Azotemia, uremia, Nephrotic syndrome, Nephritic syndrome, asymptomatic hematuria, rapidly progressive glomerulonephritis	Interactive Lectures	MCQs
			9	Acute kidney injury, chronic kidney disease, end-stage renal disease(ESRD),	Interactive Lectures	MCQs
			10	Renal tubular defects, Nephrosclerosis, UTI,	Interactive Lectures	MCQs
			11	urolithiasis, Hydronephrosis, Oncocytoma and carcinoma	Interactive Lectures	MCQs
			12	Describe the pathogenesis of Nephrotic and Nephritic syndrome	Interactive Lectures	MCQs
	Glomerular Disease	2	13	Describe the pathological responses, pathogenesis and mediators of glomerular injury	Interactive Lectures	MCQs
			14	Classify Glomerular diseases.	Interactive Lectures	MCQs
			15	Differentiate between major Primary Glomerular diseases in Terms of clinicopathological features and different microscopic findings	Interactive Lectures	MCQs
			16	Discuss the etiologies, clinicopathological features and morphology of the diseases presenting as Nephritic syndrome and Nephrotic syndrome	Interactive Lectures	MCQs

			17	Explain the pathogenesis and morphology of minimal change disease	Interactive Lectures	MCQs
			18	Describe the etiology, pathogenesis, morphology and clinical presentation of focal segmental glomerulosclerosis	Interactive Lectures	MCQs
			19	Describe the etiology, pathogenesis, morphology and clinical presentation of membranoproliferative glomerulonephritis	Interactive Lectures	MCQs
			20	Describe the etiology, pathogenesis, morphology and clinical presentation of IgA nephropathy	Interactive Lectures	MCQs
			21	Describe the pathogenesis, morphology of diabetic and other types of secondary nephropathies	Interactive Lectures	MCQs
	Acute Tubular Injury(ATI)	1	22	Define Acute Tubular Injury (ATI).	Interactive Lectures	MCQs
			23	Describe the etiology, clinicopathological features and morphology of ischemic and toxic ATI.	Interactive Lectures	MCQs
			24	Compare the pattern of tubular damage in ischemic and toxic injury	Interactive Lectures	MCQs
	Vascular events		25	Discuss the etiology, pathogenesis, and morphology of Nephrosclerosis, malignant hypertension and Renal Artery stenosis.	Interactive Lectures	MCQs
Medicine	Interpretation of urinalysis	1	26	explain various abnormalities and their interpretation and importance regarding specific diagnoses	Interactive Lectures	MCQs

			27	Highlight the importance of urine abnormalities in other systemic diseases apart from kidney and urogenital tract abnormalities	Interactive Lectures	MCQs
	Nephrotic syndrome	1	28	Define Nephrotic Syndrome.	Interactive Lectures	MCQs
			29	Interpret the criteria for diagnosing Nephrotic Syndrome	Interactive Lectures	MCQs
			30	Recognize symptoms and signs of Nephrotic Syndrome	Interactive Lectures	MCQs
			31	Identify the complication of nephrotic syndrome	Interactive Lectures	MCQs
			32	Interpret the important investigations	Interactive Lectures	MCQs
			33	Discuss the management plan for Nephrotic syndrome	Interactive Lectures	MCQs
	Nephritic syndrome	1	34	Interpret the criteria for diagnosing Nephritic Syndrome	Interactive Lectures	MCQs
			35	Identify symptoms and signs of Nephritic Syndrome	Interactive Lectures	MCQs
			36	Identify important causes	Interactive Lectures	MCQs
			37	Enumerate important investigations	Interactive Lectures	MCQs
			38	Discuss the treatment plan	Interactive Lectures	MCQs
	Electrolyte abnormalities	1	39	Define Hyponatremia	Interactive Lectures	MCQs
			40	Discuss Types of Hyponatremias	Interactive Lectures	MCQs
			41	Describe clinical features	Interactive Lectures	MCQs
			42	Enlist/ interpret the diagnostic lab investigations	Interactive Lectures	MCQs
			43	Calculate the sodium deficit and free water deficit	Interactive Lectures	MCQs
			44	Calculate rate of sodium replacement	Interactive Lectures	MCQs
			45	Discuss complications	Interactive Lectures	MCQs
			46	Define Hypernatremia	Interactive Lectures	MCQs

			47	Describe clinical features	Interactive Lectures	MCQs
			48	Enlist diagnostic lab investigations	Interactive Lectures	MCQs
			49	Calculate the sodium deficit and freewater deficit	Interactive Lectures	MCQs
			50	Calculate rate of fluid replacement	Interactive Lectures	MCQs
			51	Describe management plan.	Interactive Lectures	MCQs
			52	Define Hypokalaemia	Interactive Lectures	MCQs
			53	Describe clinical features	Interactive Lectures	MCQs
			54	Interpret diagnostic lab investigations	Interactive Lectures	MCQs
			55	Discuss complications.	Interactive Lectures	MCQs
			56	Describe/JUSTIFY management plan	Interactive Lectures	MCQs
			57	Define Hyperkalemia	Interactive Lectures	MCQs
			58	Describe clinical features	Interactive Lectures	MCQs
			59	Enlist diagnostic lab investigations	Interactive Lectures	MCQs
			60	Discuss complications Describe management plan	Interactive Lectures	MCQs
Pediatrics	Acute post streptococcal glomerulonephritis (ApGN)	1	61	Define AGN and APGN	Interactive Lectures	MCQs
			62	Describe the pathogenesis of Nephritic syndrome	Interactive Lectures	MCQs
			63	Know clinical features and differential diagnosis of ApGN	Interactive Lectures	MCQs
			64	Describe investigations required to reach a diagnosis of ApGN	Interactive Lectures	MCQs
			65	Effectively describe the treatment requires for patients with ApGN	Interactive Lectures	MCQs
		1	66	Define nephrotic syndrome.	Interactive Lectures	MCQs
	Nephrotic		67	Describe pathophysiology of nephrotic syndrome	Interactive Lectures	MCQs

