

STUDY GUIDE

Block - IX

I. Cardiovascular - II

II. Respiratory - II

III. Community Medicine & Family Health - I

IV. Forensic Medicine & Toxicology - III

3rd Year MBBS

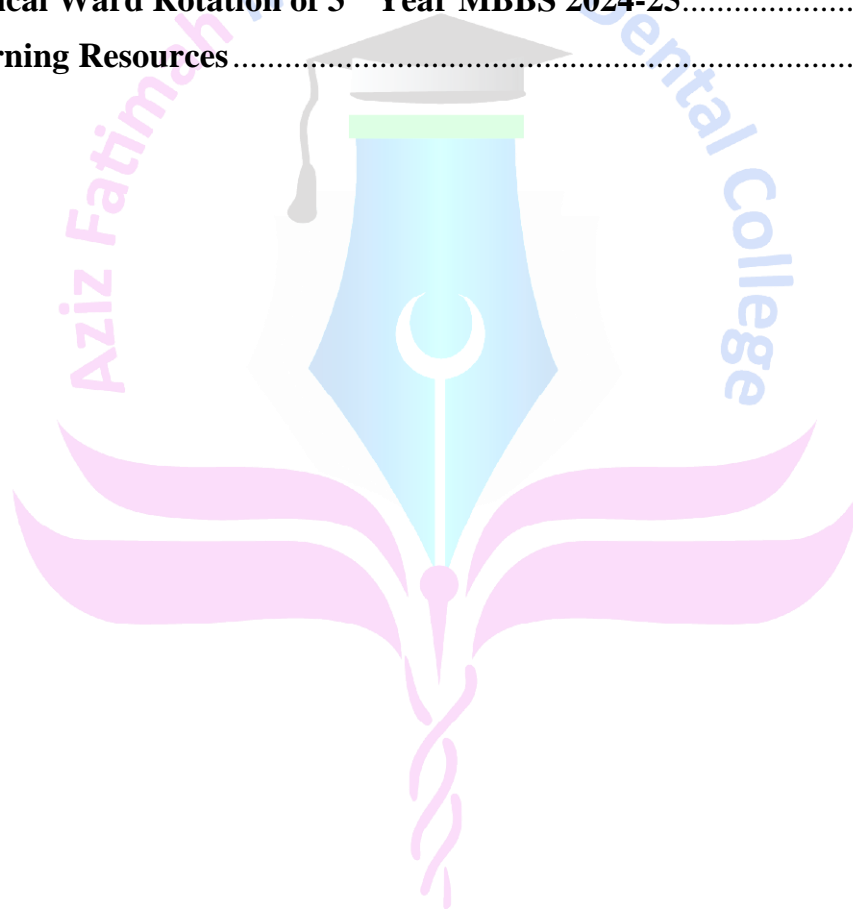


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Table of Contents

1. List of Abbreviations	4
2. Introduction to Study Guide	13
3. Block-9 Module Committee	15
4. Introduction of BLOCK IX	16
5. Cardiovascular-II.....	18
5.1 Module Rationale	18
5.2 Module Outcomes	19
5.3 Learning Objectives.....	20
5.3.1 Knowledge.....	20
5.3.2 Practical / Lab Work.....	32
5.3.3 Clinical Rotations	33
6. Respiratory-II.....	35
6.1 Module Rationale	35
6.2 Module Outcomes	36
6.3 Learning Objectives.....	37
6.3.1 Knowledge.....	37
6.3.2 Practical / Lab Work.....	50
6.3.3 Clinical Rotations / Community Healthcare	55
7. Community Medicine & Family Health-I	58
7.1 Module Rationale	58
7.2 Module Outcomes	59
7.3 Learning Objectives.....	60
7.3.1 Knowledge.....	60
7.3.2 Practical / Lab Work.....	66
7.3.3 Clinical Rotations / Community Healthcare	69
8. Forensic Medicine & Toxicology-III.....	77
8.1 Module Rationale	77
8.2 Module Outcomes	78
8.3 Learning Objectives.....	79
8.3.1 Knowledge.....	79
8.3.2 Practical / Lab Work.....	94
9. CFRC for Block-9	100

10.	PERL's for Block-9	101
11.	Teaching & Learning Methodologies	105
12.	Assessment Methodologies.....	106
13.	Assessment Policy (UHS)	108
14.	Exam Regulations by UHS	114
15.	Examination Rules AFMDC.....	117
16.	Internal Assessment Policy (UHS)	118
17.	Table of Specification (TOS)	120
18.	Frame work of Block 9 3 rd Year MBBS Timetable 2024-25	121
19.	Clinical Ward Rotation of 3 rd Year MBBS 2024-25.....	122
21.	Learning Resources.....	129



1. List of Abbreviations

<u>List of Abbreviations</u>	
Abbreviations	Subjects
A	Anatomy
ABCDE	Airway, Breathing, Circulation, Disability, Exposure
ABG	Arterial Blood Gas
ACS	Acute Coronary Syndromes
Ag	Aging
AKI	Acute Kidney Injury
ALT	Alanine Transaminase
AMI	Acute Myocardial Infarction
AMP	Adenosine Monophosphate
ANA	Antinuclear Antibody
ANCA	Antineutrophil Cytoplasmic Antibodies
ANS	Autonomic Nervous System
AO	Association of Osteosynthesis
APTT	Activated Partial Thromboplastin Clotting Time
ARDS	Acute Respiratory Distress Syndrome
ARVC	Arrhythmogenic Right Ventricular Cardiomyopathy
ASD	Atrial Septal Defect
AST	Aspartate Aminotransferase
ATLS	Advanced Trauma Life Support
Au	Autopsy
AUC	Area Under The Curve
AV	Atrioventricular
B	Biochemistry
BhS	Behavioral Sciences
BHU	Basic Health Unit
BSL	Biological Safety Level
C	Civics
C-FRC	Clinical-Foundation Rotation Clerkship

C. burnetii	Coxiella burnetii
C. neoformans	Cryptococcus neoformans
C. pneumoniae	Chlamydia pneumoniae
C. psittaci	Chlamydia psittaci
C. trachomatis	Chlamydia trachomatis
CA	Cancer
CABG	Coronary Artery Bypass Grafting
CAD	Coronary Artery Disease
CBC	Complete Blood Count
CCR5	Cysteine-Cysteine Chemokine Receptor 5
CD31	Cluster of Differentiation 31
CD34	Cluster of Differentiation 34
CD4	Clusters of Differentiation 4
CF	Cystic Fibrosis
CK	Creatine Kinase
CK	Creatine Kinase
CLED	Cystine Lactose Electrolyte Deficient
CLL	Chronic Lymphocytic Leukemia
CM	Community Medicine
CML	Chronic Myelogenous Leukemia
CMV	Cytomegalovirus
CNS	Central Nervous System
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CODIS	Combined DNA Index System
COPD	Chronic Obstructive Pulmonary Disease
COVID-19	Corona Virus Disease 2019
COX	Cyclooxygenase
CPR	Cardio Pulmonary Resuscitation
CR	Clinical Rotation
CRP	C- Reactive Protein

CSF	Cerebrospinal Fluid
CT	Computed Tomography
CT	Computerized Tomography
CV	Cardiovascular
CVA	Cerebral Vascular Accident
CVDs	Cardiovascular Diseases
CVS	Cardiovascular System
D. medinensis	Dracunculus Medinensis
DALY	Disability-Adjusted Life Year
DCIS	Ductal Carcinoma in situ
DCM	Dilated Cardiomyopathy
DCMLS	Dorsal Column Medial Lemniscus System
DLC	Differential Leukocyte Count
DMARDs	Disease-modifying antirheumatic drugs
DNA	Deoxy Ribonucleic Acid
DOTS	Directly Observed Treatment Short-course
DTP	Diphtheria, Tetanus, Pertussis
DVI	Disaster Victim Identification
DVT	Deep Vein Thrombosis
E. coli	Escherichia coli
ECF	Extra Cellular Fluid
ECG	Electrocardiography
ECG	Electrocardiogram
ECP	Emergency contraceptive pills
ED50	Median Effective Dose
EEG	Electroencephalogram
EIA	Enzyme Immunoassay
ELISA	Enzyme Linked Immunosorbent Assay
EnR	Endocrinology & Reproduction
ENT	Ear Nose Throat
EPI	Expanded Program on Immunization

ER	Emergency Room
F	Foundation
FAST	Focused Assessment with Sonography in Trauma
FEV1	Forced Expiratory Volume 1
FM	Family Medicine
For	Forensics Medicine
FPIA	Fluorescent Polarization Immunoassay
FS	Forensic Serology
FSc	Forensic Science
FVC	Forced Vital Capacity
GCS	Glasgow Coma Scale
GFR	Glomerular Filtration Rate
GIT	Gastrointestinal tract
GL-MS	Gas Liquid Mass Spectrometry
GLC	Gas Liquid Chromatography
GLP	Good Laboratory Practice
GMP	Guanosine Monophosphate
GO	Gynecology and Obstetrics
GP	General Practitioner
GPE	General Physical Examination
GTO	Golgi Tendon Organ
Gynae & Obs	Gynecology and Obstetrics
H & E	Hematoxylin and Eosin
H. influenzae	Haemophilus influenzae
H. pylori	Helicobacter pylori
HAI	Healthcare Associated Infections
HbC	Hemoglobin C
HbS	Sickle Hemoglobin
HbSC	Hemoglobin Sickle C Disease
HCL	Hydrochloric Acid
HCM	Hypertrophic Cardiomyopathy

