Faisalabad Medical University

BLOCK L

4th Year MBBS

Approval Statement

Study Guide - BLOCK L

The undersigned subject heads, hereby approve the study guides for undergraduate MBBS students, having thoroughly reviewed and validated the content for accuracy, relevance, and alignment with the curriculum.We confirm that the study guides have undergone rigorous evaluation and have met the standards set by PMDC and our institution.

By signing below, we endorse these study guides as a valuable resource for our students, ensuring they receive comprehensive and high-quality educational materials to support their academic success.

Head of Department	**Name of Department**	**Signature**
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Prof. Dr Aamir Shaukat	Medicine & Family Medicine	
Prof. Dr Imtiaz Ahmad Dogar	Psychiatry	
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Prof. Dr Hooria Aamir	Physiology	
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Prof. Dr Tahir Bashir Malik	Urology	
Prof. Dr Attia Anwar	Pharmacology	
Prof. Dr Fakeha Rehman	Pathology	
Prof. Dr Sadia Zafar	Pediatrics	

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Dr Shoaib Ahmed Malik	Biochemistry	
Dr Ayesha Ayub	HPERD	

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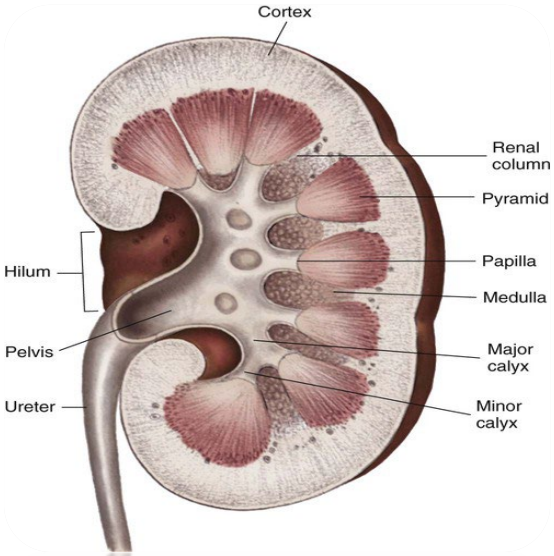
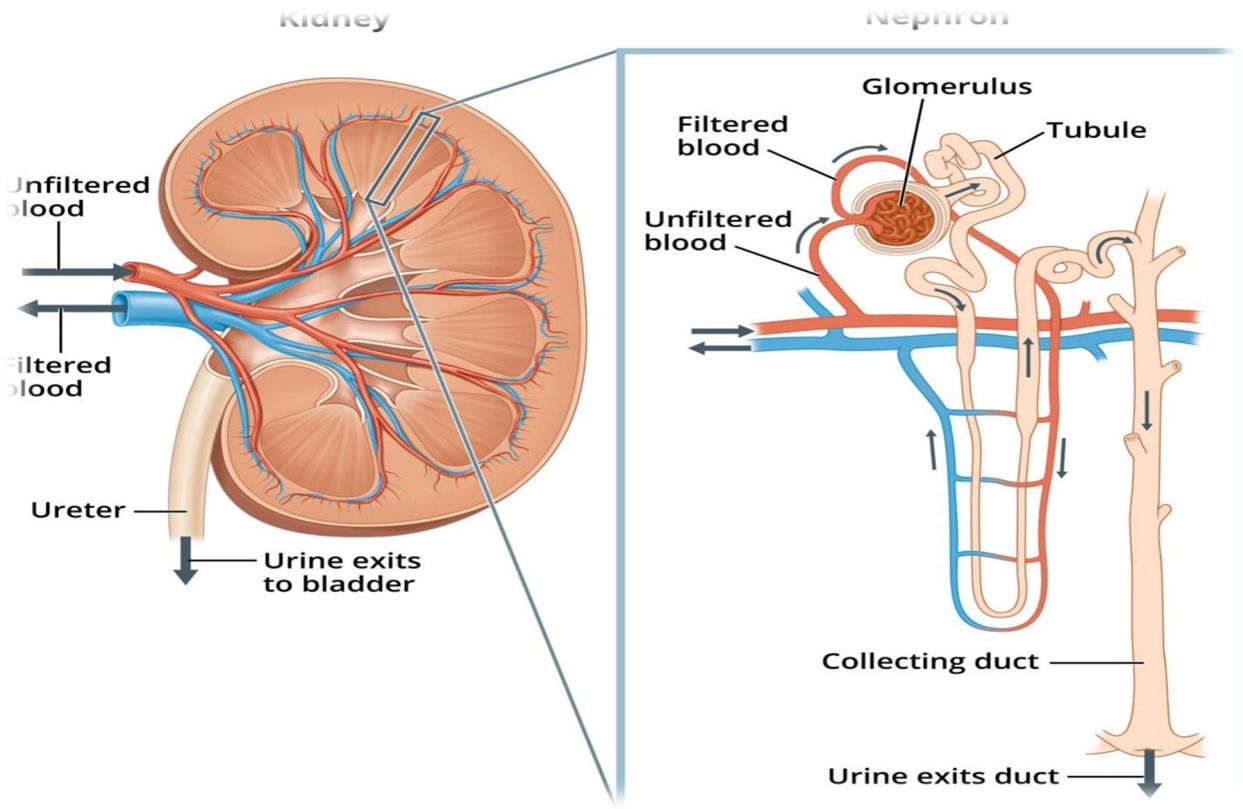
Module-Renal-II





Module Committee

Introduction of Module

Chairperson Curriculum Committee	Prof. Dr. Humaira Gulnaz	Professor & Head of Anatomy Department
Curriculum Coordinator	Dr. Ayesha Ayub	In-charge Health Professions Education & Research Department
Block & Module Coordinator	Dr Majida Hanif	Demonstrator pathology department

Academic Team Members

All departments involved	**Focal person name**	**Designation**	**Sign**
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PRIME	Dr Sinha	SR	

Introduction:

The Renal-II module is an essential component of the MBBS curriculum designed to integrate the basic sciences with clinical applications related to the urinary system. It focuses on understanding the normal structure and function of kidneys as well as common pathological conditions, their diagnosis, and management. The module highlights renal physiology, pathology, pharmacology, radiology, and surgical aspects, enabling students to link theoretical knowledge with clinical practice. By addressing common presentations such as facial swelling, scanty urine, loin pain, dysuria, and urinary retention, this module prepares students for effective patient care and future professional responsibilities.

Rationale:

The Renal-II module deepens understanding of kidney function by linking renal anatomy with physiological mechanisms. Highlighting the structure of nephrons aids in grasping filtration, reabsorption, secretion, and urine concentration processes. Emphasizing both cortical and juxtamedullary nephron types illustrates their roles in maintaining fluid and electrolyte balance. Integrating anatomy with physiology empowers learners to diagnose and manage renal disorders effectively. The module also bridges basic science with clinical relevance—covering topics like renal histology, blood pressure regulation, and hormonal interactions. This balanced approach ensures learners are prepared for both theoretical exams and practical clinical scenarios.

Teaching Hours Allocation

Sr. No	Subject	Hours Needed
1	Pathology	23
2	Pharmacology	4
3	Forensic medicine	1
4	Community medicine	15
5	Medicine	9
6	Family medicine	1
7	Urology	9
8	Anatomy	1
9	Physiology	1
10	Biochemistry	1
11	Pediatrics	3

12	Gynecology	1
13	Radiology	1
14	Research	7
15	PRIME	1
	Total	78

List of Themes

Sr. No	Theme	Duration
1	Facial swelling	1 week
2	Calculus Anuria/Oliguria	2 weeks
3	Loin pain and dysuria	
4	Urinary retention	

General Learning Objectives

By the end of Module,4th year MBBS students will be able to:

1. Explain the normal structure and function of the kidneys and urinary tract.
2. Recognize common clinical presentations of renal diseases such as edema, oliguria, hematuria, dysuria, and urinary retention.
3. Correlate pathological mechanisms with clinical features and laboratory findings in major renal disorders.
4. Interpret basic investigations including urinalysis, renal function tests, imaging, and biopsy findings.
5. Outline the principles of management for acute and chronic kidney diseases, nephrotic/nephritic syndromes, urinary tract infections, renal stones, and obstructive uropathies.
6. Integrate knowledge from anatomy, physiology, pathology, pharmacology, medicine, pediatrics, and surgery in approaching renal problems.
7. Apply preventive and community medicine perspectives, including screening, risk factor modification, and ethical issues in renal transplantation.

Specific Learning Objectives

Theme-1 Facial swelling

Sr.#	Subject	Topic	Learning objectives	Teaching Strategies	Duration (Hour)	Assessmen
1	**Anatomy**	Applied anatomy of urinary system	• Discuss anatomical features of kidney • Discuss anatomical features of urinary bladder • Discuss anatomical features of ureters. • Discuss anatomical features of prostate and urethra • Describe clinical correlations of kidney, ureter, urinary bladder, prostate and urethra	Interactive Lecture	1 hr.	MCQs
2	**physiology**	GFR Absorption of water and solutes	• Describe glomerular filtration rate(GFR),determinants of GFR and estimation of GFR • Describe the absorption of water and solutes along different parts of nephron	Interactive Lecture	1 hr.	MCQs
3	**Biochemistry**	Acid-base balance	• Describe body buffer systems to maintain acid base balance • Discuss acid base disorders	Interactive Lecture	1 hr.	MCQs

4	**Pathology**	Glomerular Diseases (I)	• Classify Glomerular diseases. • Describe the pathological responses, pathogenesis and mediators of glomerular injury. • Discuss the etiologies, clinicopathological features and morphology of the diseases presenting as Nephritic syndrome • Discuss the etiologies, clinicopathological features and morphology of the diseases presenting as Nephrotic syndrome. • Explain the pathogenesis and morphology of minimal change disease. • Describe the etiology, pathogenesis, morphology and clinical presentation of focal segmental glomerulosclerosis.	Interactive Lecture	1 hr.	MCQs