syndrome(NS)	68	Classify NS in to its subtypes	Interactive Lectures	MCQs
	69	Describe clinical features of NS	Interactive Lectures	MCQs
	70	Enumerate and describe tests required to reach diagnosis of NS	Interactive Lectures	MCQs
	71	Outline treatment steps in themanagement of NS	Interactive Lectures	MCQs
	72	Know the complications of NS anddescribe its prognosis.	Interactive Lectures	MCQs

THEME 2: SCANTY URINE

Pathology	Renal function test	1	73	Describe the normal ranges of Bloodurea, creatinine, and electrolytes	Interactive Lectures	MCQs
			74	Explain creatinine clearance and otherradiological and biochemical renal function tests and their clinical significance	Interactive Lectures	MCQs
	Acute kidney injury	1	75	Explain the etiology, pathogenesis, morphology and clinical presentationand complications of acute kidney injury	Interactive Lectures	MCQs
	Chronic Renal Failure	1	76	Explain the etiology, pathogenesis, morphology and clinicalpresentationand complications of chronic renal failure.	Interactive Lectures	MCQs
	Interstitialand Glomerulonephritis	1	77	Explain the etiology and pathogenesisof interstitial nephritis	Interactive Lectures	MCQs
			78	Explain the etiology, pathogenesis,and morphology of glomerulonephritis.	Interactive Lectures	MCQs
Medicine	Acute Kidney Injury AKI	1	79	Define AKI.	Interactive Lectures	MCQs
			80	Enlist/Interpret the criteria fordiagnosing AKI	Interactive Lectures	MCQs
			81	Discuss/ Differentiate prerenal & post renal causes	Interactive Lectures	MCQs
			82	Identify symptoms and signs of AKI	Interactive Lectures	MCQs
			83	Identify /Interpret the importantcomplications	Interactive Lectures	MCQs
			84	Enumerate/DISCUSS importantinvestigations	Interactive Lectures	MCQs
			85	Construct a management plan for apatient with AKI	Interactive Lectures	MCQs
Chronic Kidney Disease(CKD)	1	86	Define CKD	Interactive Lectures	MCQs	
		87	Enlist criteria for diagnosing CKD	Interactive Lectures	MCQs	

			88	Identify important causes	Interactive Lectures	MCQs
			89	Identify symptoms and signs of CKD	Interactive Lectures	MCQs
			90	Identify the important complications	Interactive Lectures	MCQs
			91	Enumerate important investigations Discuss the treatment plan	Interactive Lectures	MCQs
	Renal Replacement Therapy (RRT)	1	92	Define RRT	Interactive Lectures	MCQs
			93	Enlist the different types of RRT	Interactive Lectures	MCQs
			94	Identify/Enumerate important indications of dialysis	Interactive Lectures	MCQs
			95	Identify/Enlist the important complications of dialysis	Interactive Lectures	MCQs
			96	Discuss the Renal transplant	Interactive Lectures	MCQs
			97	Enlist and discuss the types of transplant rejection	Interactive Lectures	MCQs
Surgery/Urology	Renal transplant surgery	1	101	Enlist diagnostic indicators of renal transplant	Interactive Lectures	MCQs
			102	Describe pre-requisite for successful renal transplant	Interactive Lectures	MCQs
			103	Discuss post renal transplant care of patient	Interactive Lectures	MCQs
			104	Describe common complications of renal transplant surgery	Interactive Lectures	MCQs
			105	Enlist immunosuppressive drugs used in Renal transplant	Interactive Lectures	MCQs
Family medicine	Acute renal presentations- primary care management and Red flags	1	106	Explain the etiology, clinical features and presentation of acute renal failure	Interactive Lectures	MCQs
			107	Describe the steps of management of a patient with anuria and oliguria	Interactive Lectures	MCQs
			108	Identify patients that need urgent and proper referral for specialist care in primary health with anuria and acute and	Interactive Lectures	MCQs

				chronic renal disease		
Community medicine	Environmental health: Introduction	1	109	Explain the importance of environmental health	Interactive Lectures	MCQs
			110	Define and classify environmental degradation	Interactive Lectures	MCQs
	Water pollution	1	111	Define water pollution and describe its importance for health	Interactive Lectures	MCQs
	Water quality management	4	112	Describe the different types of water pollution as simple biodegradable, complex biodegradable and complex non-degradable	Interactive Lectures	MCQs
			113	Explain the importance and daily requirements of water.	Interactive Lectures	MCQs
			114	Describe qualities and criteria of different sources of water including surface water, ground well, shallow well, deep well.	Interactive Lectures	MCQs
			115	Classify different methods of purification of water	Interactive Lectures	MCQs
			116	Describe natural methods of purification of water	Interactive Lectures	MCQs
			117	Describe physical methods.	Interactive Lectures	MCQs
			118	Describe chemical methods.	Interactive Lectures	MCQs
			119	Describe filtration methods both small scale and large scale	Interactive Lectures	MCQs
			120	Describe purification of water in special circumstances	Interactive Lectures	MCQs
			121	Enumerate different water quality parameters	Interactive Lectures	MCQs
			122	Describe physical parameters	Interactive Lectures	MCQs