HHV	Human Herpesvirus
HIT	Hematopoietic, Immunity and Transplant
HIV	Human Immunodeficiency Virus
HL	Hematopoietic & Lymphatic
HLA	Human Leukocyte Antigen
HMP	Hexose Monophosphate
HNSS	Head & Neck and Special Senses
HPLC	High Pressure Liquid Chromatography
ICF	Intra Cellular Fluid
ID	Infectious Diseases
IE	Infective Endocarditis
IL	Interleukin
ILD	Interstitial Lung Disease
IN	Inflammation
INR	International Normalized Ratio
INSTIs	Integrase Strand Transfer Inhibitors
IPV	Inactivated Poliovirus Vaccine
IUD	Intrauterine Device
IUGR	Intra Uterine Growth Restriction
JVP	Jugular Venous Pulse
L	Law
LD50	Median Lethal Dose
LDH	Lactate Dehydrogenase
LSD	Lysergic acid diethylamide
M	General Medicine
MALT	Mucosa Associated Lymphoid Tissue
MBBS	Bachelor of Medicine, Bachelor of Surgery
MCH	Mean corpuscular hemoglobin
MCHC	Mean Corpuscular Hemoglobin Concentration
MCV	Mean Corpuscular Volume
MHO 2001	Mental Health Ordinance 2001

MoA	Mechanism of action
MRI	Magnetic resonance imaging
MS	Musculoskeletal
MSD	Musculoskeletal disorders
MSDS	Minimum Service Delivery Standards
MSK	Musculoskeletal
N	Neoplasia
NEAA	Non-Essential Amino Acids
NK cells	Natural Killer Cells
NMJ	Neuro Muscular Junction
NNRTIs	Non-nucleoside Reverse Transcriptase Inhibitors
NRTIs	Nucleoside Reverse Transcriptase Inhibitors
NS	Neurosciences
NSAIDs	Non-steroidal Anti-Inflammatory Drugs
O	Ophthalmology
OA	Osteoarthritis
OPC	Organophosphate
OPV	Oral poliovirus vaccine
Or	Orientation
Orth	Orthopedic
P	Physiology
P. jiroveci	Pneumocystis jiroveci
Pa	Pathology
PAD	Peripheral Artery Disease
PAF	Platelet Activating Factor
PBL	Problem Based Learning
PCI	Percutaneous Coronary Intervention
PCR	Polymerase Chain Reaction
PDA	Patent Ductus Arteriosus
PDGF	Platelet Derived Growth Factor
Pe	Pediatrics

PEM	Protein Energy Malnutrition
PERLs	Professionalism, Ethics, Research, Leadership
PET	Positron Emission Tomography
Ph	Pharmacology
pH	potential Hydrogen
PI	Personal Identity
PID	Pelvic inflammatory disease
PIs	Protease inhibitors
PMC	Pakistan Medical Commission
PMDC	Pakistan Medical and Dental Council
PMI	Post-Mortem Interval
PNS	Peripheral Nervous System
PPD	Paraphenylenediamine
PPE	Personal Protective Equipment
Psy	Psychiatry
PT	Prothrombin Time
PVC	Premature Ventricular Contraction
PVD	Peripheral Vascular Diseases
QALY	Quality-Adjusted Life Year
QI	Quran and Islamiyat
R	Renal
Ra	Radiology
RA	Rheumatoid Arthritis
RBCs	Red Blood cells
RCM	Restrictive Cardiomyopathy
RDA	Recommended Dietary Allowance
Re	Respiratory
RF	Rheumatoid factor
RFLP	Restriction Fragment Length Polymorphism
Rh	Rheumatology
RHC	Rural Health Center

RIA	Radioimmunoassay
RMP	Resting Membrane Potential
RNA	Ribonucleic Acid
RTA	Road Traffic Accident
S	General Surgery
S. pneumonia	Streptococcus pneumoniae
SA	Sinoatrial
SCC	Squamous-cell carcinoma
Se	Sexology
Sec	Section
SIDS	Sudden Infant Death Syndrome
SLE	Systemic Lupus Erythematosus
SOP	Standard Operating Procedure
TB	Tuberculosis
TBI	Traumatic Brain Injury
TCA	Tricarboxylic acid cycle
TCBS	Thiosulphate Citrate Bile salts Sucrose
TD50	Median Toxic Dose
TGA	Transposition of the Great Arteries
Th	Thanatology
TLC	Thin Layer Chromatography
TNF	Tumor Necrotic Factor
TNM	Tumor, Node, Metastasis
TOF	Tetralogy of Fallot
Tox	Toxicology
Tr	Traumatology
TSI	Triple Sugar Iron
USG	Ultrasonography
UTI	Urinary Tract Infections
UV	Ultraviolet
VAP	Ventilator-Associated Pneumonia

Vd	Volume of Distribution
VEGF	Vascular Endothelial Growth Factor
VSD	Ventricular Septal Defect
W. bancroft	Wuchereria Bancroft
WBCs	White Blood Cells
WHO	World Health Organization
ZN Staining	Ziehl-Neelsen Staining



2. Introduction to Study Guide

The study guide serves several crucial purposes:

1. Communicating information on the organization and management of the module:

This aids students in identifying the appropriate point of contact in case they encounter any difficulties during the semester.

2. Defining the objectives expected to be achieved by the end of the module:

It outlines clear learning goals, ensuring that students understand what is expected of them academically.

3. Identifying the learning strategies employed to achieve module objectives:

These strategies may encompass various methods such as lectures, small group sessions, clinical skills practice, demonstrations, tutorials, and case-based learning.

4. Providing a list of learning resources:

Students are offered a comprehensive list of resources, including books, computer-assisted learning programs, web links, and journals. These resources empower students to maximize their learning potential.

5. Highlighting information on the contribution of continuous assessment and semester examinations:

This section emphasizes the significance of ongoing assessments and final exams in determining a student's overall performance in the module.

6. Including information on assessment methods:

Details about the various assessment methods employed to evaluate students' progress in achieving the objectives are outlined.

7. Focusing on examination policies, rules, and regulations:

This section clarifies the policies and regulations governing examinations, ensuring that students are well-informed about the rules they must adhere to during their assessments.

By providing students with this comprehensive guide, educational institutions aim to enhance their learning experience, facilitate effective academic management, and foster compliance with academic standards and regulations.



3. Block-9 Module Committee

BASIC HEALTH SCIENCES	CLINICAL SCIENCES
Anatomy: Prof. Dr. Quddus Ur Rehman	Medicine: Prof. Dr. Ghulam Abbas Sheikh
Physiology: Prof. Dr. Qamar Mehbob	Surgery: Prof. Dr. Asrar
Biochemistry: Prof. Dr. Shakeel Ahmad	Radiology: Asst. Prof. Dr. Shemona
Community Medicine: Prof. Dr. Humayun Suqrat	Gynecology: Prof. Dr. Nazia Musarrat
Pathology: Prof. Dr. Kashif Baig	
Pharmacology: Dr. Sarwat Jahan	
Behavioral Sciences: Dr. Yawar	

Block Coordinator	Dr Summaya
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Medical Educationist	Dr. Ayesha Sadiq (HOD DME)
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Principal AFMDC	Prof. Dr. Ghulam Abbas Sheikh
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4. Introduction of BLOCK IX

Block 9 of the MBBS curriculum is designed to integrate advanced knowledge and clinical applications in multiple disciplines, providing students with a comprehensive understanding of essential medical sciences. This block combines system-based learning with community-oriented and forensic approaches, enabling future physicians to develop both clinical competence and social responsibility.

Cardiovascular System II

This module focuses on advanced aspects of cardiovascular physiology, pathology, diagnostics, and management of common cardiac conditions. It strengthens students' ability to apply foundational knowledge to clinical scenarios involving hypertension, ischemic heart disease, heart failure, and arrhythmias.

Respiratory System II

The respiratory module emphasizes clinical disorders of the lungs and airways, including obstructive and restrictive lung diseases, infections, and malignancies. It equips students with skills in respiratory assessment, interpretation of investigations, and evidence-based management.

Community Medicine & Family Health I

This module introduces principles of preventive medicine, epidemiology, and family health. It aims to build students' understanding of health promotion, disease prevention, and the role of physicians in addressing public health challenges.

Forensic Medicine & Toxicology III

The forensic component highlights the medico-legal responsibilities of doctors, including toxicology, injury documentation, autopsy procedures, and legal ethics. It prepares students to contribute effectively in both clinical and legal domains of medical practice.