		Glomerular Diseases (II)	• Describe the etiology, pathogenesis, morphology and clinical presentation of membranoproliferative glomerulonephritis. • Describe the etiology, pathogenesis, morphology and clinical presentation of membranous nephropathy. • Describe the etiology, pathogenesis, morphology and clinical presentation of IgA nephropathy and alport syndrome. • Describe the pathogenesis, morphology of diabetic, HIV-associated , hereditary nephropathy and other Glomerular diseases.	Interactive Lecture	1 hr.	MCQs
		Vascular events	• Discuss the etiology, pathogenesis, and morphology of Nephrosclerosis, malignant hypertension and Renal Artery stenosis.	SGD	2 hr.	MCQs
5	**Medicine**	Interpretation of urinalysis	• Explain various abnormalities and their interpretation and importance regarding specific diagnosis • Highlight the importance of urine abnormalities in other systemic diseases apart from kidney and	Interactive Lecture	1 hr.	MCQs

			urogenital tract abnormalities			
		Nephrotic syndrome	• Define Nephrotic Syndrome. • Interpret the criteria for diagnosing Nephrotic Syndrome • Describe symptoms, signs and complication of Nephrotic Syndrome. • Discuss the important investigations and management plan for Nephrotic syndrome	Interactive Lecture	1 hr.	MCQs
		Nephritic syndrome	• Interpret the criteria for diagnosing Nephritic Syndrome. • Describe symptoms, signs and important causes of Nephritic Syndrome. • Enumerate important investigations and discuss the treatment plan.	Interactive Lecture	1 hr.	MCQs

		Electrolytes Abnormalities	• Define electrolyte abnormalities (Hyponatremia, Hypernatremia, Hyperkalemia, hypokalemia). • Describe the clinical features and diagnostic lab investigations of various electrolyte abnormalities. • Calculate the sodium deficit and free water deficit. • Calculate rate of sodium replacement. • Discuss the complications and management plan of electrolyte abnormalities.	Interactive Lecture	1 hr.	MCQs
6	**Paediatric Medicine**	Acute post streptococcal glomerulonephritis (APGN) Acute glomerulonephritis (AGN)	• Define AGN and APGN • Describe the pathogenesis of Nephritic syndrome • Discusss clinical features and differential diagnosis of APGN • Describe investigations required for diagnosis of APGN • Describe the treatment requirements for patients with APGN	Interactive Lecture	1 hr.	MCQs

		Nephrotic syndrome	• Define Nephrotic syndrome • Describe pathophysiology of nephrotic syndrome • Classify nephrotic syndrome • Describe clinical features of nephrotic syndrome • Describe tests required for diagnosis of nephrotic syndrome • Discuss treatment steps in the management of nephrotic syndrome • Describe the complications of nephrotic syndrome and its prognosis.	Interactive Lecture	1 hr.	MCQs
			SKILL LAB			
1	**Pathology**	Urine staining, and culture	• Demonstrate the Staining methods and their principles for urine specimens of acute and chronic UTI • Identify the uropathogens shown in the slide • Demonstrate sterilized methods for collections of specimens for culture and sensitivity. • Perform culture and sensitivity by disc diffusion method for any uropathogen.	Skill Lab	2 hr.	OSPE

Theme-2		Calculus Anuria/Oliguria				
Sr.#	**Subject**	**Topic**	**Learning objectives**	**Teaching Strategies**	**Duration (Hour)**	**Assessment**
1	**Pathology**	Renal function test	• Interpret normal and abnormal ranges of Blood urea, creatinine, and electrolytes • Explain creatinine clearance and other radiological and biochemical renal function tests and their clinical significance	SGD	2 hr.	MCQs
		Acute kidney injury	• Explain the etiology, pathogenesis, morphology, clinical presentation and complications of acute kidney injury	Interactive Lecture	1 hr.	MCQs
		Chronic Renal Failure	• Explain the etiology, pathogenesis, morphology, clinical presentation and complications of chronic renal failure.	Interactive Lecture	1 hr.	MCQs
2	**Medicine**	Acute Kidney Injury	• Define AKI. • Enlist the criteria for diagnosing AKI. • Discuss prerenal & post renal causes and symptoms and signs of AKI. • Discuss the important complications and	Interactive Lecture	1 hr.	MCQs

			important investigations. • Discuss management plan for a patient with AKI.			
		Chronic Kidney Disease(CKD)	• Define CKD. • Enlist criteria for diagnosing CKD. • Discuss important causes and symptoms, signs of CKD. • Discuss the important complications, investigations and treatment plan for CKD.	Interactive Lecture	1 hr.	MCQs
		Renal Replacement Therapy(RRT)	• Define RRT and enlist the different types of RRT. • Enumerate important indications of dialysis. • Describe the important complications of dialysis. • Discuss the Renal transplant and discuss the types of transplant rejection.	Interactive Lecture	1 hr.	MCQs
3	**Forensic Medicine**	Ethics of Organ Transplantation	• Describe Ethics of Organ Transplantation • Describe current legislation of HOTA (Human Organ Transplant Act) • Identify loop holes in existing system of human organ transplant.	Interactive Lecture	1 hr.	MCQs

4	**Urology**	Renal Transplant Surgery	• Discuss diagnostic indicators for renal transplant • Describe pre-requisite for successful renal transplant • Discuss post renal transplant care of patient • Describe common complications of renal transplant surgery • Discuss immunosuppressive drugs used in Renal transplant	Interactive Lecture	1 hr.	MCQs
5	**Family Medicine**	Acute renal presentations-(primary care management and Red flags)	• Explain the etiology, clinical features and presentation of acute renal failure • Describe the steps of management of a patient with anuria and oliguria • Identify patients that need urgent and proper referral for specialist care in primary healthcare with anuria and acute and chronic renal disease	Interactive Lecture	1 hr.	MCQs

6	**Community Medicine**	Environmental health: Introduction	• Define& classify environmental degradation • Discuss the importance of environmental health	Interactive Lecture	1 hr.	MCQs
		Water pollution	• Define water pollution and describe its importance for health • Describe the different types of water pollution as simple biodegradable, complex biodegradable and complex non-degradable	Interactive Lecture	1 hr.	MCQs
		Water quality management 1	• Explain the importance and daily requirements of water • Describe physical and chemical quality parameters and their interpretation • Describe the qualities and criteria of different sources of water	Interactive Lecture	1 hr.	MCQs
		Water quality management 2	• Classify different methods of purification of water • Describe natural , physical and chemical methods of purification of water • Describe various filtration methods	Interactive Lecture	1 hr.	MCQs

			• Describe purification of water in special circumstances			
SKILL LAB						
1.	**Community Medicine**	Sand filters	• Identify the water sand filter and its different layers • Calculate the dose of bleaching powder required for disinfection of water in a domestic tank • Assess the quality of water sample on the basis of physical parameters (color, turbidity, suspended particles, temperature and Ph.) • Interpret the bacteriological quality of water on the basis of presumptive coliform test	Skill Lab	2 hr.	OSPE

Theme-3 Loin pain and Dysuria

Sr.#	Subject	Topic	Learning objectives	Teaching Strategies	Duration (Hour)	Assessment
1	**Pathology**	Pyelonephritis	• Discuss the etiology, clinicopathological presentation, morphology, and complications of Acute Pyelonephritis, • Discuss the etiology, clinicopathological presentation, morphology and complications of chronic pyelonephritis • Discuss the etiology, clinicopathological presentation, morphology, and complications of drug induced nephritis	Interactive Lecture	1 hr.	MCQs
		Cystic Diseases of the Kidney	• Classify the cystic diseases of Kidney. • Describe the inheritance, Pathological features, Complications, and prognosis of polycystic diseases of Kidneys. • Differentiate between the inheritance, pathological features, typical outcomes and clinical features of	Interactive Lecture	1 hr.	MCQs

			Adult and Childhood Polycystic Kidney Diseases • Differentiate between the inheritance, pathological features, typical outcomes and clinical features of Childhood Polycystic Kidney Diseases.			
		Urolithiasis	• Discuss the types of Renal stones. • Discuss the etiology and pathogenesis of Renal stones • Co-relate the occurrence of renal stones with different metabolic diseases • Differentiate between the different renal stones based on frequency, predisposing factors, urine PH and morphology.	SGD	2 hr.	MCQs
		Neoplasms of the Kidney	• Classify the benign and malignant tumors of the Kidney. • Discuss the etiology, morphology, and prognosis of Renal cell carcinoma • Discuss the genetics, clinicopathological features, morphology, and prognosis of Wilm's tumor • Describe the various investigations to	Interactive Lecture	1 hr.	MCQs

			diagnose renal tumors (albumin/creatinine ratio, urine for micro albumin) • Discuss management of renal tumors			
		Congenital anomalies of bladder	• Describe the congenital anomalies of bladder and urethra	Interactive Lecture	1 hr.	MCQs
		Acute Cystitis Chronic Cystitis	• Discuss the etiology, morphology clinicopathological features and complications of Acute Cystitis • Discuss the etiology, morphology clinicopathological features and complications of Chronic Cystitis.	Interactive Lecture	1 hr.	MCQs
2	**Pharmacology**	Urinary Tract Infection (UTI)	• Describe the clinical pharmacology of drugs used in the management of acute and chronic UTI	Interactive Lecture	1 hr.	MCQs

3	**Medicine**	Autosomal Dominant Polycystic Kidney Disease (ADPKD)	• Define ADPKD and enlist the criteria for diagnosing ADPKD. • Discuss the genetic causes. • Discuss symptoms, signs and important complications of ADPKD. • Discuss important investigations and management plan.	Interactive Lecture	1 hr.	MCQs
		Urinary Tract Infections (UTIs)	• Define UTIs and enlist the criteria for diagnosing UTIs. • Differentiate the complicated and uncomplicated UTIs. • Discuss symptoms, signs and important complications of UTIs. • Interpret important investigations. • Discuss a management plan for a patient with UTI.	Interactive Lecture	1 hr.	
4	**Community medicine**	Sexually Transmitted Infections	• Describe epidemiology of STI's including: o HIV/AIDS o Syphilis o Chalamydia o Genital warts o Human Papilloma virus (HPV) • Describe STI's in terms of causative agent, incubation period, transmission, manifestation • Enlist Preventive	SGD	2 hr.	MCQs

			and control measures of STI's • Discuss preventive strategies in Pakistan • Enlist occupations at risk of STI's specially HIV.			
5	**Radiology**	Urological Investigation	• Discuss the role of plain X-ray,USG KUB (Kidney, ureter, bladder)and CT in patient with loin pain and dysuria • Discuss role of nuclear scans,DTPA Scan, DMSA Scan, MAG 3 Scan in patient with loin pain and dysuria	Interactive Lecture	1 hr.	MCQs
6	**Pediatric Medicine**	Urinary tract infection (UTI)	• Describe the types of UTI. • Discuss prevention and management of UTI in children.	Interactive Lecture	1 hr.	MCQs
7	**Urology**	Kidney stones	• Describe factors predisposing to specific stone types. • Discuss clinical features and Diagnosis of renal stones • Describe renal stone treatment options	Interactive Lecture	1 hr.	MCQs
		Renal Trauma Pelviureteric junction obstruction (PUJO)	• Describe Initial resuscitation of renal trauma patient • Classify mechanism and grading of renal trauma • Discuss clinical and radiological assessment of renal trauma.	Interactive Lecture	1 hr.	MCQs