			123	Describe different chemical parameters and its interpretation.	Interactive Lectures	MCQs
			124	Explain the permissible limits of chemical parameters.	Interactive Lectures	MCQs

THEME 3: LOIN PAIN AND DYSURIA

Pathology	Pyelonephritis	1	125	Discuss the etiology, clinico-pathological presentation, morphology, and complications of Acute Pyelonephritis,	Interactive Lectures	MCQs
			126	Discuss the etiology, clinico-pathological presentation, morphology and complications of, chronic pyelonephritis	Interactive Lectures	MCQs
			127	Discuss the etiology, clinico-pathological presentation, morphology, and complications of drug induced nephritis	Interactive Lectures	MCQs
	Cystic Diseases of the Kidney	1	128	Classify the cystic diseases of Kidney.	Interactive Lectures	MCQs
			129	Describe the inheritance, Pathological features, Complications, and prognosis of polycystic diseases of Kidneys.	Interactive Lectures	MCQs
			130	Differentiate between the inheritance, pathological features, typical outcomes and clinical features of Adult and Childhood Polycystic Kidney Diseases	Interactive Lectures	MCQs
			131	Differentiate between the inheritance, pathological features, typical outcomes, and clinical features of Childhood Polycystic Kidney Diseases.	Interactive Lectures	MCQs
	Urolithiasis	1	132	Enlist the types of Renal stones.	Interactive Lectures	MCQs
			133	Discuss the etiology and pathogenesis of Renal stones	Interactive Lectures	MCQs

			134	Co-relate the occurrence of renal stones with different metabolic diseases	Interactive Lectures	MCQs
			135	Differentiate between the different renal stones based on frequency, predisposing factors, urine PH and morphology.	Interactive Lectures	MCQs
	Neoplasms of the Kidneys	1	136	Classify the benign and malignant tumors of the Kidney.	Interactive Lectures	MCQs
	Renal cell carcinoma		137	Discuss the etiology, morphology, and prognosis of Renal cell carcinoma	Interactive Lectures	MCQs
	Wilm's Tumor		138	Discuss the genetics, clinico-pathological features, morphology, and prognosis of Wilm's tumor	Interactive Lectures	MCQs
	Diagnosis and management of renal tumors		139	Describe the various investigations to diagnose renal tumors (albumin/creatinine ratio, urine for micro albumin)	Interactive Lectures	MCQs
			140	Discuss management of renal tumors	Interactive Lectures	MCQs
	Congenital anomalies of bladder	1	141	Describe the congenital anomalies of bladder and urethra	Interactive Lectures	MCQs
	Acute Cystitis		142	Discuss the etiology, morphology, clinico-pathological features and complications of Acute	Interactive Lectures	MCQs
	Chronic Cystitis		143	Discuss the etiology, morphology, clinico-pathological features and complications of Chronic Cystitis.	Interactive Lectures	MCQs

Pharmacology	Urinary Tract Infection(UTI)	2	144	Describe the clinical pharmacology of drugs used in the management of acute and chronic UTI (Co-trimoxazole, Nitrofurantoin, Cephalosporins, Amoxicillin-clavulanic acid, etc).	Interactive Lectures	MCQs
Community Medicine	HIV/AIDS, Syphilis	1	145	Describe HIV/AIDS considering Risk groups, pathology, Diagnosis, treatment, and Prevention	Interactive Lectures	MCQs
			146	Describe Syphilis in terms of causative agent, incubation period, transmission, manifestation, diagnosis treatment and prevention.	Interactive Lectures	MCQs

	Chlamydia, Genitalwarts, Gonorrhoea		147	Describe Chlamydia in terms of etiology, transmission, symptoms, treatment, and prevention.	Interactive Lectures	MCQs
			148	Describe Genital warts in terms of causes, transmission, symptoms, treatment, and prevention.	Interactive Lectures	MCQs
			149	Describe Gonorrhoea in terms of causes, transmission, symptoms, treatment, and prevention.	Interactive Lectures	MCQs