CARDIOVASCULAR-II

5. Cardiovascular-II

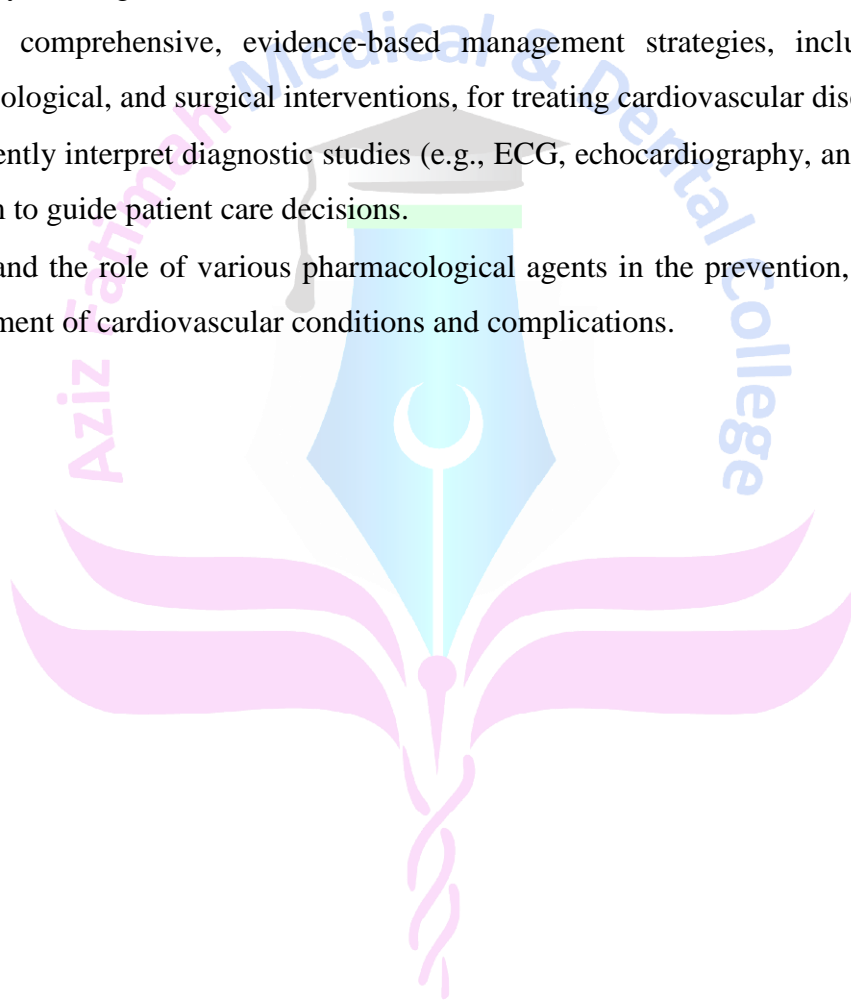
5.1 Module Rationale

The Cardiovascular System (CVS 2) Module is designed to provide a understanding of cardiovascular diseases (CVDs), which are a leading cause of global morbidity and mortality. This module is critical at this stage of medical education as it integrates foundational knowledge from basic sciences—such as anatomy, physiology, and pathology—with clinical application in general medicine, surgery, cardiology, pharmacology, and vascular surgery. The module emphasizes the pathophysiology, clinical manifestations, diagnostic approaches, and management strategies for common and critical cardiovascular conditions, including coronary artery disease, valvular heart disease, aneurysms, cardiomyopathies, congenital heart diseases, and vascular disorders.



5.2 Module Outcomes

- Explain the underlying pathophysiological mechanisms of cardiovascular diseases and correlate them with clinical signs and symptoms.
- Apply concepts from general medicine, surgery, cardiology, pharmacology, pathology, and vascular surgery to understand and manage cardiovascular diseases.
- Recognize and diagnose common and critical cardiovascular disorders using clinical features, physical examination, and diagnostic tools such as ECG, echocardiography, and laboratory investigations.
- Develop comprehensive, evidence-based management strategies, including medical, pharmacological, and surgical interventions, for treating cardiovascular diseases.
- Competently interpret diagnostic studies (e.g., ECG, echocardiography, and imaging) and use them to guide patient care decisions.
- Understand the role of various pharmacological agents in the prevention, treatment, and management of cardiovascular conditions and complications.



5.3 Learning Objectives

5.3.1 Knowledge

GENERAL MEDICINE

Code	Topic	Sub Topic	Learning Objectives
CV2-M-001	Integrate with Pathology	Rheumatic fever	Understand the Etiology and Pathogenesis of Rheumatic Fever
			Describe “Jones Criteria” and its significance in diagnosis of Rheumatic fever
			Identify the clinical features of acute Rheumatic fever
			Describe the Pathological Changes in Rheumatic Heart Disease
			Discuss the Diagnostic Approach to Rheumatic Fever
			Outline the Treatment and Prevention Strategies for Rheumatic Fever
CV2-M-002	Integrate with Pathology	Cor-pulmonale	Define cor-pulmonale and distinguish it from other causes of right heart failure.
	Integrate with Pathology		Classify cor-pulmonale into acute and chronic forms based on the onset and underlying causes (e.g., pulmonary embolism in acute cor-pulmonale vs. COPD in chronic cor-pulmonale).
			Explain the Pathophysiology of Cor-Pulmonale
			Identify the Etiological Factors of Cor-Pulmonale
			Identify the symptoms and signs of cor-pulmonale
			Describe the Diagnostic Approach to Cor-Pulmonale

			Outline the management plan for cor-pulmonale
CV2-M-003	Pathology integrates with medicine	Infective endocarditis	Define and Classify Infective Endocarditis (IE)
			Explain the Pathophysiology of Infective Endocarditis
			Identify the Common Etiological Agents of Infective Endocarditis
			Recognize the Clinical Features of Infective Endocarditis
			Discuss the Diagnostic Approach to Infective Endocarditis
			Explain the Complications of Infective Endocarditis
			Outline the Management and Treatment of Infective Endocarditis
			Describe the Prevention Strategies for Infective Endocarditis
CV2-M-004	Pathology integrates with medicine	Pericarditis	Define and Classify Pericarditis
	Pathology		Describe the Etiology of Pericarditis
			Explain the Pathophysiology of Pericarditis
			Recognize the Clinical Features of Acute Pericarditis
			Discuss the Diagnostic Approaches to Pericarditis
			Explain the Complications of Pericarditis:
			Outline the Management plan of Acute Pericarditis
			Discuss Prevention and Prognosis of Pericarditis

PHARMACOLOGY

Code	Topic	Sub Topic	Learning Objectives
CV2-Ph-001	Pharmacology	Anti-hypertensive	<ol style="list-style-type: none"> 1. Classify antihypertensive drugs including vasodilators, calcium channel blockers, drugs acting on RAAS, central sympatholytic drugs and diuretics. 2. Describe their mechanisms of action, clinical uses, adverse effects, drug-interactions, and contraindications 3. Identify the compensatory responses to antihypertensive drugs. 4. Give an account of pharmacological considerations taken in hypertensive emergencies, malignant hypertension, IHDs, cardiac failure, 5. cardiomyopathies, coarctation of aorta, diabetes mellitus, chronic renal diseases, Cerebrovascular 6. Disease, Dementia, and pregnancy
CV2-Ph-002		Ischemic Heart Diseases	<ol style="list-style-type: none"> 1. Explain strategies used in pharmacological treatment of angina. 2. Classify anti-anginal drugs and describe the mechanism of action, uses, adverse effects and interactions of nitrates and nitrites, Beta Blockers, and Calcium Channel Blockers. 3. Explain the role of Fatty Acid

			<p>Oxidation Inhibitors in the treatment of Angina.</p> <p>4. How the Coronary Steal Phenomenon is addressed?</p>
CV2-Ph-003		Cardiac Arrhythmias	<p>1. Classify drugs used in cardiac arrhythmias; describe their mechanism of action, uses, adverse effects and drug interactions.</p> <p>2. Explain general strategies used in pharmacological treatment of cardiac arrhythmias.</p>
CV2-Ph-004		Cardiac Failure.	<p>1. Classify drugs used in cardiac failure and describe their mechanism of action, pharmacological effects, uses, adverse effects, interactions and contraindications.</p> <p>2. Describe the cardiovascular effects of Dopamine, Dobutamine, Phosphodiesterase Enzyme Inhibitors, ACE Inhibitors and ARBs, Beta Blockers, directly acting vasodilators in Cardiac Failure.</p> <p>3. Role of Diuretics, Renin–Angiotensin–Aldosterone System Inhibitors, Beta-blockers, Digitalis glycosides, Nitrates and Hydralazine, Ivabradine and their combination; Anticoagulation, Antiarrhythmic therapy, and Statin, etc.</p>
CV2-Ph-		Anti-	<p>1. Classify Anti-Hyperlipidemia Drugs</p>

005		Hyperlipidemia c / Anti- Dyslipidemias	<p>2. Describe their Mechanism of Action, Uses, Adverse Effects and Drug Interactions</p> <p>3. Enlist combination therapies for treatment of hyperlipidemias</p>
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CARDIOLOGY

Code	Topic	Sub Topic	Learning Objectives
CV2-M-005	Integrate with pathology	Cardiomyopathies	Define cardiomyopathies as diseases of the heart muscle that affect its structure and function.
			Classify cardiomyopathies into the major subtypes <ol style="list-style-type: none"> 1. Dilated cardiomyopathy (DCM) 2. Hypertrophic cardiomyopathy (HCM) 3. Restrictive cardiomyopathy (RCM) 4. Arrhythmogenic right ventricular cardiomyopathy (ARVC) 5. Unclassified cardiomyopathies (e.g., left ventricular non-compaction)
			Explain the underlying Pathophysiology of Different Cardiomyopathies
			Recognize the Clinical Features of Cardiomyopathies
			Describe the role of echocardiography in diagnosing cardiomyopathies by assessing heart structure, wall thickness, chamber size, and ejection

			fraction.
			Highlight the use of ECG in detecting arrhythmias and conduction abnormalities associated with specific cardiomyopathies.
			Discuss the role of cardiac MRI in identifying myocardial fibrosis, particularly in hypertrophic and Arrhythmogenic cardiomyopathies.
			Explain the importance of genetic testing in familial cardiomyopathies, especially HCM and ARVC, for risk assessment and family screening.
			Understand the Complications of Cardiomyopathies:
			Outline the Management of Cardiomyopathies
			Describe the Genetic and Preventive Aspects of Cardiomyopathies:
CV2-M-006	Integrate with pathology	Congestive Cardiac Failure	Define and Classify Congestive Cardiac Failure
			Understand the Epidemiology and Risk Factors of Heart Failure
			Explain the Pathophysiology of Congestive Cardiac Failure
			Recognize the Clinical Features of Congestive Cardiac Failure
			Discuss the Diagnostic Approach to Congestive Cardiac Failure
			Differentiate Between Acute and Chronic Heart Failure
			Explain the Complications of Congestive Cardiac Failure