			• Describe etiology (congenital and acquired causes). • Describe clinical presentation of PUJO. • Interpret Investigations (renal ultrasound, IVU (Intravenous urography), MAG-3 renography, retrograde pyelography). • Describe management plan options (Endopyelotomy, Pyeloplasty).			
		Anomalies of renal fusion and descent Renal cell carcinoma (RCC)	• Describe various anomalies of renal tracts like Horseshoe kidney, Ectopic kidney, Renal agenesis, Malrotated kidney, Urinary tract duplication. • Describe clinical presentation and investigation of RCC. • Enlist Treatment of localized RCC. • Construct Management of metastatic RCC	Interactive Lecture	1 hr.	MCQs
SKILL LAB						

1.	**Pharmacology**	Prescription writing for acute and chronic UTIs	• Formulate prescriptions for acute and chronic UTIs.	Skill lab	2 hr.	OSPE
2.	**Pathology**	Urolithiasis	• Identify the common types of renal stones (calcium oxalate, uric acid, struvite, cystine) . • Correlate clinical features of urolithiasis with radiological findings.	Skill lab	2 hr.	OSPE
		Chronic pyelonephritis	• Describe the pathogenesis, morphology, and complications of chronic pyelonephritis using histopathology slides, gross specimens • Differentiate chronic pyelonephritis from acute pyelonephritis and other causes of chronic kidney disease based on morphology and clinical history. • Interpret relevant laboratory results (urinalysis, culture/sensitivity, serum creatinine) and explain their role in diagnosis.	Skill lab	2 hr.	OSPE

		Renal Cell carcinoma, Urothelial carcinoma	• Describe gross and microscopic features of RCC and urothelial carcinoma. • Identify RCC and Identify urothelial carcinoma based on morphology and histopathology.	Skill lab	2 hr.	OSPE

Theme-4		Urinary Retention				
Sr.#	**Subject**	**Topic**	**Learning objectives**	**Teaching Strategies**	**Duration (Hour)**	**Assessment**
1	**Pathology**	Obstructive Uropathy	• Discuss the etiology of obstruction in urogenital tract at different levels. • Discuss the effects of obstruction on function and morphology of kidney. • Describe clinicopathological features and morphology of Hydronephrosis	Interactive Lecture	1 hr.	MCQs
		BPH	• Describe pathophysiology of Benign prostatic hypertrophy and risk factors.	SGD	2 hr.	MCQs

		Tumors of urinary Bladder Carcinoma of prostate	• Classify tumors of urinary bladder. • Discuss the etiology, pathogenesis, morphology, staging and prognosis of urothelial (Transitional Cell) Tumors.	Interactive Lecture	1 hr.	MCQs
2	**Pharmacology**	Drugs for benign prostatic hyperplasia Carcinoma of prostate	• Classify the drugs used in the management of BPH • Describe the alpha-adrenergic blocking drugs with special reference to those having specific affinity for prostate muscle. • Describe the role of alpha blockers, 5-alpha reductase inhibitors (Finasteride) and combination therapy in BPH. • Describe the adverse effects of the drugs used to treat BPH. • Describe the hormonal agents used in the management of Prostatic carcinoma. • Describe the mechanism of action of Gonadotropin-releasing hormone (Goserelin) and anti-androgens (Cyproterone	SGD	2 hr.	MCQs

			acetate and Flutamide) in the management of Prostatic carcinoma. • Describe the anticancer chemotherapeutic agents used in the management of Prostatic carcinoma.			
3	**Community medicine**	Air Pollution & air quality management	• Define air pollution. • Enumerate EPA criteria pollutants. • Describe the sources of air pollutants and their adverse effects on health. • Describe Air Quality Index. • Explain the measures for control of air pollution • Describe the global adverse effects of air pollution- ozone depletion, greenhouse effect, smog, acid rain. • Discuss global warming and climate change	Interactive Lecture	1 hr.	MCQs
		Noise pollution	• Define noise pollution. • Explain adverse effects of noise pollution on health. • Enumerate acceptable noise standards. • Discuss the measures for prevention of	Interactive Lecture	1 hr.	MCQs

			adverse effects of noise on health • Classify different types of radiations to which humans are exposed. • Describe adverse effects and preventive measure against exposure to different types of ionizing radiations. • Describe the acceptable limits of radiation exposure			
		Hospital waste management	• Define and classify hospital waste • Explain the importance of hospital waste management in health • Discuss hospital waste management and protocol • Discuss the impacts of improper hospital waste management on health • Describe the methods to minimize hospital waste	Interactive Lecture	1 hr.	MCQs
		Disasters and health	• Describe classification of disasters • Explain disaster management • Describe pre-disaster management • Describe post-disaster management in	SGD	2 hrs.	MCQs

			immediate, intermediate, and long-term stages. • Discuss management and preventive measures from previous disasters. • Describe the history of disasters in Pakistan.			
4	**Urology**	Carcinoma of urinary bladder	• Discuss clinical Presentation of bladder cancer. • Construct management Plan of bladder cancer. • Describe diagnosis and clinical staging of bladder cancer.	Interactive Lecture	1 hr.	MCQs
		Enlarged Prostate	• Define IPSS (International prostate symptoms scoring) for enlarged prostate. • Describe watchful waiting for enlarged prostate and medical management of BPH. • Describe Minimal invasive management and invasive surgical treatment eg. TURP (transurethral resection of prostate) and Open prostatectomy	Interactive Lecture	1 hr.	MCQs

		Carcinoma of prostate	• Describe clinical presentation and management of carcinoma prostate	Interactive Lecture	1 hr.	
		Urinary Incontinence	. • Discuss urinary incontinence. • Classify urinary incontinence. • Discuss nocturnal enuresis. • Describe causes, pathophysiology and evaluation of incontinence • Describe Investigation of incontinence. • Describe conservative treatment options and surgical options	Interactive Lecture	1 hr.	MCQs
		Urethral Strictures Posterior Urethral Valves	• Describe etiology, Presentation, investigation, and management of urethral strictures • Discuss clinical presentation and management of Posterior urethral valves (PUV).	Interactive Lecture	1 hr.	MCQs

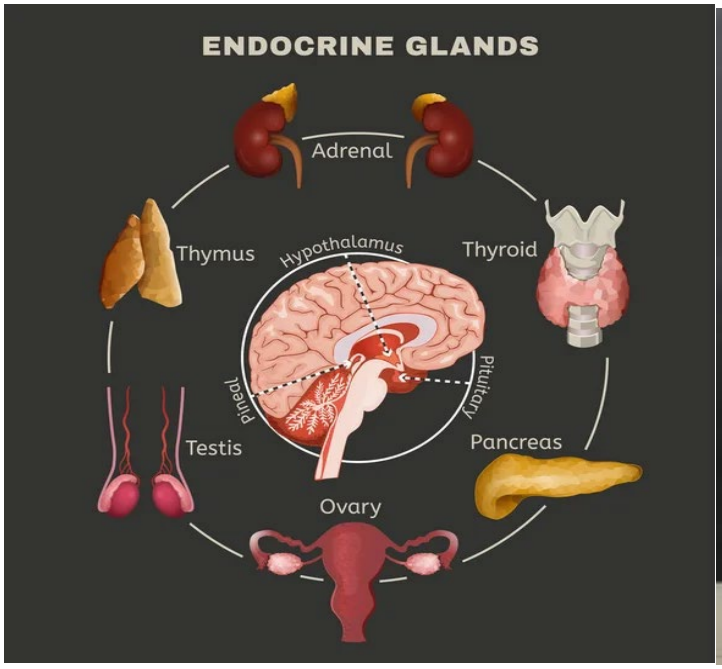
5	**Medical Education**	Community need analysis (approaches to professionalism) Needs analysis &SWOT analysis	• Identify the health care needs of community	Interactive Lecture	1 hr.	MCQs
6	**Gynaecology**	Urogynaecology	• Classify types of urinary incontinence • Discuss clinical assesment of patient with incontinence • Discuss management of stress incontinence and detrusor overactivity	Interactive Lecture	1 hr.	MCQs
SKILL LAB						
1.	**Community Medicine**	Incinerator/ waste disposal methods	• Identify different waste disposal methods • Explain the steps for final waste disposal	Skill Lab	2 hr.	OSPE