	Human Papiloma virus,		150	Describe Human Papiloma Virus(HPV) in terms of causes, types, transmission, symptoms, screening, and prevention.	Interactive Lectures	MCQs
Medicine	Autosomal Dominant Polycystic Kidney Disease (ADPKD)	1	151	Define ADPKD.	Interactive Lectures	MCQs
			152	Enlist/Interpret the criteria for diagnosing ADPKD.	Interactive Lectures	MCQs
			153	Identify/interpret the genetic causes.	Interactive Lectures	MCQs
			154	Identify/ symptoms and signs of ADPKD.	Interactive Lectures	MCQs
			155	Identify/Interpret the important complications.	Interactive Lectures	MCQs
	Urinary Tract Infections (UTIs)	1	156	Enumerate& interpret important investigations.	Interactive Lectures	MCQs
			157	Construct a management plan.	Interactive Lectures	MCQs
			158	Define UTIs.	Interactive Lectures	MCQs
			159	Enlist the criteria for diagnosing UTIs.	Interactive Lectures	MCQs
			160	Identify/Differentiate the complicated and uncomplicated UTIs.	Interactive Lectures	MCQs
			161	Identify symptoms and signs of UTIs.	Interactive Lectures	MCQs
			162	Identify the important complications.	Interactive Lectures	MCQs
			163	Enumerate/discuss/interpret/important investigations.	Interactive Lectures	MCQs
			164	Construct a management plan for a patient with UTI.	Interactive Lectures	MCQs
Radiology	Urological Investigation	1	165	Uses of plain X-ray KUB (Kidney, ureter, bladder).	Interactive Lectures	MCQs
			166	Discuss role of CT in Urology.	Interactive Lectures	MCQs
			167	Discuss role of nuclear scans.	Interactive Lectures	MCQs
			168	Discuss DTPA Scan, DMSA Scan, MAG 3 Scan.	Interactive Lectures	MCQs

			169	Investigate renal system during pregnancy.	Interactive Lectures	MCQs
Surgery/Urology	Kidney Stones	1	170	Enlist factors predisposing to specific stone types	Interactive Lectures	MCQs
			171	Discuss evaluation of stone formers	Interactive Lectures	MCQs
			172	Discuss clinical features and Diagnosis of renal stone	Interactive Lectures	MCQs
			173	Describe renal stone treatment options	Interactive Lectures	MCQs
	Renal trauma	1	174	Describe Initial resuscitation of renal trauma patient	Interactive Lectures	MCQs
			175	Classify mechanism and grading of renal trauma	Interactive Lectures	MCQs
	Pelvic Ureteric junction obstruction in adult (PUJO)		176	Discuss clinical and radiological assessment of renal trauma.	Interactive Lectures	MCQs
			177	Discuss management plan of renal trauma.	Interactive Lectures	MCQs
			178	Define PUJ obstruction.	Interactive Lectures	MCQs
			179	Enlist etiology (congenital and acquired causes).	Interactive Lectures	MCQs
			180	Describe clinical presentation of PUJO.	Interactive Lectures	MCQs
			181	Interpret Investigations (renal ultrasound, IVU (Intravenous urography), MAG-3 renography, retrograde pyelography).	Interactive Lectures	MCQs
			182	JUSTIFY Management PLAN options (Endopyelotomy, Pyeloplasty).	Interactive Lectures	MCQs
	Anomalies of renal fusion and ascent	1	183	Describe various anomalies of renal tracts like Horseshoe kidney, Ectopic kidney, Renal agenesis, Malrotated kidney, Urinary tract duplication.	Interactive Lectures	MCQs
	Renal Cell		184	Describe clinical presentation and	Interactive Lectures	MCQs

	Carcinoma(RCC)			investigation of RCC.		
			185	Enlist Treatment of localized RCC.	Interactive Lectures	MCQs
			186	Construct Management of metastaticRCC.	Interactive Lectures	MCQs
Obs & Gynae	Asymptomatic bacteriuria	1	187	Define asymptomatic bacteriuria.	Interactive Lectures	MCQs
			188	Describe the effects of asymptomaticbacteriuriaon pregnancy.	Interactive Lectures	MCQs
			189	Management plan of asymptomaticbacteriuria	Interactive Lectures	MCQs
	190		Define Acute Cystitis	Interactive Lectures	MCQs	
	191		Describe effects of asymptomaticbacteriuria	Interactive Lectures	MCQs	
	Acute symptomatic urinary tract infections					
			192	Plan management of Acute Cystitis inpregnancy	Interactive Lectures	MCQs
			193	Describe the effects of acutePyelonephritis on pregnancy.	Interactive Lectures	MCQs
			194	Plan Management of acutePyelonephritis.	Interactive Lectures	MCQs
Pediatrics	Urinary tract infection (UTI)	1	195	Describe the types of UTI.	Interactive Lectures	MCQs
			196	Discuss prevention and managementof UTI in children.	Interactive Lectures	MCQs

THEME 4: URINARY RETENTION

Pathology	Obstructive Uropathy	1	200	Discuss the obstruction in urogenital tract at different levels.	Interactive Lectures	MCQs
			201	Discuss the effects of obstruction on function and morphology of kidney.	Interactive Lectures	MCQs
			202	Describe clinico-pathological features and morphology of Hydronephrosis	Interactive Lectures	MCQs
	Tumors of urinary bladder	1	203	Classify tumors of urinary bladder.	Interactive Lectures	MCQs
	BPH		204	Discuss the etiology, pathogenesis, morphology, staging and prognosis of urothelial (Transitional Cell) Tumors	Interactive Lectures	MCQs
			205	Describe pathophysiology of Benign prostatic hypertrophy and risk factors	Interactive Lectures	MCQs
	Carcinoma prostate		206	Describe pathogenesis, risk factors and staging.	Interactive Lectures	MCQs
Pharmacology	Drugs for benign prostatic hyperplasia	2	207	Classify the drugs used in the management of BPH	Interactive Lectures	MCQs
		1	208	Enlist the alpha-adrenergic blocking drugs with special reference to those having specific affinity for prostate muscle.	Interactive Lectures	MCQs
			209	Describe the role of alpha blockers, 5-alpha reductase inhibitors (Finasteride) and combination therapy in BPH.	Interactive Lectures	MCQs
			210	Enlist the adverse effects of the drugs used to treat BPH.	Interactive Lectures	MCQs
	Carcinoma of prostate	1	211	Enlist the hormonal agents used in the management of Prostatic carcinoma.	Interactive Lectures	MCQs