			Outline the non-pharmacological Failure
			Discuss strategies to prevent the development or progression of heart failure
			Understand the role of prognostic factors in heart failure
CV2-M-007	Integrate with pathology	Coronary artery disease	Define coronary artery disease
			Differentiate between stable angina, unstable angina, myocardial infarction (MI), and acute coronary syndrome (ACS).
			Discuss the modifiable and non-modifiable risk factors for CAD
			Describe how CAD can lead to myocardial ischemia, affecting oxygen supply to the heart muscle, and the consequences of plaque rupture leading to thrombus formation and acute coronary syndromes.
			Differentiate between stable angina (caused by fixed plaque) and acute coronary syndromes (caused by plaque rupture and thrombosis).
			Recognize the Clinical Features of Coronary Artery Disease
			Discuss the Diagnostic Approach to Coronary Artery Disease:
			Enlist the complications of CAD
			Discuss the management plan of stable CAD
			Discuss the role of revascularization techniques in stable CAD, including

			percutaneous coronary intervention (PCI) and coronary artery bypass grafting (CABG) in selected patients.
			Outline the Management of Acute Coronary Syndromes (ACS)
CV2-M-008	Integrate with pathology	Valvular heart diseases	Define Valvular Heart Disease
			Differentiate between stenosis (narrowing of valve orifice) and regurgitation (incompetence or leakage of valve).
			Understand the Epidemiology and Etiology of Valvular Heart Disease
			Explain the Pathophysiology of Common Valvular Lesions
			Discuss the management plan for valvular heart diseases
CV2-M-009	Integrate with pathology	Congenital heart diseases	Define congenital heart disease as structural or functional defects of the heart and great vessels present at birth.
	Integrate with Pead's		Classify Congenital Heart Diseases into: <ol style="list-style-type: none"> 1. Cyanotic congenital heart diseases (e.g., Tetralogy of Fallot, Transposition of the Great Arteries). 2. Cyanotic congenital heart diseases (e.g., Atrial Septal Defect, Ventricular Septal)
			Understand the Epidemiology and Risk Factors of Congenital Heart Disease.
	Integrate with pathology		Explain the Pathophysiology of Common Congenital Heart Lesions

		(ASD, VSD, PDA, TOF, TGA)
		Recognize the Clinical Features of Congenital Heart Disease.
		Outline the Diagnostic Approach to Congenital Heart Disease.
		Explain the Complications of Congenital Heart Disease
		Discuss the Management of Common Congenital Heart Diseases.

PATHOLOGY

Code	Topic	Sub Topic	Learning Objectives
CV2-Pa-001	Integrate with biochemistry	Aneurysms	Define aneurysm and differentiate between true and false aneurysms.
			Classify aneurysms based on their morphology (saccular, fusiform) and etiology (atherosclerotic, mycotic, and congenital).
			Understand the underlying mechanisms leading to aneurysm formation, including vessel wall weakening, genetic factors (e.g., Marfan syndrome, Ehlers-Danlos syndrome), and role of atherosclerosis.
			Identify the common sites where aneurysms form (e.g., aortic aneurysms, cerebral aneurysms, popliteal aneurysms) and explain why certain areas are more prone to aneurysm development.

			<p>Discuss the clinical signs and symptoms of Aneurysms depending on their location (e.g., abdominal aortic aneurysm, thoracic aortic aneurysm) and size.</p>
			<p>Correlate the presentation with possible Complications like rupture, dissection, or compression of adjacent structures.</p>
			<p>List the common diagnostic modalities used in identifying aneurysms (e.g., ultrasound, CT angiography, MRI).</p>
			<p>Describe the complications of aneurysm</p>
			<p>Discuss the management of aneurysm</p>
CV2-Pa-002	Integrate with biochemistry	Vascular tumors	<p>Define vascular tumors</p>
			<p>Classify vascular tumors</p>
			<p>Understand the underlying mechanisms involved in the development of vascular tumors, including genetic mutations, environmental factors (e.g., radiation, exposure to chemicals), and infections (e.g., HHV-8 in Kaposi sarcoma).</p>
			<p>Discuss the role of angiogenesis and endothelial cell Proliferation in tumor formation.</p>
			<p>Identify the characteristic clinical presentations of common vascular tumors (e.g., skin lesions in hemangiomas, liver involvement in</p>

			<p>cavernous hemangiomas, purple plaques in Kaposi sarcoma).</p> <p>Correlate the size, location, and aggressiveness of the tumor with its clinical manifestations.</p> <p>Discuss the diagnostic techniques used to detect and evaluate vascular tumors, including biopsy, histopathology (e.g., Doppler ultrasound, MRI), and immunohistochemically markers (e.g., CD31, CD34, VEGF).</p>
CV2-Pa-003	Integrate with histology	Cardiac tumors	<p>Describe the histological differences between various vascular tumors, emphasizing the appearance of endothelial cells, vascular channels, and mitotic activity</p> <p>Define cardiac tumors and differentiate between primary and secondary (metastatic) cardiac tumors.</p> <p>Classify primary cardiac tumors into benign (e.g., myxoma, rhabdomyoma, fibroma) and malignant (e.g., angiosarcoma, rhabdomyosarcoma).</p> <p>Discuss the possible genetic and molecular mechanisms involved in the development of cardiac tumors, including familial syndromes associated with cardiac tumors (e.g., Carney complex, tuberous sclerosis).</p>

			Describe how cardiac tumors can disrupt normal Cardiac function through obstruction, embolization, or invasion of adjacent structures.
			Identify the clinical presentations of cardiac tumors based on their location and size, including obstructive symptoms (e.g., dyspnea, syncope), embolic phenomena (e.g., stroke, systemic embolism), and constitutional symptoms (e.g., fever, weight loss).
			Describe the key diagnostic tools for identifying cardiac tumors, including echocardiography (trans esophageal and transthoracic), MRI, CT scan, and histopathological examination.
	Integrate with histology		Explain how histopathological analysis helps in distinguishing between benign and malignant cardiac tumors.
	Integrate with surgery		Outline the Principles of Management for Cardiac Tumors

GENERAL SURGERY/VASCULAR SURGERY

Code	Topic	Sub Topic	Learning Objectives
CV2-S-001	Integrate with pathology	Peripheral Vascular Diseases (PVD)	Discuss the Pathophysiology of Peripheral Vascular Diseases
			Identify key risk factors for peripheral vascular diseases
			Differentiate between the types of PVD, such as peripheral artery disease (PAD)

			and venous insufficiency.
			Discuss the role of embolism and thrombosis in the etiology of acute limb ischemia
			Describe the signs and symptoms of peripheral vascular diseases
			Enlist the investigations required to diagnose peripheral vascular disease
			Discuss the role of medical treatment and surgical interventions for management of peripheral vascular disease
			Describe the complications of untreated peripheral vascular diseases
			Differentiate between acute and chronic limb ischemia
			Classify different types of gangrene
			What are different dysfunctions of venous system?
			Discuss the etiology and pathophysiology of varicose veins and venous ulcers

5.3.2 Practical / Lab Work

PHARMACOLOGY

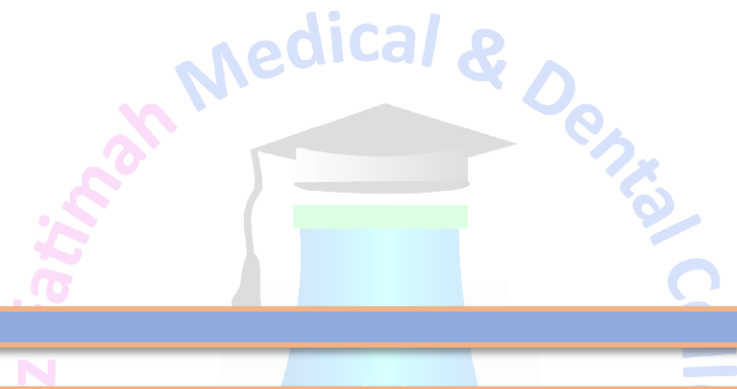
Code	Topic	Sub Topic	Learning Objectives
CV2-Ph-006	Pharmacology	Cardiovascular System	<ol style="list-style-type: none"> 1. Analysis and interpretation of Drugs (Acetylcholine, Atropine Adrenaline, Propranolol) on animal through online videos / simulations / graphs / practical performance. 2. Analysis and interpretation of

			different Concentrations of Acetylcholine on Frog's heart through online videos / simulations / graphs / practical performance
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5.3.3 Clinical Rotations

CARDIOLOGY AND SURGERY

Code	Topic	Sub Topic	Learning Objectives
CV2-M-009	Medicine	History taking	Take history specific to CVS
		GPE	Perform GPE relevant to CVS to observe signs of cyanosis, pallor, edema, hyperlipidemia and clubbing
			Palpate peripheral pulses, observe signs of raised JVP
			Measure blood pressure
CV2-M-010	Cardiology	CVS examination	Perform CVS examination on a patient
CV2-M-011		ECG	Interpret changes in ECG and correlate them with clinical conditions
CV2-S-002	Surgery	Examination of peripheral vascular system	Perform examination of an ischemic limb