Learning Resources

Sr. No	Subjects	Textbooks
1.	**Anatomy**	● K.L. Moore, Clinically Oriented Anatomy ● KeithL. Moore. The Developing Human ● Langman's Medical Embryology
2.	**Community Medicine**	● Community Medicine by Parikh ● Community Medicine by M Ilyas ● Basic Statistics for the Health Sciences by Jan W Kuzma
3.	**Pathology**	● Robbins & Cotran, Pathologic Basis of Disease,10 th edition. ● Rapid Review Pathology,4 th edition by Edward F. Goljan MD
4.	**Obs & Gynae**	● Gynaecology by Ten Teachers, Louise Kenny, Helen Bickerstaff 21th edition ● Hacker & Moore's Essentials of Obstetrics and Gynecology ● Textbook of Gynecology, Rashid Latif Khan ● Fundamentals of Gynaecology, Dr Arshad Chohan
5.	**Physiology**	● Textbook Of Medical Physiology by Guyton And Hall ● Ganong's Review of Medical Physiology ● Human Physiology by Lauralee Sherwood ● Berne & Levy Physiology ● Best & Taylor Physiological Basis of Medical Practice
6.	**Paeds**	● Basis of Pediatrics (8th Edition Pervez Akbar)
7.	**Medicine and Family Medicine**	● DAVIDSON'S PRINCIPLES AND PRACTICE OF MEDICINE 24ED ● Kumar and Clark's Clinical Medicine 11th Edition ● Mcleads Clinical examination 14th edition
8.	**Pharmacology**	● Lippincot and Ketzung
9.	**Forensic medicine**	● Principles and rectus of forensic medicine 2nd edition by naseeb R awan ● Textbook of medical jurisprudence by Parekh 8th edition
10.	**Urology**	● Bailey & Love's Short Practice of Surgery (28th Edition)

11.	**Biochemistry**	● Lippincott's Illustrated Reviews: Biochemistry, 5th Edition

Endocrine and Reproduction-II Module



Module Committee

Chairperson Curriculum Committee	Prof. Dr. Humaira Gulnaz	Professor & Head of Anatomy Department
Curriculum Coordinator	Dr. Ayesha Ayub	In-charge Health Professions Education & Research Department
Module Coordinator	Dr. Farah Batool	Module coordinator

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Departments involved	**Focal person name**	**Designation and sign**
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Pathology	Dr Majda Hanif	Demonstrator
Community Medicine	Dr Anum Azam	Demonstrator
Forensic medicine	Dr Zunaira Misbah	APMO
Pharmacology	Dr. Saba/Dr. Awais Hafeez	Demonstrator

Medicine	Dr. Zaheer	Senior Registrar
Surgery	Dr. Sabahat Shaheen	Senior Registrar
Urology	Dr. Suaiba Saif	Assistant professor
Pediatric Medicine	Dr. Sumaira Irfan	Senior Registrar
Physiology	Dr. Asifa Zaheer	Senior Demonstrator
Neurosurgery	Dr. Anum Wahab	Senior Registrar
Psychiatry	Dr. Kainaat	Senior Registrar
Radiology	Dr Abdul Rauf	Assistant Professor
Research	Dr Bilal Ahmad	Senior Demonstrator

Introduction of Module

Introduction:

The endocrine and reproductive systems are two vital systems in the human body that work closely together to regulate growth, development, metabolism, and reproduction. The **endocrine system** consists of glands such as the pituitary, thyroid, adrenal, pancreas, and gonads (ovaries and testes), which secrete hormones directly into the bloodstream. These hormones act as chemical messengers that regulate various bodily functions, including mood, metabolism, growth, and sexual development.

The **reproductive system**, on the other hand, is responsible for producing, nurturing, and transporting reproductive cells (sperm in males and ova in females), as well as supporting the development of offspring in females.

The endocrine and reproductive systems are closely linked, especially through hormones such as estrogen, progesterone, and testosterone, which are essential for sexual development and reproductive function. The pituitary gland, often called the "master gland," plays a major role by regulating hormone production in the gonads. Together, these systems maintain reproductive health and ensure the continuation of species, highlighting their importance in both individual well-being and human survival.

Rationale:

The endocrine and reproductive systems are foundational components of human physiology and medicine. This module is essential for undergraduate medical students as it provides a comprehensive understanding of hormonal regulation and reproductive health, which are critical for diagnosing and managing a wide range of clinical conditions. Disorders such as diabetes mellitus, thyroid dysfunction, infertility, polycystic ovarian syndrome (PCOS), and endocrine cancers are increasingly prevalent and require a strong grasp of both endocrine and reproductive principles for effective treatment.

Through this module, students will learn about hormone synthesis, secretion, and mechanisms of action, as well as the feedback systems that maintain physiological balance. It also covers the anatomy and physiology of the male and female reproductive systems, sexual development, puberty, and the menstrual cycle .Gynaecological disorders of clinical significance and their medical and surgical mangement will be discussed in this module.In this module students will be able to understand the pathology of endocrine diseases and it will also cover the mechanism of action of important drugs used for treatment of endocrine and gynaecological diseases.

By integrating basic science with clinical applications, this module enhances critical thinking and clinical reasoning skills. It prepares future doctors to recognize endocrine and reproductive abnormalities, interpret diagnostic tests, and apply appropriate treatment strategies. Understanding these systems is also vital in addressing public health issues related to reproductive health and endocrinopathies. Therefore, this module forms a crucial part of the medical curriculum, laying the groundwork for safe, competent, and holistic patient care.

Teaching Hours Allocation

Sr. No	Subject	Hours Needed
1	Gynecology	17
2	Pharmacology	25
3	Medicine	19
4	Physiology	2
5	Pediatric Medicine	3
6	Pathology	36
7	Community medicine	28
8	Forensic medicine	18
9	Medical education PRIME	4
10	Neurosurgery	1
11	General Surgery	3

12	Urology	3
13	Research	12
14	Family Medicine	1
	Total	172

List of Themes

Sr. No	Theme	Duration(days)
1	Abnormalities of stature	3
2	Neck swelling and Muscle cramps	6
3	Excessive Thirst and Urination	6
4	Moon Face	5
5	Infertility and Pregnancy	15
6	Breast Lump	3
	Total	38 (5+3 weeks)

General Learning Objectives

By the end of Module,4th year MBBS students will 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. Discuss the etiology, risk factors, clinical features, investigations, and treatment of carcinoma of breast
8. 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.
9. Formulate prescriptions for patients with Graves' disease and Diabetes mellitus
10. Discuss the laws related to sexual offenses, and management of a rape victim in forensic aspects
11. Explain the pathophysiology and surgical management of benign prostatic hyperplasia and carcinoma of the prostate

Specific Learning Objectives

Theme: 1 Abnormalities of Stature						
Sr.#	**Subject**	**Topic**	**Learning objectives**	**Teaching Strategies**	**Duration (Hour)**	**Assessment**
1	**Physiology**	General Principles of Endocrinology Pituitary gland	• Classify hormones according to their chemical structure and mechanism of action. • Differentiate between different intracellular signaling mechanismsS • Explain tyrosine kinase signaling in growth hormone and other peptide hormone functions. • Relate the hypo function, hyperfunction and responsiveness of target cells with endocrine disorders • Compare the means by which hypothalamus controls output from pituitary and other glands.	Interactive Lecture	1hr.	MCQs
2	**Community Medicine**	Occupational Health 1 (Introduction)	• Define occupational health. • Enlist occupational health hazards and discuss different terms related to hazards • Describe (OSHA).	Interactive Lecture	1hr.	MCQs

			• Describe principles and responsibilities of occupational health officer [OHO]. • Define and describe ergonomics. • Discuss ergonomic measures in different workplaces			
		Occupational Health 2 (occupational hazards)	• Enumerate physical, chemical and biological hazards related to different occupational settings. • Discuss adverse effects of physical, chemical and biological hazards on health • Discuss preventive and control measures for physical, chemical and biological occupational hazards.	Interactive lecture	1hr.	MCQs
		Occupational Health 3 (Occupational lung diseases)	• Define and classify pneumoconiosis. • Define productive dust. • Discuss preventive and control measures for pneumoconiosis.	Interactive Lecture	1hr.	MCQs

		Occupational Health 4 (Animal Hazards)	• Classify snakes prevalent in Pakistan. • 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	Interactive Lecture	1hr.	MCQs
		Demography 1 (Introduction)	• Define demography and various related terms. • Explain and interpret population pyramid. • Explain demographic transition model. • Describe the causes of high and low fertility and mortality. • Define demographic indicators.	Interactive Lecture	1hr.	MCQs
		Demography 2	• Define urbanization. • Define population	Interactive Lecture	1hr.	MCQs

			growth rate, CDR, CBR. • Describe population momentum • Describe population explosion. • Define dependency ratio. • Discuss types of dependency ratio. • Discuss demographic dividend.			
		Demography 3	• Describe & calculate population doubling time. • Describe population explosion & its implications. • Explain advantages of population control. • Describe the demographic indicators of Pakistan.	Interactive Lecture	1hr.	MCQs
3	**Pharmacology**	Growth hormone & Growth hormone antagonists	• Describe the sources of Growth hormone (old and new sources). • Describe the mechanism of action, clinical uses and adverse effects of Growth hormone • Enlist Growth hormone antagonist • Describe the clinical role of Octreotide in acromegaly.	Interactive Lecture	1hr.	MCQs

			• Describe the route of administration, dosage, and adverse effects of octreotide in acromegaly and gigantism.			
		Dopamine (D2) antagonists	• Describe the mechanism of action, clinical uses, and adverse effects of Bromocriptine. • Describe the mechanism of action ,clinical uses and adverse effects of cabergoline	Interactive Lecture	1hr.	MCQs

4	**Pathology**	Etiopathogenesis of pituitary disorders(I)	• .Discuss the causes of hyperpituitarism and hypopituitarism • Classify pituitary adenomas • Describe etiology, pathogenesis, morphology and clinical manifestations of pituitary tumors. • Discuss the pituitary diagnostic tests • .Describe the diagnostic approach to growth hormone disorders, including acromegaly and short stature.	Interactive Lecture	1hr.	MCQs
		Etiopathogenesis of pituitary disorders (II)	• Briefly explain the pathophysiology and clinical presentation of Sheehan syndrome and pituitary apoplexy. • Discuss the etiopathogenesis and diagnostic tests of diabetes insipidus (DI). • Discuss the etiopathogenesis and diagnostic tests of syndrome of inappropriate ADH secretion.	SGD	1.5hr.	MCQs

5	**Medicine**	Acromegaly/Gigantism. Hyperprolactinemia	• Explain the etiology, clinical features, investigations, treatment, and complications of Acromegaly/gigantism. • Discuss the etiology, clinical features, investigations, and treatment of hyperprolactinemia.	Interactive Lecture	1hr.	MCQs
		Hypopituitarism/ Sheehans syndrome	• Explain the etiology, clinical features, investigations and treatment of Hypopituitarism and Sheehan`s syndrome.	Interactive Lecture	1hr.	MCQs
6	**Neuro Surgery**	Surgical management of Pituitary adenoma	• Explain the surgical management of Pituitary Macro/Micro adenoma • Discuss the surgical complication.	Interactive Lecture	1hr.	MCQs
7	**Pediatric Medicine**	Short stature	• Describe the method to measure and plot height; and calculate height velocity and mid parental, target	Interactive Lecture	1hr.	MCQs

			height to allow early diagnosis of growth disorders in pediatric patients. • Explain the diagnostic criteria that allow to differentiate causes of growth deficiency. • Discuss the tool for better communication with patients and families and co ordination of multidisciplinary care • Discuss treatment of growth hormone deficiency or other diseases responsible for short stature and their appropriate management.			
8	**PRIME**	Dealing with patients	• Culture life style and belief system in society • Serve the patient as individual considering life style, belief and support system	Group discussion /role play	1 hr	formative

Skill Lab.