			212	Describe the mechanism of action ofGonadotropin-releasing hormone (Goserelin) and anti-androgens (Cyproterone acetate and Flutamide)in the management of Prostatic carcinoma.	Interactive Lectures	MCQs
			213	Enlist the anticancer chemotherapeutic agents used in the management of Prostatic carcinoma.	Interactive Lectures	MCQs
Community medicine	Air Pollution& airquality management	2	214	Define air pollution.	Interactive Lectures	MCQs
			215	Enumerate criteria pollutants.	Interactive Lectures	MCQs
			216	Describe the sources and limits of air pollutants.	Interactive Lectures	MCQs
			217	Describe the adverse effects of air pollutants on health.	Interactive Lectures	MCQs
			218	Explain the measures for control of air pollution	Interactive Lectures	MCQs
	Noise pollution, radiation pollution anditscontrol	1	219	Describe the global adverse effects of air pollution- ozone depletion, greenhouse effect, smog,acid rain.	Interactive Lectures	MCQs
			220	Define noise pollution.	Interactive Lectures	MCQs
			221	Explain adverse effects of noise pollution on health.	Interactive Lectures	MCQs
			222	Describe factors effecting hearing loss.	Interactive Lectures	MCQs
			223	Enumerate acceptable noise standards.	Interactive Lectures	MCQs

			224	Discuss the measures for prevention of adverse effects of noise.	Interactive Lectures	MCQs
			225	Classify different types of radiation to which humans are exposed.	Interactive Lectures	MCQs
			226	Describe the adverse effects and preventive measure of different type of nonionizing radiations.	Interactive Lectures	MCQs
			227	Describe the adverse effects and preventive measure of ionizing radiations.	Interactive Lectures	MCQs
	Waste management	2	228	Explain the importance of waste management in health	Interactive Lectures	MCQs
			229	Describe management of waste [organic of human and animal origin] as per water carriage system	Interactive Lectures	MCQs
			230	Describe the management of waste [organic of human and animal origin] as per conservancy system	Interactive Lectures	MCQs
			231	Describe management of solid waste [refuse]	Interactive Lectures	MCQs
		1	232	Define hospital waste management	Interactive Lectures	MCQs
	Hospital waste management		233	Explain the importance of hospital waste management in health	Interactive Lectures	MCQs
			234	Classify hospital waste	Interactive Lectures	MCQs
			235	Know the impacts of improper hospital waste management on health	Interactive Lectures	MCQs
			236	Describe the methods to minimize	Interactive Lectures	MCQs

				hospital waste		
			237	Describe the methods of treatment of hospital waste	Interactive Lectures	MCQs
			238	Explain the waste management trends in developing countries	Interactive Lectures	MCQs
Disasters and health		2	239	Define disaster management	Interactive Lectures	MCQs
			240	Describe classification of disasters	Interactive Lectures	MCQs
			241	Describe the mortality & morbidity due to disaster itself & mismanagement of disaster relief activities	Interactive Lectures	MCQs
			242	Describe pre-disaster management	Interactive Lectures	MCQs
			243	Describe post disaster management in immediate, intermediate, and long-term stages.	Interactive Lectures	MCQs
			244	Discuss management and preventive measures from previous disasters.	Interactive Lectures	MCQs
			245	Describe the history of disasters in	Interactive Lectures	MCQs
				Pakistan.	Interactive Lectures	
Surgery/Urology	carcinoma of urinary bladder	1	246	Discuss clinical Presentation of bladder cancer.	Interactive Lectures	MCQs
			247	Describe diagnosis and clinical staging of bladder cancer.	Interactive Lectures	MCQs
			248	Construct management Plan of bladder cancer.	Interactive Lectures	MCQs
	Enlarged Prostate	1	249	Define IPSS (International prostatesymptoms scoring) for enlarged prostate.	Interactive Lectures	MCQs