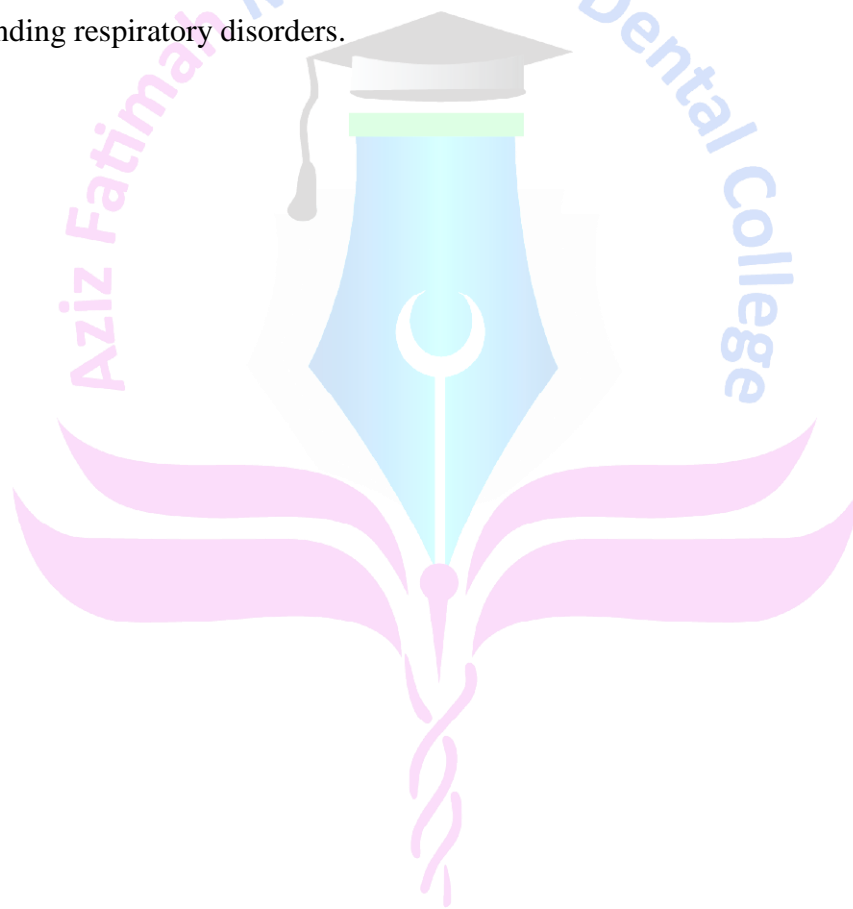
RESPIRATORY-II

6. Respiratory-II

6.1 Module Rationale

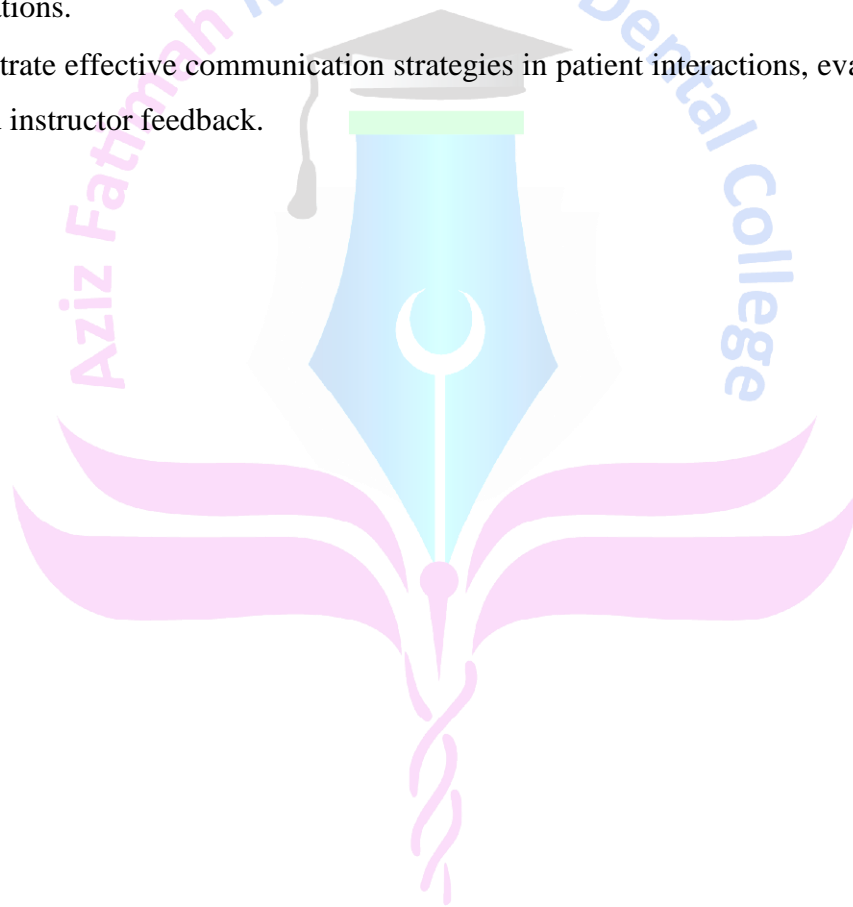
The curriculum for respiratory medicine and related fields is designed to equip students with essential knowledge and skills in managing thoracic trauma, respiratory complications, and conditions affecting respiration.

Demonstrate the qualities of compassion, honesty, and integrity in interactions with patients, families, communities, and fellow medical professionals. Exhibit a professional demeanor, foster a team-oriented spirit, and employ effective communication skills by actively participating in collaborative problem-solving, particularly in small group exercises focused on understanding respiratory disorders.



6.2 Module Outcomes

- Integrate foundational concepts to address clinical respiratory issues.
- Interpret common respiratory symptoms with accuracy in assessments.
- Outline management plans for prevalent respiratory diseases during case discussions.
- Utilize a problem-solving approach to accurately diagnose respiratory emergencies in simulated scenarios.
- Demonstrate understanding of respiratory tract malignancies and referral criteria by the end of the module.
- Identify the morphological features of common respiratory tract diseases in practical examinations.
- Demonstrate effective communication strategies in patient interactions, evaluated through peer and instructor feedback.



6.3 Learning Objectives

6.3.1 Knowledge

PATHOLOGY

Code	Topic	Sub Topic	Learning Objectives
Re2-Pa-001		Hyper-sensitivity	Describe hypersensitivity reaction 1 with clinical
		Reaction (HSR) Type II	examples Describe immune mechanism involved in HSR-I
Re2-Pa-002		Bronchial asthma	Define asthma
			Classify asthma
			Discuss pathogenesis of atopic and non - atopic asthma
Re2-Pa-003	Pathology	Chronic bronchitis	Discuss pathogenesis of atopic and non - atopic asthma.
			Define chronic bronchitis
			Describe the pathogenesis of chronic bronchitis
			Discuss the pathogenesis of bronchiectasis.
			Describe gross and microscopic morphological features of bronchitis
Re2-Pa-004		Emphysema	Describe gross and microscopic features of Bronchiectasis.
			Define emphysema
			Classify types of emphysema
Re2-Pa-005		Restrictive Lung Diseases	Describe protease-ant protease imbalance hypothesis for development of emphysema
			Differentiate between obstructive and restrictive pulmonary diseases
			List the causes of restrictive lung diseases

			Describe pneumoconiosis with respect to etiology and pathogenesis
			Enlist asbestos related diseases
			Describe morphologic features of asbestosis
			Describe morphological features of cryptogenic organizing pneumonia, coal workers
Re2-Pa-006	Pneumonia		Describe various etiological factors of pulmonary pneumonia.
			Describe the histopathological subtypes of pulmonary pneumonia
			Describe morphological features of bronchogenic and lobar pneumonia.
			Describe four stages of lobar pneumonia
			Explain the complications associated with pulmonary pneumonia
Re2-Pa-007	Granulomatous Inflammation		Describe the morphological features of different types of granulomatous inflammation
			Describe Ghons complex.
			Differentiate between primary and secondary tuberculosis.
Re2-Pa-008	Hypersensitivity Reaction (Hsr) Type IV		Describe hypersensitivity reaction IV with clinical examples
			Describe the immune mechanism involved in HSR IV
Re2-Pa-009	Pleural Tumors		Classify pleural tumors
			List the risk factors for development of malignant mesothelioma
			Describe morphologic features of malignant mesothelioma
Re2-Pa-	Lung Tumors		Classify lung tumors

010			Benign & Malignant diseases of lungs and thorax
			Describe morphologic features of squamous cell carcinoma Adenocarcinoma, neuroendocrine tumors, other Tumors
			Enumerate paraneoplastic syndromes associated with lung tumors
Re2-Pa-011		Image Session Of Respiratory System-II	Small cell carcinoma lung Squamous cell carcinoma lung Adenocarcinoma lung Malignant Mesothelioma
Re2-Pa-012		Pulmonary Edema & Acute Respiratory Distress Syndrome (ARDS)	Classify pulmonary edema according to etiology
			Describe clinical conditions associated with development of ARDS
			Describe the pathogenesis of ARDS
Re2-Pa-013	Microbiology	Mycobacterium Tuberculosis	Describe the important morphological features, virulence factors of Mycobacterium tuberculosis with their clinical significance
			Describe the pathogenesis of Pulmonary tuberculosis Describe the immunity and hypersensitivity against infections by Mycobacterium tuberculosis
			Extra pulmonary tuberculosis infections
Re2-Pa-014		COVID-19	Describe Corona virus
			Explain the structure and antigenicity of the virus Describe the pathogenesis of corona virus
Re2-Pa-		Microorganisms	Discuss the relation with pneumonia
			Enlist organisms producing respiratory

015	Respiratory tract infection	producing	tract infections
		Correlate clinically the virulence factors, transmission, pathogenesis, laboratory diagnosis of organisms causing respiratory tract infections;	<ol style="list-style-type: none"> 1. Mycobacterium tuberculosis 2. Streptococcus pneumoniae 3. Mycoplasma pneumoniae 4. Legionella pneumoniae 5. Haemophilus influenzae 6. Klebsiella 7. Corynebacterium diphtheria 8. Bordetella
			Correlate clinically the virulence factors, transmission, pathogenesis, laboratory diagnosis of organisms causing respiratory tract infections;
			<ol style="list-style-type: none"> 1. Influenza & para influenza viruses 2. RSV 3. Rhinovirus 4. Measles 5. Pneumocystis carinii 6. Aspergillus

PHARMACOLOGY

Code	Topic	Sub Topic	Learning Objectives
Re2-Ph-001	Clinical Pharmacology & Therapeutics	Anti- Asthmatic drugs	<ol style="list-style-type: none"> 1. Discuss the role of different drugs in the prevention & treatment of asthma 2. Describe the mechanism of action & adverse effects of Beta 2 agonists used in asthma