Subject	Topic	Learning objectives	Teaching Strategies	Duration (Hour)	Assessment
Community Medicine	**Snake bite**	• Identify the type of snakes • Differentiate between venomous and non-venomous snakes and snake bites. • Discuss anti venom therapy for management of snake bite	Practical Work	2 hr.	OSPE

Theme: 2 Neck swelling & Muscle cramps

Sr. #	Subject	Topic	Learning objectives	Teaching Strategies	Duration (Hour)	Assessment
1	**Physiology**	Thyroid Gland	• Differentiate between intracytoplasmic and intranuclear mechanisms of hormone functions. • Relate gene transcription with thyroid hormone function • Illustrate the effects and regulation of thyroid hormone in a flow diagram.	Interactive Lecture	1hr.	MCQs
2	**Pharmacology**	Thyroid hormone	• Enlist thyroid preparations • Describe the mechanism of action, pharmacological effects, clinical use and adverse effects of Thyroxine (T4) and Tri-iodothyronine (T3).	Interactive Lecture	1hr.	MCQs
		Antithyroid drugs (1)	• Classify Antithyroid drugs. • Describe the mechanism of action, clinical use, and adverse effects of Thiomides. • Describe the mechanism of action, clinical use, and adverse effects of Potassium iodide. • Describe Lugol's iodine solution .	Interactive Lecture	1hr.	MCQs

		Antithyroid drugs (2)	• Describe the mechanism of action, clinical use, and adverse effects of Radioactive iodine (131I). • Describe the use of β-blockers in hyperthyroid patients	Interactive Lecture	1hr.	MCQs
3	**Pathology**	Pathogenesis of . Hyper and Hypothyroidism	• Discuss the etiology, pathogenesis and morphology of hyperthyroidism with focus on Graves' disease. • Explain the causes and consequences of hypothyroidism, including cretinism and myxedema. • Correlate clinical symptoms of thyroid hormone imbalance with underlying pathophysiology. • Interpret thyroid function tests.	Interactive Lecture	1hr.	MCQs
		Thyroiditis and Goiter	• Classify the types of thyroiditis • Discuss etiology, pathogenesis and morphological findings of Hashimoto, subacute lymphocytic, and granulomatous thyroiditis.	Interactive Lecture	1hr.	MCQs

			• Describe the clinical presentations and laboratory diagnosis of thyroiditis. • Describe the etiology , pathogenesis ,morphological features and diagnosis of goiter.			
		Thyroid Neoplasms	• Differentiate between benign and malignant thyroid neoplasms based on morphology and clinical features. • Describe key pathological features of thyroid adenomas, papillary, follicular, anaplastic, and medullary thyroid carcinomas. • Discuss genetic mutations and molecular pathways implicated in thyroid neoplasms. • Explain the diagnostic utility of fine needle aspiration (FNA) and histopathology in thyroid nodules. • Correlate prognosis with histologic type and degree of differentiation in thyroid cancers.	Interactive Lecture	1hr.	MCQs
		Disorders of Parathyroid gland	• Discuss the Pathogenesis and clinical presentation of parathyroid disorders.	Interactive Lecture	1hr.	MCQs

			• Describe etiology, pathogenesis and morphological features of parathyroid adenoma, hyperplasia and carcinoma • Briefly discuss pseudo hypoparathyroidism, autoimmune hypoparathyroidism, Familial Hypocalciureic Hyper calcaemia. • Interpret laboratory findings in parathyroid disorders.			
4	**Community Medicine**	Iodine deficiency / Goiter	• Enlist sources of iodine and goitrogens. • Discuss iodine deficiency disorders. • Discuss daily requirement of Iodine. • Explain the epidemiological determinants and control strategies for iodine deficiency/goiter. • Discuss Iodine deficiency control program in Pakistan.	Interactive Lecture	1hr.	MCQs
5	**Medicine**	Hyperthyroidism Including Grave`s disease	• Discuss the etiology, clinical features, investigations and treatment and prognosis of	Interactive Lecture	1hr.	MCQs

			Hyperthyroidism and Grave`s disease. • Explain the pathogenesis, clinical features, and management of Grave`s Ophthalmopathy.			
		Hypothyroidism	• Discuss the types, etiology, clinical features, investigations, and treatment of Hypothyroidism. • Describe the classification, etiology, clinical features, investigations, and treatment of Thyroiditis.	Interactive Lecture	1hr.	MCQs
		Multinodular Goiter Thyroid Malignancies	• Discuss the etiology, clinical features, investigations, and management approach to a patient with multinodular goitre. • Classify thyroid malignant disorders. • Discuss the pathogenesis, clinical features, investigations, and management of Thyroid malignancies.	Interactive Lecture	1hr.	MCQs
6	**Pediatric Medicine**	Congenital hypothyroidism	• Discuss the types and clinical features of hypoparathyroidism.	Interactive Lecture	1hr.	MCQs

			• Discuss investigations and treatment of Hypoparathyroidism.			
7	**PRIME**	Psychological aspects of gender and sexuality	• Understanding sexual identity formation, sexual behaviors, sexual distorders and their management	lecture	1 hr	

Skill Lab.

Subject	Topic	Learning objectives	Teaching Strategies	Duration (Hour)	Assessment
Pathology	**Goitre** ✓ **Papillary thyoid carcinoma** ✓ **Follicular adenoma** ✓ **Follicular carcinoma of thyroid**	• Identify the microscopic features of multinodular goitre , Papillary thyoid carcinoma , Follicular adenoma and follicular carcinoma	Practical Work	2 hr.	
Pharmacology	**Graves diseases**	• Formulate the prescription writing for a patient with Graves' Disease.	Practical Work	2hr	

Theme 3; Excessive thirst and Urination

Sr.#	Subject	Topic	Learning objectives	Teaching Strategies	Duration (Hour)	Assessment
1	**Pharmacology**	Insulin	• Classify insulins. • Describe the sources of insulin. • Describe the differences between the human, bovine and porcine Insulins. • Describe the differences between the human, bovine and porcine Insulins. • Describe the complications of Insulin therapy. • Describe the management of hypoglycemia caused by Insulin. • Describe the management of diabetic ketoacidosis.	Interactive Lecture	1hr.	MCQs
		Oral Hypoglycemic Drugs (1)	• Classify oral hypoglycemic drugs. • Enlist euglycemic drugs. • Describe the mechanism of action and adverse effects of Sulphonylureas. • Describe the mechanism of action and clinical use of Meglitinides.	Interactive Lecture	1hr.	MCQs

			• Describe the mechanism of action, clinical use, and adverse effects of Biguanides. • Describe the mechanism of action, clinical use, and adverse effects of Thiazolidinediones.			
		Oral Hypoglycemic Drugs (2)	• 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 Sitagliptinv.	Interactive Lecture	1hr.	MCQs
		Glucagon Vasopressin/ Desmopressin	• Describe the mechanism of action and clinical use of Glucagon. • Describe the mechanism of action, clinical use, and adverse effects of Desmopressin. • Enlist the drugs used in nephrogenic diabetes insipidus.	Interactive Lecture	1 hr.	MCQs
2	**Pathology**	Diabetes Mellitus	• Define and classify Diabetes Mellitus, briefly explain the termonogenic, gestational, diabetes, Maturity onset diabetes of young(MODY) and latent	Interactive Lecture	1 hr.	MCQs

			autoimmune diabetes of adult(LADA) • Explain etiopathogenesis and clinical presentation of diabetes mellitus • Describe the ADA Diagnostic criteria of Diabetes. • Enlist the complications of diabetes. • Explain pathogenesis and morphological findings of acute and chronic complications.			
		Pancreatic Neuroendocrine Tumors	• Describe the types and clinical presentations of pancreatic neuroendocrine tumors.	Interactive Lecture	1 hr.	MCQs
3	**Community Medicine**	Nutrition 1 (Balanced Diet)	• Discuss the balanced diet. • Discuss quality of nutrients in diet. • Discuss WHO criteria of prudent diet. • Discuss energy value of different nutrients. • Define and discuss dietary reference intakes: o RDA o EAR o AI o UL	Interactive Lecture	1hr.	MCQs

		Nutrition 2 (Macronutrients)	• Describe classification of macronutrients. • Discuss the functions and importance of various macronutrients. • Discuss daily allowance of macro nutrients. • Discuss the diseases caused by their deficiency and excess.	Interactive Lecture	1hr.	MCQs
		Nutrition 3 (Micronutrients)	• Describe classification of micronutrients. • Discuss the function and importance of various vitamins. • Discuss daily allowances of vitamins. • Discuss diseases caused by their deficiency. • Discuss daily allowance of minerals intake. • Discuss diseases caused by their deficiency.	Interactive Lecture	1hr.	MCQs
		Undernutrition – Protein Calorie Malnutrition and Control	• Define undernutrition. • Classify malnutrition. • Discuss protein calorie malnutrition & its causes. • Describe the various	SGD	2hr.	MCQs

			classifications for assessment of PEM. • Discuss control strategies of malnutrition.			
		Nutrition 4 (Over-Nutrition)	• Define & classify obesity • Discuss Epidemiology and complications of obesity. • Discuss obesity , diabetes and hypertension in the context of dietary habits • Formulate a nutritional management plan for obesity , diabetes and hypertension.	Interactive Lecture	1hr.	MCQs
4	**Medicine**	Hyperparathyroidism Hypoparathyroidism	• Discuss the types, etiology, clinical features, investigations, and treatment of Hyperparathyroidism • Discuss the types, etiology, clinical features, investigations, and treatment of Hypoparathyroidism..	Interactive Lecture	1hr.	MCQs
		Type 1 Diabetes Mellitus	• Define Type 1 Diabetes Mellitus and differentiate it from Type 2 Diabetes Mellitus. • Describe the clinical features of Type 1 Diabetes Mellitus in children, adolescents, and adults. • Explain the diagnostic criteria for Type 1	Interactive Lecture	1 hr.	MCQs