			250	Describe watchful waiting for enlarged prostate.	Interactive Lectures	MCQs
			251	Enlist medical management of BPH.	Interactive Lectures	MCQs
			252	Minimal invasive management of BPH.	Interactive Lectures	MCQs
			253	Invasive surgical surgeries	Interactive Lectures	MCQs
			254	TURP (transurethral resection of prostate)	Interactive Lectures	MCQs
			255	Open prostatectomy	Interactive Lectures	MCQs
	Carcinoma prostate		256	Describe clinical presentation and management	Interactive Lectures	MCQs
	Urinary Incontinence	1	257	Define urinary incontinence	Interactive Lectures	MCQs
			258	Discuss urinary incontinence	Interactive Lectures	MCQs
			259	Classify urinary incontinence	Interactive Lectures	MCQs
			260	Discuss nocturnal enuresis	Interactive Lectures	MCQs
			261	Enlist causes and pathophysiology	Interactive Lectures	MCQs
			262	Describe evaluation of incontinence	Interactive Lectures	MCQs
			263	Enumerate Investigation of	Interactive Lectures	MCQs
				incontinence	Interactive Lectures	
			264	Describe conservative treatment options surgical options	Interactive Lectures	MCQs
	Urethral strictures	1	265	Describe etiology, Presentation, investigation, and management of urethral stricture	Interactive Lectures	MCQs
	Posterior urethral valve		266	Discuss clinical presentation and management of Posterior urethral valves (PUV).	Interactive Lectures	MCQs

PRACTICAL WORK

Pathology	Urine collection methods, physical examination of urine specimen	2	267	Demonstrate the procedure of urine collection, physical examination volume, color, appearance, pH of specimen.	Demonstration	OSPE
	Microscopic examination of centrifuge specimen		268	Perform the physical examination of urine and prepare report of an abnormal urine with pyuria and hematuria Interpret the results.	Demonstration Demonstration Demonstration Demonstration	OSPE OSPE OSPE OSPE
	Chemical examination Of non-centrifuged urine specimen	2	269	Demonstrate substances for chemical examination and the different procedures of detection of protein in urine.	Demonstration	OSPE
			270	Demonstrate the Principle of protein detection by heat method in urine	Demonstration	OSPE
			271	Perform the heat and acetic acid test and the test for Bence Jones protein. Interpret the results	Demonstration Demonstration Demonstration	OSPE OSPE OSPE
				272	Demonstrate the tests for detection of reducing substances in urine and the principle of Benedict's test	Demonstration Demonstration
			273	Perform the Benedict's test. Interpret the results	Demonstration	OSPE
			274	Demonstrate the substances seen in urine under microscope i.e. cells (Pus cells, RBCs, Epithelial cells and other different cells), Crystals, castes etc		

			275	Prepare the sediment for urine examination.
			276	Detect various substances in a slide prepared from sediment under the microscope Interpret the results.
	Urine staining, and culture	2	277	Demonstrate the Staining methods and their principles for urine specimen of acute and chronic UTI
			278	Identify the uropathogens shown in the slide
			279	Demonstrate sterilized methods for collections of specimens for culture and sensitivity.
			280	Perform a practical for culture and sensitivity by disc diffusion method for any uropathogen.
Pharmacology	Prescriptions for acute and chronic UTI	2	281	Formulate prescriptions for acute and chronic UTI
Community medicine	Incinerator / waste disposal models	2	282	Identify the model
			283	Explain the steps of waste disposal
	Water sources	2	284	Identify the model related sources of water
	Sand filters		285	Identify the model
		286	Identify its different layers and mechanism of purification	
		287	Calculate the dose of bleaching powder required for disinfection of water in a domestic tank	
		288	Assess the quality of water sample on the basis of physical parameters (Color, turbidity, suspended particles, temperature and Ph.)	
		289	Interpret the bacteriological quality of water on the basis of presumptive coliform test	

9.1 TAGGED SUBJECTS

Topic	Contents	Learning Objectives	Teaching Method	Module	Hours	Assessment
RESEARCH AND BIOSTATICS						
Practical Problems in biostatistics		Practical problems in biostatistics	Lecture	Renal II	2Hrs	MCQ
Data analysis	Data analysis Hands on		Use of MS Excel for data analysis Use of SPSS for data analysis Use of Endnote for reference management Data compilation, analysis and dissertation writing	Renal II	2 HRS 2 HRS 4hrs 4 hrs	MCQ
Attributes	errors and mistakes in responsible manner	Accept errors and mistakes in responsible manner	Lecture Group Discussion/		2	MCQ
Attributes	Dealing with confidential information	dealing with confidential information	Group Discussion/		1	Formative, OSCE

9.2 CLINICAL ROTATION SCHEDULE

Duration	11 weeks			11 weeks			9 weeks	5 weeks
	5wks	3wks	3wks	5wks	3wks	3wks		
Disciplines	Medicine	Medicine & Allied	Paeds	Surgery	Surgery & Allied	Gynae Obs	EYE	ENT
Total hours*	65	39	39	65	39	39	100	64

* 2.6 Clinical rotation hours per day

The above mentioned clinical rotation schedule is to be followed by every student throughout the year. Groups of students are decided by the Hospital Administration.