			<ol style="list-style-type: none"> Describe the mechanism of action, actions & adverse effects of Methylxanthines Describe mechanism of action and adverse effects of Mast Cell Stabilizers Discuss the roles of corticosteroids in the treatment of bronchial asthma. Discuss the role of ipratropium in asthma Discuss the mechanism of action and adverse effects of leukotriene synthesis and receptor blockers used in asthma Enlist drugs used in acute and chronic asthma
Re2-Ph-002	Anti-Inflammatory drugs		<ol style="list-style-type: none"> Discuss the role of Anti-inflammatory drugs in COPD Describe the pharmacodynamics of bronchodilators in COPD treatment Explain the mechanism of action and indications of Corticosteroids in restrictive lung diseases.
Re2-Ph-003	Anti-tussives, expectorants, mucolytic		<ol style="list-style-type: none"> Describe anti-tussives, mucolytic and expectorants Interactive Classify Anti-tussives Lecture Describe Pharmacodynamics of these drugs.
Re2-Ph-004	Macrolides and cephalosporin		<ol style="list-style-type: none"> Explain the spectrum of activity for macrolides and cephalosporin Identify adverse reactions associated with common antibiotics
Re2-Ph-005	Drugs For Treatment Of		<ol style="list-style-type: none"> Classify the drugs used for hospital and community- acquired

		Pneumonia	<p>pneumonia</p> <ol style="list-style-type: none"> Describe the mechanism of action for each class Discuss the mechanism of action of pneumococcal and influenza vaccines in stimulating the immune system
Re2-Ph-006		Anti-Tuberculous Drugs	<ol style="list-style-type: none"> Enumerate first and second line drugs for treatment of tuberculosis Describe mechanism of action of first line drugs used in tuberculosis Describe spectrum of antibacterial action of Rifampicin Describe drug interactions of Rifampicin Discuss adverse effects of 1st line Anti-TB drugs Discuss drugs used for various anti-TB regimes Discuss chemoprophylaxis of TB Discuss second line drugs used in TB
Re2-Ph-007		Autacoids	<ol style="list-style-type: none"> Define autacoids. Enlist major histamine receptors. Classify anti-histamine drugs. Describe clinical uses of antihistamines. Discuss the toxicity of antihistamines. Classify serotonin agonists & antagonists. Describe the clinical uses of serotonin agonists & antagonists. Discuss the adverse effects of serotonin agonists & antagonists. Enumerate ergot alkaloids.

			<p>8. Describe the mechanism of action of ergot alkaloids. Discuss the clinical uses of ergot alkaloids. Discuss the toxicity of ergot alkaloids. Enlist the types of prostaglandins.</p> <p>9. Discuss the pharmacological actions of prostaglandins.</p> <p>10. Describe the clinical uses of prostaglandins. Discuss the adverse effects of prostaglandins</p>
Re2-Ph-008		Chemotherapeutic Drugs	Explain the chemotherapeutic options for lung cancer
Re2-Ph-009		Drugs respiratory failure management	Discuss the management strategies for ARDS Explain the role of corticosteroids and sedatives in respiratory failure management
Re2-Ph-010		Opioid analgesics and NSAIDs	<ol style="list-style-type: none"> 1. Describe the mechanism of action and adverse effects of opioid analgesics and NSAIDs in trauma management 2. Explain the role of local anesthetics in pain control through nerve blocks 3. Discuss the use of muscle relaxants in chest trauma to alleviate muscle spasms and improve breathing
Re2-Ph-011		Vasopressors	Discuss the use of vasopressors in managing hypotension due to blood loss in trauma

SURGERY

Code	Topic	Sub Topic	Learning Objectives
Re2-S-	Surgery	lung cancer	Surgical approach to lung cancer

001		resection	resection, Complications of lung resection
Re2-S-002		Lung Metastasis	Management of Lung metastases
Re2-S-003		Tension Pneumothorax	<ol style="list-style-type: none"> 1. Describe mechanism of tension pneumothorax (T.P.) Enlist the causes of T.P. 2. Describe the clinical of features of tension pneumothorax (signs & symptoms) 3. Outline the steps of treatment of T.P.
Re2-S-004		Open Pneumothorax	<ol style="list-style-type: none"> 1. Describe sucking chest wound. 2. Describe the underlying respiratory physiological changes in flail chest. 3. Describe steps of management of such wound.
Re2-S-005		Thoracic Trauma	<ol style="list-style-type: none"> 1. Enlist the causes of thoracic trauma in Describe significance of RTA mortality. 2. Enlist the causative factors for breathing difficulty in chest trauma patients. 3. Review the different thoracic injuries. 4. Enumerate the sources of probable bleeding in a chest trauma. 5. Describe the initial management of a patient with chest trauma. 6. Outline the management of thoracic injuries
Re2-S-006		Thoracic Trauma-II	<ol style="list-style-type: none"> 1. Define flail chest. 2. Describe mechanism of respiratory

			<p>sequel of flail chest. Describe the clinical features of flail chest.</p> <ol style="list-style-type: none"> Describe treatment options in flail chest Define surgical emphysema. Enumerate the causes of surgical emphysema. Describe clinical features of Surgical emphysema Describe the steps of management of surgical emphysema Enumerate complications.
Re2-S-007		Post Op Respiratory Complications	<ol style="list-style-type: none"> Describe the clinical features of following respiratory complications: Atelectasis, pneumonia, pulmonary embolism Interpret the X ray findings of post-operative pneumonia Outline the treatment option of complications. Enlist the causes of diaphragmatic rupture Enumerate the clinical features Describe the x-ray/USG findings Describe the steps of management
Re2-S-008		Lungs Injuries	<ol style="list-style-type: none"> Define the pulmonary contusions Enumerate the clinical features Describe the steps of management Describe complications of pulmonary contusion.

MEDICINE

Code	Topic	Sub Topic	Learning Objectives
Re2-M-001	Medicine	Bronchial asthma	<ol style="list-style-type: none"> Correlate Clinical features of bronchial asthma to its pathogenesis

			<ol style="list-style-type: none"> 2. Describe investigations of a patient with asthma Enlist features of acute severe asthma 3. Enlist features of life-threatening asthma 4. Discuss the step-wise therapy of stable asthma 5. Discuss the management of acute severe asthma
Re2-M-002	Pediatrics	Childhood asthma	<ol style="list-style-type: none"> 1. Enumerate risk factors for asthma. 2. Describe clinical features of acute and chronic bronchial asthma. 3. Classify asthma symptoms according to GINA Guidelines. 4. Outline management of childhood Asthma.
Re2-M-003	Medicine	COPD, Chronic bronchitis, Emphysema	<ol style="list-style-type: none"> 1. Define COPD 2. Describe types of COPD 3. Describe Clinical features of COPD 4. Outline investigation plan of a patient with COPD Describe GOLD staging criteria for COPD 5. Outline the management of acute exacerbation of COPD Describe long term management of COPD 6. Describe criteria for long term oxygen therapy in COPD
Re2-M-004	Medicine	Bronchiectasis	<ol style="list-style-type: none"> 1. Describe the clinical features of bronchiectasis Describe investigations of bronchiectasis Enlist the complications of bronchiectasis 2. Describe the management of bronchiectasis
Re2-M-005	Pediatrics	Cystic fibrosis	<ol style="list-style-type: none"> 1. Define cystic fibrosis. 2. Describe pattern of inheritance of cystic fibrosis. Describe pathophysiology of CF

			<ol style="list-style-type: none"> 3. Describe clinical features of CF. 4. Interpret investigations for CF. Enumerate steps of management of CF.
Re2-M-006	Behavioral Sciences	Psychological implications of COPD	<ol style="list-style-type: none"> 1. Identify psychological disturbances associated with respiratory diseases/COPD 2. Enlist psychological consequences of COPD 3. Describe steps to manage psychological effects of COPD
Re2-M-007	Medicine	Interstitial Lung Diseases	<ol style="list-style-type: none"> 1. Enlist the causes of ILD 2. Describe the clinical features of interstitial lung diseases Outline investigation plan of interstitial lung diseases Describe the treatment of interstitial lung diseases
Re2-M-008	Pediatrics	Pertussis	<ol style="list-style-type: none"> 1. Define pertussis. 2. Describe clinical features of pertussis. Describe complications of pertussis. Interpret investigations for pertussis. 3. Describe prognosis and prevention.
Re2-M-009	Pediatrics	Croup	<ol style="list-style-type: none"> 1. Define Croup 2. Describe etiology of croup. 3. Describe clinical features of viral croup. Interpret investigations for viral croup. Discuss differential diagnosis of croup Describe management of viral croup. 4. Describe clinical features of epiglottitis. Interpret investigations for epiglottitis. 5. Describe management of epiglottitis.
Re2-M-010	Forensic Medicine	Asphyxiants Poisons	<p>Comprehend the MoA of the asphyxiant poisons</p> <p>Diagnose a case when presented to him Plan management</p>
Re2-M-011	Medicine	Pneumonia	<ol style="list-style-type: none"> 1. Classify pneumonia 2. Enlist the microbiological agents causing pneumonia Describe the clinical features of

			<p>pneumonia</p> <ol style="list-style-type: none"> 3. Enlist investigations plan in a patient of pneumonia Describe CURB-65 criteria for severity of pneumonia Describe the management of pneumonia 4. Describe the complications of pneumonia
Re2-M-012	Pediatrics	Childhood Pneumonia	<ol style="list-style-type: none"> 1. Define bronchiolitis and pneumonia. 2. Enlist etiology of bronchiolitis and pneumonia. Describe clinical features of bronchiolitis/pneumonia. Interpret investigations for bronchiolitis/pneumonia. 3. Describe management of bronchiolitis / pneumonia
Re2-M-013	Medicine	Pulmonary Tuberculosis	<ol style="list-style-type: none"> 1. Describe investigation plan of a patient with suspected tuberculosis 2. Describe investigation plan of a patient with suspected tuberculosis 3. Discuss primary and secondary tuberculosis 4. Correlate pathophysiology of pulmonary tuberculosis with its clinical presentation. 5. Discuss clinical features of pulmonary tuberculosis. Interpret investigations for tuberculosis. 6. Discuss management of pulmonary tuberculosis. Discuss prevention of tuberculosis. 7. Drug resistant TB 8. Discuss prevention of tuberculosis in a neonate of a mother suffering from tuberculosis.
Re2-M-014	Community Medicine	Preventive Measures	<ol style="list-style-type: none"> 1. Describe the epidemiology prevalence and preventive measures of Tuberculosis 2. Describe the epidemiology prevalence and