			Diabetes Mellitus and the role of autoantibodies and C-peptide levels. • Outline the principles of management of Type 1 Diabetes Mellitus, including insulin therapy, diet, and lifestyle modification. • Describe different types of insulin and insulin regimens used in the treatment of Type 1 Diabetes Mellitus. • Explain the importance of glucose monitoring and patient education in long-term disease control. • Identify chronic complications of Type 1 Diabetes Mellitus and strategies for their prevention. • Emphasize the role of a multidisciplinary approach in the comprehensive care of patients with Type 1 Diabetes Mellitus.			
		Type 2 diabetes mellitus	• Define Type 2 Diabetes Mellitus and distinguish it from Type 1 Diabetes Mellitus. • Identify genetic, lifestyle, and metabolic factors contributing to the development of Type 2 Diabetes Mellitus. • Describe the clinical features of Type 2 Diabetes Mellitus and recognize common modes of presentation. • Explain the diagnostic criteria for Type 2 Diabetes Mellitus and screening	Interactive Lecture	1 hr.	MCQs

			recommendations for high-risk individuals. • Outline the principles of non-pharmacological management**,** including diet, weight reduction, and physical activity. • Discuss oral and injectable antidiabetic drugs**,** their mechanisms of action, indications, and adverse effects. • Explain the role of insulin therapy in the management of Type 2 Diabetes Mellitus. • Explain strategies for prevention, early detection, and long-term follow-up of patients with Type 2 Diabetes Mellitus.			
		Complications of diabetes mellitus	• Define and classify the complications of diabetes mellitus into acute and chronic complications. • Describe the pathophysiological basis of diabetic complications related to chronic hyperglycemia. • Identify acute complications of diabetes mellitus, including hypoglycemia, diabetic ketoacidosis (DKA), and hyperosmolar hyperglycaemic state (HHS). • Recognize the clinical features and precipitating factors of major acute diabetic emergencies. • Describe chronic microvascular complications of diabetes mellitus, including	Interactive Lecture	1 hr.	MCQs

			diabetic retinopathy, nephropathy, and neuropathy. • Describe chronic macrovascular complications of diabetes mellitus, including coronary artery disease, cerebrovascular disease, and peripheral arterial disease. • Explain diabetic neuropathy and its clinical manifestations, including autonomic and peripheral neuropathy. • Describe diabetic foot complications, including ulcers, infections, and Charcot arthropathy. • Identify other complications of diabetes mellitus such as infections, gastroparesis, erectile dysfunction, and skin manifestations. • Outline screening recommendations for early detection of diabetic complications. • Explain preventive strategies to reduce the risk of diabetic complications, including glycaemic control and lifestyle modification. Emphasize the importance of patient education and regular follow-up in preventing long-term complications.			
		Hypoglycemic coma	• Define hypoglycemia and hypoglycemic coma and explain the normal physiology of glucose regulation and the	Interactive Lecture	1hr.	MCQs

			pathophysiological mechanisms leading to neuroglycopenia and coma. • Identify and classify the causes and risk factors of hypoglycemia, with particular emphasis on drug-induced hypoglycemia, missed meals, organ dysfunction, and vulnerable patient groups. • Recognize the clinical features of hypoglycemia, differentiating autonomic (adrenergic) symptoms from neuroglycopenic manifestations, and distinguish hypoglycemic coma from other causes of unconsciousness. • Demonstrate a systematic clinical approach to a patient with suspected hypoglycemic coma, including focused history, examination, bedside blood glucose testing, and relevant initial investigations. • Outline the principles of emergency management and prevention of hypoglycemic coma, including immediate resuscitative measures, pharmacological treatment, monitoring, and patient education to prevent recurrence.			
		Acute complications of hyperglycemia	• Explain the precipitating factors, diagnostic work up, and treatment of a patient with diabetic	Interactive Lecture	1hr.	MCQs

			ketoacidosis. • Explain the precipitating factors, diagnostic work up, and treatment of a patient with Hyperosmolar non-ketotic diabetic coma. • Explain the precipitating factors, diagnostic work up, and treatment of a patient with Lactic acidosis.			
		Posterior Pituitary Gland Syndrome of inappropriate antidiuretic hormone (SIADH)	• Discuss the functions of hormone Vasopressin secreted by the posterior pituitary gland. • Explain the etiology, clinical features, investigations, and treatment of Diabetes insipidus. • Explain the etiology, and pathogenesis of SIADH secretion.	Interactive Lecture	1hr.	MCQs
5	**Pediatric Medicine**	Management of Type 1 Diabetes Mellitus in Children	• 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	Interactive Lecture	1hr.	MCQs

			make the diagnosis and prevent coma or death • Plan investigations and management plan for a newly diagnosed and a known diabetic child • Enumerate the different types of insulins.			

Skill Lab.

Sr.#	Subject	Topic	Learning objectives	Teaching Strategies	Duration (Hour)	Assessment
1	**Pathology**	Glucose estimation	• Check glucose in urine • Check blood glucose in a given sample.	Practical Work	2 hr.	**OSPE**
2	**Pharmacology**	Diabetes Mellitus	Formulate the prescription writing for a patient with Diabetes Mellitus	Practical Work	2 hr.	**OSPE**
3	**Community Medicine**	Growth Chart (Anthropometric measures / Shakir`s tape)	• Identify the chart • Interpret different parts of the chart • Measure Head Circumference, height and weight of the child. • Plot the graph using the	Practical Work	2hrs	**OSPE**

			anthropometric measurements and interpret the nutritional status of the child			
Theme-4 Moon Face						
1	**Pharmacology**	Glucocorticoids	• Classify Glucocorticoids. • Describe the mechanism of action, pharmacological effects, clinical uses, and adverse effects of glucocorticoids. • Describe dexamethasone suppression test.	Interactive Lecture	1 hr.	MCQs

Sr.#	Subject	Topic	Learning objectives	Teaching Strategies	Duration (Hour)	Assessment
1		Glucocorticoid antagonists/synthesis inhibitors Aldosterone Antagonists	• Enlist Glucocorticoid antagonists/synthesis inhibitors. • Describe the mechanism of action, clinical uses and adverse effects of Mifepristone, Ketoconazole, Metyrapone and Aminoglutethimide. • Describe the mechanism of action, clinical uses, and adverse effects of Spironolactone (apart from being used as diuretic).	Interactive Lecture	1 hr.	MCQs
2	**Pathology**	and Cushing`s Syndrome	• Discuss the etiology of Hypercortisolism. • Explain the etiology, clinical features and diagnosis of Cushing`s	Interactive Lecture	1 hr.	MCQs

			syndrome.			
		Hyperaldosteronism and Adrenogenital Syndrome	• Explain the etiology, diagnosis and presentation of primary Hyperaldosteronism • Explain the etiology, clinical features and diagnosis of Adrenogenital syndrome	Interactive Lecture	1 hr.	MCQs
		Adrenal insufficiency	• Classify adrenal insufficiency in context of its etiology • Discuss clinical presentation and complications of adrenal insufficiency.	Interactive Lecture	1 hr.	MCQs
		Adrenal neoplasms	• Discuss the types of adrenal neoplasms. • Explain the morphology, and clinical features of adrenal neoplasms.	Interactive Lecture	1 hr.	MCQs
		Pheochromocytoma Multiple Endocrine	• Explain the morphology, and clinical features of Pheochromocytoma. • Classify Multiple	Interactive Lecture	1 hr.	MCQs

		Neoplasia (MEN)Syndrome	endocrine neoplasia syndrome. • Explain the morphology and clinical features of MEN			
3	**Medicine**	Hypercortisolism and Cushing`s Syndrome	• Explain the etiology, clinical features, diagnostic workup, and management of Hypercortisolism/ Cushing`s syndrome.	Interactive Lecture	1 hr.	MCQs
		Primary Hyperaldosteronism	• Explain the etiology, clinical features, diagnostic workup, and management of Primary Hyperaldosteronism.	Interactive Lecture	1 hr.	MCQs
		Adrenogenital Syndrome	• Explain the etiology, clinical features, diagnostic workup, and management of Adrenogenital syndrome.	Interactive Lecture	1 hr.	MCQs
		Adrenal Insufficiency Primary (Acute & Chronic) Secondary	• 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.	Interactive Lecture	1 hr.	MCQs

		Adrenal neoplasms	• Explain the types of adrenal tumors. • Discuss the clinical presentations, diagnostic. workup, and treatment of adrenal tumors	Interactive Lecture	1 hr.	MCQs
		Pheochromocytoma Gastro-entero-Pancreatic Neuroendocrine Tumors (GEP-NETs) including Carcinoid Tumors	• Explain the clinical features, investigations, management, and complications of Pheochromocytoma. • Explain the clinical features, investigations, management of GEP NETs/Carcinoid tumors.	Interactive Lecture	1 hr.	MCQs
4	**PRIME**	Counselling	Demonstrate patient education	Role play Hospital teaching	1 hr.	Continous formative

Theme-5: Infertility and pregnancy						
Sr.#	**Subject**	**Topic**	**Learning objectives**	**Teaching Strategies**	**Duration (Hour)**	**Assessment**
1	**Pharmacology**	Gonadotropins (FSH & LH) and Human Chorionic Gonadotropin Gonadotropin-Releasing Hormone and Analogues	• 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. • Describe the mechanism of action, clinical uses and adverse effects of Gonadotropin-releasing hormone and analogues (Gonadorelin and others).	Interactive Lecture	1hr.	MCQs
		Oxytocin	• Describe the mechanism of action, clinical uses, and adverse effects of Oxytocin.	Interactive Lecture	1hr.	MCQs
		Estrogen	• Classify Estrogens. • Describe the mechanism of action, organ system effects, clinical uses, adverse effects, and contraindications of Estrogen. • Describe different preparations of Estrogen.	Interactive Lecture	1hr.	MCQs