10. TEACHING HOURS ALLOCATION

S. NO	SUBJECT	In Practicals (Hours)	In class teaching (Hours)
1	Pathology	6	20
2	Pharmacology	2	8
3	Community medicine	4	20
4	Medicine	-	9
5	Family medicine	-	1
6	Surgery/urology	-	11
7	Research and Biostatics	-	17
Total		12	86

11. EXAMINATION AND METHODS OF ASSESSMENT

11.1 EXAMINATION RULES AND REGULATIONS

- Student must report to examination hall/venue, in time for smooth conduction of the exams.
- No student will be allowed to enter the examination hall after 10 minutes of scheduled examination time.
- No students will be allowed to sit in exam without College ID Card, and Lab Coat
- Students must sit according to their roll numbers mentioned on the seats.
- Student must bring their own stationary items (Pen, Pencil, Eraser, and Sharpener) -Sharing is prohibited
- Any disturbance or Indiscipline in the exam hall/venue is not acceptable.
- Students must not possess any written material or communicate with their fellow students
- Cell phones are strictly not allowed in examination hall. If any student is found with cell phone in any mode (silent, switched off or on) he/she will be **not be allowed to continue their exam.**
- **No student is allowed to leave the examination hall before half the time is over, paper is handed over to the examiner and properly marking the attendance.**

11.2 ASSESSMENT

11.2.1 Internal: Total 10% (20 marks)

- Students will be assessed comprehensively through multiple methods to determine achievement of module objectives through two methods: Module examination and Graded assessment by Individual department
 - **Module Examination:** It will be scheduled on completion of each module. The method of examination comprises theory exam (which includes SEQs and MCQs) and OSPE / OSCE exam (which includes static and interactive stations).
 - **Graded Assessment by individual department:** It includes weekly MCQs tests on Survive online LMS program, viva, practical, weekly theme based assignments, post-test discussion sessions, peer assessments, presentations, small group activities such as CBL, ward activities, examinations and log books, all of which have specific marks allocation.
- Marks of both modular examination and graded assessment will constitute 10% weightage.
- 10% marks of internal evaluation will be added to the ISU annual professional exam.
- The marks distribution is based on Formative Assessment done individually by all the concerned departments. It may include:

- NOTE: at least 75% attendance is mandatory to appear in the annual university examination.
- Exam branch is responsible to maintain the attendance record for Main Campus in coordination with all the concerned departments.

11.2.2 University Annual Exam: Total 90%

- Annual Exam has 90% marks in total
- It includes theory and OSPE / OSCE.
- Each written paper consists of 100 MCQs and 10 SEQs and internal assessment marks will be added to the final marks.

11.3 METHODS OF ASSESSMENT

11.3.1 Multiple Choice Questions

- Single best type MCQs having five options with one correct answer and four distractors are part of assessment.
- Total 100 MCQs are included which are formulated through the table of specification from learning objectives of Module interactive lectures.
- Time duration for MCQs will be 1 and half hour.
- MCQs are used to assess objectives covered in each module.
- Students after reading the statement / scenarios select one appropriate response from the given options.
- Correct answer carries one mark, and incorrect will be marked zero. Rule of negative marking is not applicable.
- Students attempt the MCQs exam on Computer screen on Moodle / LMS program in IT Lab.

11.3.2 Short Essay Questions (SEQs):

- Short-answer questions are structured way of asking open-ended questions that require students to create their answers based on their knowledge.
- Commonly used in examinations to assess the depth of knowledge and understanding.
- Includes 10 questions each carrying 10 marks.
- Time Duration for Essay type paper is 2 hours.
- Questions are selected from the specific learning objectives of the specific ongoing module.

11.3.3 OSPE / OSCE

- Each student will be assessed on the same content and have same time to complete the task.
- Time allocated for each station is five minutes as per Examination rules of Ibn e Sina University, Mirpurkhas

- All students are rotated through the same stations.
- OSPE / OSCE Comprises of 15 - 20 stations.
- Each station may assess a variety of diagrammatic identifications and clinical tasks. These tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are Interactive, observed, unobserved (static) and rest stations.
 - Interactive Stations:
 - In this station, examiner ask questions related to the task within the allocated time.
 - Observed Stations:
 - In observed stations, internal or external examiner don't interact with candidate and just observe the performance of the skills or procedures.
 - Unobserved (static) Stations:
 - It will be static stations in which there may be models, specimens, multiple identification points, X-ray, Labs reports, flowcharts, pictures, or clinical scenarios (to assess cognitive domain) with related questions for students will be used to answer on the provided answer copy.
 - Rest station
 - It is a station where there is no task given and in this time student can organize his/her thoughts

11.3.4 ASSIGNMENTS

- An online assignment on the Ibn-e-Sina University moodle uploaded according to the topic of the week.
- All assignments should be checked by the teacher who has taken the lecture on the topic during the same week.
- The assignment should cover enough material to include the requirement of the curriculum and syllabus, so the student should be able to answer the annual examination questions by revising these notes (assignments) only.
- The assignments are checked and graded also with comment to guide, motivate and encourage the students to work whole heartedly. Frequent guidance and motivation will go a long way in improving the students' performance.
- Assignments of the whole Professional year MBBS are counted as in Internal Assessment.

11.3.5 WEEKLY TESTS

- The weekly tests are conducted for all classes. The tests are conducted online and are on topics displayed on the portal (Moodle). It consists of 35 MCQs. 5 MCQs will be from the previous weeks (slightly altered to change the answer or the right option). Everyone taking lectures, submit two MCQs to the Chairperson of the department who will check and pass them to the class moderator. MCQs can also be sent directly to the class moderator, who submits the MCQs to IT department for final placement on the moodle.