			<p>preventive measures of Respiratory infections</p> <ol style="list-style-type: none"> 3. Describe the epidemiology & Prevention of Pneumoconiosis 4. Describe the epidemiology prevalence and preventive measures of Influenza, Diphtheria, whooping cough, meningococcal meningitis 5. Discuss the efficacy of the BCG vaccine in different populations.
Re2-M-015		Bronchogenic Carcinoma	<p>Describe Clinical features of bronchogenic carcinoma Enlist investigations of bronchogenic carcinoma Enumerate treatment options in bronchogenic carcinoma Complications of CA</p>
Re2-M-016	Medicine	Pleural Effusion	<ol style="list-style-type: none"> 1. Define pleural effusion 2. Differentiate between exudative and transudative pleural effusion 3. Enlist causes of pleural effusion 4. Describe Clinical features of pleural effusion 5. Describe investigations in a patient with pleural effusion Describe palliative management of recurrent pleural effusion
Re2-M-017		Pneumothorax	<ol style="list-style-type: none"> 1. Define pneumothorax Classify pneumothorax 2. Enlist Risk factors of pneumothorax 3. Describe clinical features of pneumothorax 4. Enlist investigations of pneumothorax <p>Describe management of pneumothorax</p>
Re2-M-018		Respiratory Failure	<ol style="list-style-type: none"> 1. Define respiratory failure 2. Classify types of respiratory failure 3. Describe clinical features of respiratory failure Describe management of respiratory failure

Re2-M-019		Obstructive Sleep Apnea	Define Etiology, clinical features, investigations, treatment of OSA
Re2-M-020		COVID-19	<ol style="list-style-type: none"> 1. Enumerate the lab investigations to diagnose Covid 19 Describe the Clinical presentation of Covid-19 2. Discuss the management protocols to treat Covid patient complications 3. Discuss the vaccination and side effect (for COVID)

6.3.2 Practical / Lab Work

PATHOLOGY

Code	Topic	Sub Topic	Learning Objectives
Re2-Pa-016	Microbiology	Bordetella Pertussis	<ol style="list-style-type: none"> 1. Describe the important morphological characteristics, biochemical reactions, virulence factors of Bordetella pertussis with their clinical Significance 2. Describe pathogenesis of Bordetella pertussis infections Describe lab diagnosis of Bordetella pertussis infections.
Re2-Pa-017		Streptococcus Pneumoniae & H. Influenza	<ol style="list-style-type: none"> 1. Describe the important morphological characteristics, biochemical reactions, virulence factors of Streptococcus pneumoniae with their clinical significance 2. Enumerate the diseases caused by Streptococcus Pneumoniae 3. Describe the pathogenesis of lobar Pneumonia caused by S. pneumonia 4. Describe the lab investigation of

			<p>Streptococcus Pneumoniae infections</p> <ol style="list-style-type: none"> Describe the important morphological characteristics, biochemical reactions, virulence factors of H. influenzae with their clinical significance Describe the pathogenicity of H. influenzae in causation of respiratory tract infections Describe the lab diagnosis of H. influenzae infections
Re2-Pa-018		Mycoplasma Pneumoniae	<ol style="list-style-type: none"> Describe the important morphological characteristics, biochemical reactions, virulence factors of Mycoplasma pneumoniae Describe the pathogenesis of atypical pneumonia caused by M. pneumoniae Describe the lab diagnosis of M. pneumoniae infections
Re2-Pa-019		Legionella	<ol style="list-style-type: none"> Describe the important morphological characteristics, biochemical reactions, virulence factors of Legionella pneumophila Describe the pathogenesis of atypical pneumonia caused by Legionella pneumophila
Re2-Pa-020		Chlamydia & Coxiella Laburnetii	<ol style="list-style-type: none"> Define Chlamydia, enumerate their medically important species Enumerate the diseases caused by Chlamydia Describe the important morphological characteristics,

			<p>biochemical reactions, virulence factors of Chlamydia and their clinical significance</p> <p>4. Describe the pathogenesis of C. trachomatis, C. pneumoniae, C. psittaci mediated atypical pneumonias</p> <p>5. Describe the lab diagnosis of Chlamydial infections</p>
Re2-Pa-021		Bacillus Anthracis	<p>1. Describe the important morphological Characteristics, biochemical reactions, virulence factors of Bacillus anthracis with their clinical significance.</p> <p>2. Describe the lab diagnosis of Bacillus anthracis infections.</p>
Re2-Pa-02		Yersinia Pestis	<p>1. Describe the important morphological characteristics, biochemical reactions, virulence factors of Yersinia pestis and their clinical significance</p> <p>2. Describe the pathogenesis of plague</p> <p>3. Describe the lab diagnosis of Yersinia pestis infections</p>
Re2-Pa-023		Mycobacterium Tuberculosis	Describe the lab diagnosis of Pulmonary (ZN staining and cultures)

FORENSIC MEDICINE

Code	Topic	Sub Topic	Learning Objectives
Re2-For-001	Forensic Medicine	Hanging/ Strangulation	<p>1. Define hanging</p> <p>2. Enlist types of hanging</p> <p>3. Enumerate causes of death in hanging Enlist</p>

			<p>autopsy findings in hanging.</p> <ol style="list-style-type: none"> Define strangulation. Enlist its sub types Enlist autopsy findings in case of manual strangulation Enlist autopsy findings in case of ligature strangulation Differentiate between strangulation and hanging ligature mark
Re2- For-002		Suffocation, Smothering	<ol style="list-style-type: none"> Define suffocation Enumerate deaths which are caused due to suffocation. Define smothering Enlists autopsy findings in case of death due to smothering
Re2- For-003		Gagging, Choking Traumatic Asphyxia and Autoerotic Asphyxia	<ol style="list-style-type: none"> Define gagging Enlists autopsy findings in case of death due to gagging Define choking Enlists autopsy findings in case of death due to choking Define traumatic asphyxia Enlists autopsy findings in case of traumatic asphyxia Discuss medico legal importance
Re2- For-004		Asphyxiant poisons	<p>The student be able to:</p> <ol style="list-style-type: none"> Enlist important Asphyxiant present in the environment Describe their Mechanism of action. Discuss effect on different body systems with increasing blood concentration Enlist sign and symptoms Enlist autopsy findings Describe their medico legal importance Comprehend the MoA of the Asphyxiant poisons, Diagnose a case when presented to him Plan management

PHARMACOLOGY

Code	Topic	Sub Topic	Learning Objectives
Re2-Ph-012	Clinical Pharmacology & Therapeutics	Prescription Writing	<ol style="list-style-type: none"> 1. Write down the prescription for Tuberculosis Write down the prescription for Asthma Write down the prescription for Cough 2. Discuss the steps involved in selection of P-drug for bronchial asthma

COMMUNITY MEDICINE

Code	Topic	Sub Topic	Learning Objectives
Re2- CM-001	Community Medicine	Isolation Precautions	<ol style="list-style-type: none"> 1. Describe the standard preventive precautions for all patients. 2. Describe the additional precautions for infected patients & for patient requiring single isolated room. 3. Describe the precautions for family members providing care to the patient in hospital & home. 4. Describe the use of face mask, gloves, shoe cover, cap and gown. 5. Recognize the common errors made while using personal protective equipment. 6. Demonstrate the method to wear face mask, gloves, shoe cover, cap and gown & remove them aseptically.

6.3.3 Clinical Rotations / Community Healthcare

MEDICINE & SURGERY

Code	Topic	Sub Topic	Learning Objectives
Re2-M-021	Medicine (Pulmonology)	Instruct patients in the use of devices for inhaled medication	<ol style="list-style-type: none"> 1. Use of Devices for Inhaled Medication: Types of Inhalation Devices: Metered-dose inhalers 2. Explain to a patient how to use an inhaler correctly, including spacers, and check that their technique is correct.
Re2-M-022	Medicine (Pulmonology)	Prescribe and administer oxygen	<ol style="list-style-type: none"> 1. Indications for Oxygen Therapy Oxygen Delivery Methods Monitoring Oxygen Saturation 2. Prescribe and administer oxygen safely using a delivery method appropriate for the patient's needs and monitor and adjust oxygen as needed. Knows the exact volume given per Minute
Re2-M-023	Radiology	Interpretation of x-rays of chest	<ol style="list-style-type: none"> 1. Common Findings of Pneumothorax, pleural effusion, lung consolidation, fractures. 2. Students should be able to identify rib fractures, hemothorax, pneumothorax, free air under diaphragm, pelvic fractures
Re2-M-024	Medicine (Pulmonology)	Tuberculosis Mantoux Test	<ol style="list-style-type: none"> 1. Define Mantoux test 2. Enumerate the indications and contraindications Describe the procedure and interpretation of results
Re2-S-	Surgery	Pneumothorax	<ol style="list-style-type: none"> 1. Clinical Presentation, Management