		Progestins	• Classify Progestins. • Describe the mechanism of action, organ system effects, clinical uses, adverse effects, and contraindications of Progestins.	Interactive Lecture	1hr.	MCQs
		Oral Contraceptives	• 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.	Interactive Lecture	1hr.	MCQs
		Parenteral & Implantable Contraceptives	• Describe the use of Parenteral (Medroxyprogesterone) and implantable (Norplant system) contraceptives.	Interactive Lecture	1hr.	MCQs
		Ovulation-Inducing Agent (Clomiphene) Mifepristone Danazol	• Describe the mechanism of action, clinical use, and adverse effects of Clomiphene. • Describe the mechanism of action, clinical uses, and adverse effects of Mifepristone. • Describe the mechanism of action, clinical uses,	Interactive Lecture	1hr.	MCQs

			and adverse effects of Danazol.			
		Androgens and Anabolic Steroids	• Enlist Androgens and anabolic steroids. • Describe the mechanism of action, clinical uses, and adverse effects of androgen preparations.	Interactive Lecture	1hr.	MCQs
		Antiandrogens	• 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.	Interactive lecture	1 hr.	MCQs
2	**Pathology**	Sexually Transmitted Diseases (STDs)	• Explain the types of STDs. • Explain the stages, morphology, clinical features, and complications of Syphilis. • Name the organisms causing Gonorrhea and its clinical features.	Interactive Lecture	1hr.	MCQs
		Polycystic Ovarian Disease	• Explain the etiology, risk factors, clinical features and morphology of Polycystic ovarian disease.	Interactive Lecture	1hr.	MCQs
		Prostatic Disorders	• Explain the etiology and morphology of Prostatitis. • Explain the gross and microscopic morphology and complications of BPH. • Explain the clinical features, types and staging of prostatic carcinoma.	Interactive Lecture	1hr.	MCQs

		Endometritis Uterine fibroids Endometriosis	• Explain the etiology and pathogenesis of endometritis. • Explain the etiology and morphology of uterine fibroids. • Explain the etiology, pathogenesis and morphology of endometriosis.	Interactive Lecture	1hr.	MCQs
		Endometrial Hyperplasia Endometrial Carcinoma	• Explain the etiology, pathogenesis, morphology of Endometrial hyperplasia and carcinoma.	Interactive Lecture	1hr.	MCQs
		Cervical Carcinoma	• Enlist different types of gynecological cancers • Explain the gross and microscopic morphology, clinical features and staging of Cervical carcinoma..	Interactive Lecture	1hr.	MCQs
		Tumors of the Ovary	• Classify benign and malignant tumors of the ovary • Explain the gross and microscopic morphology, . clinical features, staging and complications of ovarian carcinoma.	Interactive Lecture	1hr.	MCQs
		Testicular Tumors	• Classify testicular tumors. • Explain the gross	Interactive Lecture	1hr.	MCQs

			and microscopic morphology of benign and malignant testicular tumors. • Discuss the staging and prognosis of testicular malignant tumors.			
3	**Forensic Medicine**	Impotence and Sterility	• Define impotence and sterility and their causes. • Differentiate between impotence and sterility • Give their Medicolegal Importance. • Describe the steps of examination of a case of impotence.	Interactive Lecture	1 hrs	MCQs
		Sterilization	• • Define sterilization and give its Medicolegal importance. • Describe legal formalities before sterilization.	Interactive lecture	1 hr	MCQs
		Artificial Insemination	• Define Artificial insemination and its types • Describe its Medicolegal aspects. • Define Test tube baby	Interactive lecture	1 hr	MCQs

		Surrogate Motherhood	• Define Surrogate motherhood and give its Medicolegal importance .			
		Legitimacy and Dissolution of marriage	• Define legitimacy and its M/L aspects • Define illegitimate child. • Define superfetation and superfecundation. • Enlist M/L aspects of adoption. • Enlist legal grounds for dissolution of marriage.			
		Pregnancy	• Discuss presumptive, probable and conclusive signs of pregnancy. • Describe signs of pregnancy in dead. • Discuss Medico legal aspects of pregnancy.	Interactive lecture	1 hr	MCQs
		Delivery	• Define delivery. • Describe signs of recent delivery in living and dead. • Describe signs of remote delivery in living and dead. • Discuss Medicolegal aspects of delivery.	Interactive lecture	1 hr	MCQs
		Abortion(1)	• Define abortion, its types and M/L aspects. • Discuss methods of criminal abortion	Interactive Lecture	1 hr	MCQs

			and their complications.			
		Abortion(2)	• Discuss steps of examination of a case of criminal abortion • Define and differentiate between Isqat e haml and Isqat e Janin as per PPC.	Interactive Lecture	1 hr	MCQs
		Natural sexual offences: Rape and Incest (1)	• Discuss Hudood Ordinance. • Discuss Women Protection Act	Interactive Lecture	1 hr	MCQs
		Natural sexual offences: Rape and Incest (2)	• Define Rape, Zina. Zina bil jabr and fornication • Compare and contrast Rape, Zina and Fornication.	Interactive Lecture	1 hr	MCQs
		Natural sexual offences: Rape and Incest (3)	• Discuss examination of a rape victim and accused. • Define Incest.	Interactive Lecture	1 hr	MCQs
		Unnatural sexual offences	• Define sodomy. • Discuss steps of examination of active and passive agent in a case of sodomy. • Define Bestiality, buccal coitus and tribadism.	Interactive Lecture	1 hr	MCQs

		Sexual perversions	• Enlist and define various sexual perversions.	Interactive lecture	1hr	MCQs
4	**Community Medicine**	Reproductive health	• Define reproductive health. • Describe components of reproductive health. • Define safe motherhood. • Discuss pillars of safe motherhood. • Describe 3 delay model for safe motherhood.	SGD	2hr.	MCQs
		IMNCI (Integrated Management of neonatal and childhood illness)	• Define IMNCI & IMCI. • Describe components of IMNCI. • Enumerate principles of IMNCI.	Interactive Lecture	1hr.	MCQs
		Breast Feeding	• Discuss advantages of breast feeding. • Discuss artificial feeding. • Discuss baby friendly hospital initiative. • Discuss guidelines on infant and child feeding.	Interactive Lecture	1hr.	MCQs

		Screening & Prevention of Reproductive Cancers	• Describe epidemiology and risk factors for reproductive cancers in males and females.
			• Discuss different methods of screening for reproductive cancers in females
			  ○ Breast Cancer
			  ○ Ovarian Cancer
			  ○ Cervical Cancer
			• Discuss different methods of screening for prostate cancer in men.
			• Discuss levels of prevention of reproductive cancers in males and females.
				Interactive Lecture	1hr.	MCQs

		Vaccination and Immunization (EPI Schedule)	• Enlist the vaccines included in the national EPI schedule. • State the recommended age for administration of each vaccine in the EPI schedule • Describe the route , dose and site of administration of each vaccine • Identify any contraindications for any of the vaccines • Explain cold chain requirements and vaccine storage conditions. • Discuss the importance of VVM.	Interactive Lecture	1 hr.	MCQs

5	**Medicine**	Hypergonadotropic Hypogonadism	• Distinguish between hyper- and hypogonadotrophic hypogonadism using clinical and laboratory data. • Apply knowledge of genetics and endocrinology to specific syndromes (Turner, Klinefelter). • Discuss basic management plans including hormonal therapy and multidisciplinary care. • Counsel patients and families regarding the diagnosis, prognosis, and genetic implications.	Interactive Lecture	1 hr	MCQs
6	**Family Medicine**	Contraception	• 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	Interactive Lecture	1 hr	MCQs
7	**Gynecology**	Vaginal Discharge and sexually transmitted diseases (STDs)	• Describe the risk factors, etiology and clinical features. • Diagnostic workup and management of vaginal discharge • Outline the prevention of STDs	Interactive Lecture	1 hr.	MCQs

		Female Subfertility	• Define subfertility. • Describe the etiology including ovulatory, tubal and uterine factors. • Enlist investigations of female infertility. • Discuss management of female infertility. • Discuss assisted reproductive techniques.	Interactive Lecture	1 hr.	MCQs
		Primary amenorrhea	• Define primary amenorrhea and discuss stages of sexual development. • Discuss the anatomical, hormonal and genetic causes of primary amenorrhea. • Outline management plan of common causes.	Interactive Lecture	1 hr.	MCQs
		Menopause	• Define menopause. • Describe physiological and non-physiological menopause • Explain the clinical effects of menopause on women. Outline management by hormonal and non-hormonal therapy. • Enumerate contraindications of	Interactive Lecture	1 hr.	MCQs

			hormone replacement therapy.			
		Miscarriages	• Define miscarriage and recurrent miscarriages. • Discuss the types of miscarriages and clinical presentation. • Advantages and disadvantages of different management options. • Enlist causes of recurrent miscarriages.	Interactive Lecture	1 hr.	MCQs
		Abnormal Uterine Bleeding (AUB)	• Define AUB. • Discuss causes according to PALM-COEIN classification. • Justify investigations. • Describe indications of endometrial biopsy. • Outline medical and surgical management of heavy menstrual bleeding.	Interactive Lecture	1 hr.	MCQs

		Uterine Fibroids	• Classify types of fibroid. • Describe clinical presentation. • Discuss diagnostic modalities. • Discuss management options. • Discuss complications and differential diagnosis.	Interactive Lecture	1 hr.	MCQs
		Ectopic Pregnancy	• Define ectopic pregnancy. • Discuss etiology. • Discuss clinical presentation . • Describe protocol of medical and surgical management.	Interactive Lecture	1 hr.	MCQs
		Endometriosis	• Define endometriosis. • Explain clinical features and specific investigations • Discuss management of endometriosis.	Interactive Lecture	1 hr.	MCQs