- The MCQs are not merely simple recall, but test higher level of cognition. As far as possible, they test an important concept related to one of the topics of the week.
- It is different from the summative assessment (Annual or Semester Examinations) in that the goal of summative assessment is to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark, to decide if the student can be promoted or not, whereas the goal of these weekly tests is to check the understanding of the students on the important concepts related to the topics that have been displayed on the portal for the week, the teachers have taught them and the students have made assignments on them.
- Results of weekly tests of the whole Professional year MBBS are counted as in Internal Assessment.

11.3.6 POST-TEST DISCUSSION (PTD)

- Every student has to prepare a special assignment where he/she selects all the questions he/she got wrong. Then he/she makes 3 boxes. In box A he/she writes the questions he/she got wrong in his/her own words, highlighting and underlining the keywords. In box B the student explains why he/she has chosen this answer. In box C the student mentions what he/she has learnt after reading the explanation and how the concept has got clear now.
- The moderator will check, assess and grade PTD
- Next day, the class moderator of the class conducts a class where he/she discusses the mistakes committed and the post-test assignments submitted in detail with the class
- PTD assignments of the whole Professional year MBBS are counted as in Internal Assessment.

12. GRADING POLICY

Marks obtained in Percentage range	Numerical Grade	Alphabetical Grade
80-100	4.0	A+
75-79	4.0	A
70-74	3.7	A-
67-69	3.3	B+
63-66	3.0	B
60-62	2.7	B-
56-59	2.3	C+
50-55	2.0	C
<50 Non gradable	0	N

- A student obtaining GPA less than 2.0 (50%) is declared fail pr Non gradable

13. ASSESMENT BLUEPRINT

RENAL-II MODULE

Assessment is based on Table of Specification (TOS)

	ASSESMENT	TOOLS	MARKS
MODULE EXAM	THEORY	MCQ's	100
		SEQ's	100
	OSPE	OSPE Static	50
		OSPE Interactive	50
		Total	300

14. RECOMMENDED BOOKS

S#	Subjects	Resources
1.	Community medicine	<ol style="list-style-type: none"> 1. Preventive and Social Medicine by K Park 2. Community Medicine by M. Ilyas 3. Basic Statistics for the Health Sciences by Jan W Kuzma 4. Textbook of Community Medicine and Public Health, 2018. Saira Afzal, Sabeena Jala
2.	Medicine	<ol style="list-style-type: none"> 1. Davidson's Principles and Practice of Medicine 2. Kumar and Clark's Clinical Medicine, Edited by Parveen Kumar, 9th Edition
3.	Surgery	<ol style="list-style-type: none"> 1. Bailey & Love's Short Practice of Surgery , 26th Edition
4.	Pathology	<ol style="list-style-type: none"> 1. Robbins & Cotran, Pathologic Basis of Disease, 9th edition. 2. Rapid Review Pathology, 4th edition by Edward F. Goljan MD
5.	Pediatrics	<ol style="list-style-type: none"> 1. Nelson Textbook of Pediatrics, 19th Edition 2. Textbook of Pediatrics by PPA, preface written by S. M. Haneef 3. Clinical Pediatrics by Lakshmanaswamy Aruchamy, 3rd Edition
6.	Pharmacology	<ol style="list-style-type: none"> 1. Lippincott Illustrated Pharmacology 2. Basic and Clinical Pharmacology by Katzung
7.	Psychiatry	<ol style="list-style-type: none"> 1. Oxford textbook of psychiatry by Michael G. Gelder, 2nd Edition 2. Handbook of Behavioural Sciences, by Mowadat H. Rana 3. Drugs used in Psychiatry, by Prof. Muhammad Iqbal Afridi 4. Kaplan Series, Behavioural Sciences, Psychiatry



IBN-E-SINA UNIVERSITY MIRPURKHAS
FACULTY OF BASIC MEDICAL SCIENCES



Course Feedback Form

Course Title: _____

Semester/Module _____ Dates: _____

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

THE DESIGN OF THE MODLUE

- A. Were objectives of the course clear to you? Y N
- B. The course contents met with your expectations
l. Strongly disagree 5. Strongly agree
- C. The lecture sequence was well-planned
l. Strongly disagree 5. Strongly agree
- D. The contents were illustrated with
l. Too few examples 5. Adequate examples
- E. The level of the course was
l. Too low 5. Too high
- F. The course contents compared with your expectations
l. Too theoretical 5. Too empirical
- G. The course exposed you to new knowledge and practices
l. Strongly disagree 5. Strongly agree
- H. Will you recommend this course to your colleagues?
l. Not at all 5. Very strongly

THE CONDUCT OF THE MODLUE

- A. The lectures were clear and easy to understand
l. Strongly disagree 5. Strongly agree
- B. The teaching aids were effectively used
l. Strongly disagree 5. Strongly agree
- C. The course material handed out was adequate
l. Strongly disagree 5. Strongly agree
- D. The instructors encouraged interaction and were helpful
l. Strongly disagree 5. Strongly agree
- E. Were objectives of the course realized? Yes No

F. Please give overall rating of the course

90% - 100% ()

60% - 70% ()

80% - 90% ()

50% - 60% ()

70% - 80% ()

below 50% ()

Please comment on the strengths of the course and the way it was conducted.

Please comment on the weaknesses of the course and the way it was conducted.

Please give suggestions for the improvement of the course.

Optional - Your name and contact address:

Thank you!!