		Gestational Trophoblastic Diseases (GTDs)	• Classify GTDs • Explain the pathogenesis and clinical features. • Discuss the management and complications of Hydatiform Mole.	Interactive Lecture	1 hr.	MCQs
		Benign Ovarian Tumors	• Classify benign ovarian tumors. • Discuss different clinical presentations • Outline the investigations. • Discuss management of benign ovarian tumors.	Interactive Lecture	1 hr.	MCQs
		Uterovaginal Prolapse	• Describe 3 levels of supporting ligaments. • Classify stages and types of prolapse. • Describe clinical presentation of prolapse. • Discuss management options.	Interactive Lecture	1 hr.	MCQs

		Malignant Ovarian tumors	• Classify malignant ovarian tumors. • Enumerate the risk factors • Describe clinical presentation and diagnostic investigations. • Outline management plan.	Interactive Lecture	1 hr.	MCQs
		Cervical intra Epithelial Neoplasia (CIN)	• Describe the pathophysiology of CIN.. • Discuss screening and diagnostic investigations • Compare ablative and excional methods. Explain different methods of primary prevention.	Interactive Lecture	1 hr.	MCQs
		Cervical Carcinoma	• Discuss clinical presentation. • Describe staging of C.A. • Outline the management according to stage.	Interactive Lecture	1 hr.	MCQs

		Endometrial Carcinoma	• Discuss classification and risk factors. • Discuss different clinical presentation and investigation. • Outline management options.	Interactive Lecture	1 hr.	MCQs
		Secondary Amenorrhea	• Define secondary amenorrhea. • Enlist the causes • Discuss etiology and management of PCOS.	Interactive Lecture	1 hr.	MCQs
8	**Urology**	Causes of male Infertility	• Discuss the causes of male infertility. • Explain the diagnostic workup of a male infertility.	Interactive Lecture	1 hr.	MCQs
		Cryptorchidism Hydrocele and Varicocele	• Define Cryptorchidism • Explain the etiology, complications, and management of Cryptorchidism • Explain the cause, clinical features, complications and surgical management	Interactive Lecture	1 hr.	MCQs

			of hydrocele and varicocele.			
		Benign prostatic Hyperplasia Carcinoma of Prostate	• Explain the etiology, clinical features, complications, and management of Benign prostatic Hyperplasia (BPH). • Explain the etiology, clinical features, complications, staging, management, and prognosis of carcinoma of the prostate.	Interactive lecture	1 hour	MCQ

Skill Lab

Sr. #	Subject	Topic	Learning objectives	Teaching Strategies	Duration (Hour)	Assessment
1	**Pathology**	Pap Smear	• Interpret a pap smear slide	Practical Work	2 hr.	OSPE
		Fibroids	• Identify the gross and microscopic features of uterine fibroids	Practical Work	2 hr.	OSPE

2	**Forensic Medicine**	Sexual Offences **(1)**	• Examination of a rape victim and assailant and filling of proforma.	Practical Work	2 hr.	OSPE
		Sexual Offences **(2)**	• Examination of a sodomy victim and assailant.	Practical work	2 hr.	OSPE
		Criminal abortion	• Examination of a case of criminal abortion.	Practical Work	2 hr.	OSPE
3	**Community Medicine**	EPI Vaccines	• Identify the vaccine vial • Identify the different types of syringes used for various vaccines • Discuss the viability of vaccine using VVM • Identify the ILR (Ice Lined Refrigerator) used for storage of vaccines and discuss placement of heat vs cold sensitive vaccines within the ILR.	Practical Work	2 hr.	OSPE
		Contraceptive Devices	• Identify the different contraception devices. • Explain their indications and contraindications. • Describe Cafeteria choice and Gather Approach in Family Planning • Discuss Target couple vs eligible couple	Practical Work	2hrs	OSPE

Theme-6: Breast Lump

Sr.#	Subject	Topic	Learning objectives	Teaching Strategies	Duration (Hour)	Assessment
1	**Pharmacology**	Selective Estrogen Receptor Modulators (SERMs) and others.	• Enlist Selective Estrogen Receptor Modulators (SERMs). • Describe the mechanism of action and clinical uses of Tamoxifen.	Interactive Lecture	1hr.	MCQs
2	**Pathology**	Benign epithelial lesions	• Explain the fibrocystic changes in breast including cysts, fibrosis, epithelial hyperplasia and adenosis. • Explain the morphology of Fibro-adenoma of the breast. • Explain the morphology of papilloma of the breast. • Discuss the causes and morphology of Gynecomastia • .	SGD	1.5hr.	MCQs
			• Explain the		1hr.	MCQs

		Carcinoma of the breast(I)	risk factors, etiopathogenesis of carcinomas of the breast.	Interactive Lecture		
		Carcinoma of the breast (II)	• Explain the clinical features of carcinomas of the breast.	Interactive Lecture	1hr.	MCQs
		Carcinoma of the breast (III)	• Explain the staging, and complications of carcinomas of the breast	Interactive Lecture	1hr.	MCQs
3	**Surgery**	Investigations of Breast Diseases. Benign Breast Diseases.	• Justify the investigations of a patient with a breast lesion. • Classify benign breast diseases.	Interactive Lecture	1hr.	MCQs
		Malignant Breast Diseases (1)	• 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.	Interactive Lecture	1hr.	MCQs

		Malignant Breast Diseases(2)	• 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.	Interactive Lecture	1hr.	MCQs
4	**PRIME**	Dealing with vulnerable groups	Dealing with vulnerable groups such as children and elders.	Group discussion /role play	1 hr	Continuous formative

Skill Lab

Sr.#	Subject	Topic	Learning objectives	Teaching Strategies	Duration (Hour)	Assessment
1	**Pathology**	Carcinoma Breast	• Identify the microscopic features of carcinoma of the breast	Practical Work	2 hr.	OSPE

Learning Resources

Sr. No	Subjects	Textbooks
1.	**Anatomy**	● K.L. Moore, Clinically Oriented Anatomy ● KeithL. Moore. The Developing Human ● Langman's Medical Embryology
2.	**Community Medicine**	● Community Medicine by Parikh ● Community Medicine by M Ilyas ● Basic Statistics for the Health Sciences by Jan W Kuzma
3.	**Pathology**	● Robbins & Cotran, Pathologic Basis of Disease,10 th edition. ● Rapid Review Pathology,4 th edition by Edward F. Goljan MD
4.	**Gynae**	● Gynaecology by Ten Teachers, Louise Kenny, Helen Bickerstaff 21st edition ● Hacker & Moore's Essentials of Obstetrics and Gynecology ● Textbook of Gynecology, Rashid Latif Khan ● Fundamentals of Gynaecology, Dr Arshad Chohan
5.	**Physiology**	● Textbook Of Medical Physiology by Guyton And Hall ● Ganong's Review of Medical Physiology ● Human Physiology by Lauralee Sherwood ● Berne & Levy Physiology ● Best & Taylor Physiological Basis of Medical Practice
6.	**Pediatric Medicine**	● Basis of Pediatrics (8th Edition Pervez Akbar)
7.	**Medicine and Family Medicine**	● DAVIDSON'S PRINCIPLES AND PRACTICE OF MEDICINE 24ED ● Kumar and Clark's Clinical Medicine 11th Edition ● sMcleads Clinical examination 14th edition
8.	**Pharmacology**	● Lippincot and Ketzung
9.	**Forensic medicine**	● Principles and rectus of forensic medicine 2nd edition by naseeb R awan ● Textbook of medical jurisprudence by Parekh 8th edition

10.	**Surgery**	● Bailey & love s short practice of surgery 28th edition ● Essential Surgical practice by Alfred cushaieri B hanna 5th edition

Assessment Plan – 4th Year MBBS

The 4th Year will be assessed in 5 blocks.

1. **Block-J** (Neurosciences-II module) will be assessed in paper-J.
2. **Block-K** (GIT and Hepatobiliary-II modules) will be assessed in paper-K.
3. **Block-L** (Renal-II,Endocrine and reproduction modules) will be assessed in paper-L.
4. **Block-M-1** (ENT module) will be assessed in paper M-1.
5. **Block-M-2** (Eye module) will be assessed in paper M-2.
6. Each **written paper** consists of 120 MCQs except for ENT and Eye papers which includes 90 MCQs each.
7. **Internal assessment** will be added to final marks in FMU as shown in below table.
8. In **OSPE** For ENT (M-1 module) and Eye (M-2 module), the marks allocated for each OSCE station will be 5, while the rest of the modules are allotted 6 marks per OSCE station.
9. Practical assessment will be in the form of OSPE/OSCE which will also include embedded viva stations.

Paper-L (Renal-II and Endocrine and Reproduction II modules)

Table – 1: MCQs

Subject	Renal-II Module	Endocrine and Reproduction Module	Total MCQs
Community medicine	11	6	17
Pharmacology	02	07	09
Pathology	11	12	23
Forensic medicine	01	06	07
Surgery	00	03	03
Urology	06	00	06
Gynecology	01	39	40
Medicine	05	05	10
Pediatric Medicine	02	01	03
Family medicine	01	01	02
Total	**40**	**80**	**120**

Table – 2: OSPE

Table-6: OSPE/OSCE			
Subject	**Viva stations**	**OSPE/OSCE stations**	**Total**
Pharmacology	2	1	3
Pathology	2	2	4
Forensic medicine	2	1	3
Community medicine	2	3	7

Research viva	2**	x	
Gynaecology	2	2	4
Medicine (Endocrinology/nephrology/rheumatology)	0	1	1
Total	11	11	22

Internal Assessment

Theory		
Sr. No	**Criteria**	**Numbers**
1	Attendance (>90%=3,80-89%=2,70-79%=1,<70%=0)	3
2	Creative work/assignments/Task	2
3	Continuous Assessment throughout block (Formative assessments, Viva Voce, departmental activities)	2
4	Block examination theory	3
5	Pre prof Examination of block	4
Total		**14**

OSPE		
Sr. No	**Criteria**	**Numbers**
1	Attendance (>90%=3,80-89%=2,70-79%=1,<70%=0)	3
2	Log Book/practical copy	4
3	Discipline, Responsibility and team work	1
4	Block examination OSPE	2
Total		**10**