009	(Thoracic)		<p>Strategies & Complications</p> <p>2. Students should be able to identify and differentiate between types of pneumothoraxes (primary, secondary, and tension pneumothorax) through clinical assessment and imaging techniques</p>
Re2-S-010	Surgery (Thoracic)	Pulmonary embolism	<p>Management & Complications Should be able to perform risk assessments using validated scoring systems (e.g., Wells criteria) interpret imaging findings to differentiate pulmonary embolism from other respiratory conditions.</p>
Re2-S-011	Surgery (Thoracic)	Principles of management of trauma	<p>ABCDE approach in trauma settings</p> <p>Students should be able to assess and prioritize the management of thoracic trauma by identifying key injuries (such as pneumothorax, hemothorax, rib fractures, and flail chest)</p>
Re2-S-012	Surgery (Thoracic)	Principles of management of trauma	<p>Student should be able to demonstrate appropriate interventions (including airway management and fluid resuscitation)</p>
Re2-S-013	Paeds (Thoracic)	Pleural Tap	<p>1. Students should be able to identify the anatomical landmarks of the pediatric patient for pleural tap</p> <p>2) perform the pleural tap procedure on simulation in skill lab</p> <p>2. Counsel the attendants for the indication, procedure, and contraindication of the pleural tap.</p>



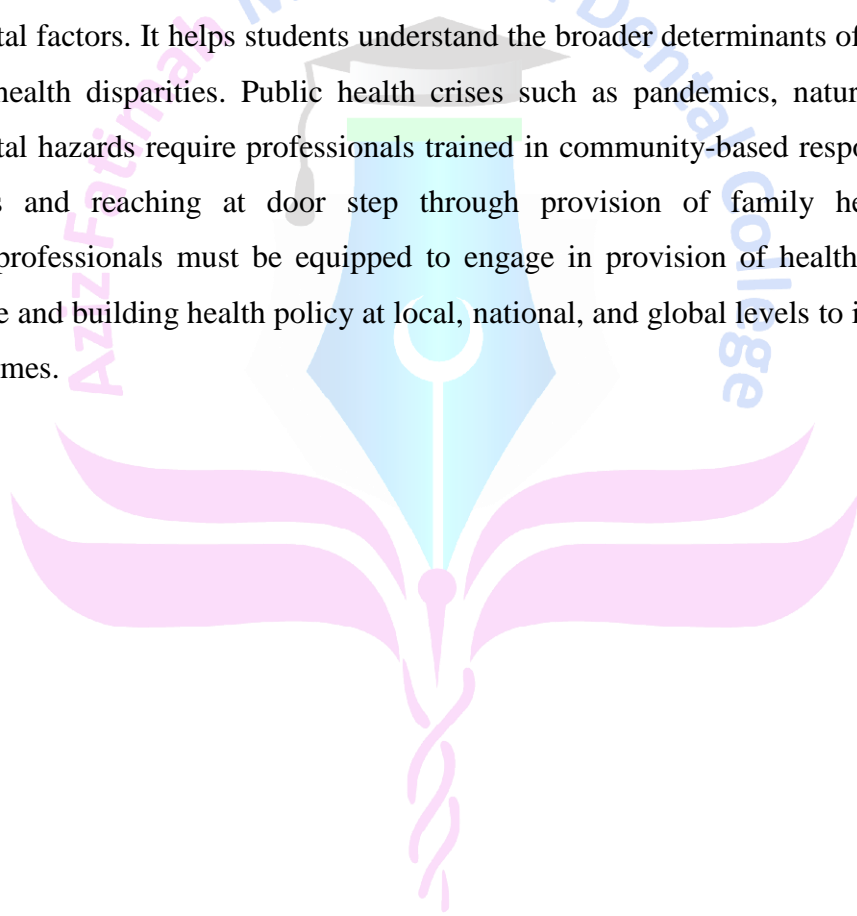
**Community Medicine & Family
Health-I**

7. Community Medicine & Family Health-I

7.1 Module Rationale

The module on Community Medicine and Family Medicine is crucial for addressing the learning needs of medical students about holistic concept of health, prevalent health problems, their determinants and provision of comprehensive healthcare to the communities.

Curriculum on Community Medicine and family medicine equips future healthcare professionals with the knowledge, skills, and attitude to implement preventive strategies, health promotion & reduce the burden of disease through primary health care approach targeting universal health coverage. Health outcomes are influenced by social, economic & environmental factors. It helps students understand the broader determinants of health & how to address health disparities. Public health crises such as pandemics, natural disasters & environmental hazards require professionals trained in community-based responses & health emergencies and reaching at door step through provision of family health services. Healthcare professionals must be equipped to engage in provision of health care needs at smaller scale and building health policy at local, national, and global levels to improve public health outcomes.



7.2 Module Outcomes

To apply principles of epidemiological study designs in research methodology to establish association and causations

To apply principles of community diagnosis, screening in general population and high-risk population

To apply the concept of environmental safety and global environmental concerns including air, water, waste disposal, radiation, noise and climate change

To apply principles of infectious disease epidemiology in classification, prevention and control of communicable diseases

To apply different types of surveillance in disease control, elimination and eradication

To understand the concept of herd immunity and role of immunizing agents in disease prevention and control

To demonstrate the difference between health education and propaganda, application of different health education, communication, information in different settings using different techniques and approaches

To apply principles of primary health care targeting universal health care coverage through family medicine.

To demonstrate comprehensive health care services as a concept of One Health which is attainable and achievable.

7.3 Learning Objectives

7.3.1 Knowledge

COMMUNITY MEDICINE

Code	Topic	Sub Topic	Learning Objectives
CMFH1- CM-001	Community Medicine	Health Systems in Pakistan	To understand the development of Public Health in Pakistan.
			To describe the Health Policy and planning in Pakistan.
			To explain the background, concepts and progress made towards achieving "Health for all",
			To understand the concepts and assess the progress of "Primary Health Care"
			To describe the National Disease Control programs including policies, strategies and operations.
			To analyze the roles Federal and Provincial Governments in managing Healthcare services in Pakistan
			To understand The District Health System, in the context of devolution. The Physician as a manager: Functions of manager management of material, human and financial resources.
			To understand key principles of leadership and motivation in healthcare settings
			To describe the collaboration between the public and private sectors in health care
To evaluate the role of Non-governmental Organizations and			

			International Agencies.
			To analyze the resources available for health.
			To understand the importance of community mobilization
CMFH1- CM-002	Community Medicine	General Epidemiology and Research Methodology and Screening	To understand the background, concepts, uses and basic measurements of epidemiology (morbidity, mortality, disability and fatality)
			To describe the different epidemiological methods including descriptive, analytic and experimental approaches
			To differentiate between association and causation
			Investigation of an outbreak or an epidemic.
			To understand the principles and methods of disease screening
			To conduct a community diagnosis and interpret its findings
			To describe research and survey methodologies
CMFH1- CM-003	Community Medicine	Environment al Health Sciences	To understand the composition of air
			To describe the causes of air pollution and methods of air purification
			To explain the diseases caused by impurities in the air and their prevention
			To identify the sources of water and understand daily water requirements
			To analyze the causes of water pollution and methods for its prevention
To understand the process of water purification and water quality standards			

			To describe diseases caused by polluted water and their prevention
			To explain the contents, hazards, and safety measures for the disposal of solid and liquid waste from domestic, industrial, and hospital sources and To understand global and marine problems related to waste disposal
			To differentiate between climate and weather
			To analyze global environmental concerns like greenhouse effect, depletion of Ozone layer and acid rains
			To explain the effects of extremes in temperature, humidity, and atmospheric pressure on human health, along with prevention methods
			To describe the sources, types, causes, hazards, and prevention of radiation exposure
			To understand the concepts of healthful housing and the challenges faced in urban and rural slums
			To define noise, its causes, acceptable levels, and the hazards and methods of control
CMFH1- CM-004	Community Medicine	Prevention and control of Infectious diseases	Definitions to differentiate between Infection, contamination, pollution, infestation
			To understand the terminology of Infectious disease, communicable disease, contagious disease
			To define Host, Immune and susceptible

			persons
			To differentiate between Sporadic, Endemic, Epidemic, Pandemic, Epizootic, Exotic and Zoonotic
			To understand the roles of contact, fomites, carriers, insect vectors, and reservoirs of infection
			To describe the incubation period, infective period, and generation time
			To differentiate between cross infection, nosocomial infections, opportunistic infections, and iatrogenic disorders (Physician induced)
			To explain the concepts of surveillance, control, eradication, and elimination
			To analyze the various modes of disease transmission
			To understand the principles of disease prevention and control
			To describe the methods and types of disinfection
			To explain the concept of immunity
			To identify different immunizing agents
CMFH1- CM-005	Community Medicine	Communication, information and health education	Describe the concepts aims and approaches of IEC and approaches used in public health (Knowledge)
			Recall the contents, principles and stages of health education (Knowledge)
			Explain the process, types, methods and barriers of communication
			Identify the role of health care provider in health education (knowledge)
			Plan, organize and evaluate a health

			education program (skill)
			Describe the concept of social marketing and its' applications in health sector (knowledge and skill)
			Conduct health education sessions
CMFH1- CM-006	Community Medicine	Clinical entrepreneur ship	Developing new models for patient care, such as telemedicine, personalized medicine, and digital health tools.
			Focusing on improving patient outcomes and experiences through technology, services, or products that cater to specific needs
			Working with professionals from various fields' technology, business, and healthcare to foster innovation and create comprehensive solutions.
			Identifying gaps in the market and understanding patient and provider needs to create viable business models.
			Designing solutions that can grow and adapt over time while maintaining quality and efficiency.
			Securing funding through grants, venture capital, or partnerships to support the development and launch of new products or services.
			Utilizing advancements in technology, such as AI, big data, and wearables, to enhance clinical practice and patient management targeting ethical and social responsibility

FAMILY MEDICINE

Code	Topic	Sub Topic	Learning Objectives
CMFH1-FM-001	Community Medicine	Epidemiology	Understand and describe the impact of social, demographic, cultural, environmental, and climate factors on health and disease.
CMFH1-FM-002		Health promotion	Describe principles of prevention and control and apply them to common/prevalent diseases
CMFH1-FM-003		Counselling and advocacy	Describe the role, purpose, and method of counseling and patient education
CMFH1-FM-004		Communication skills	Discuss breaking bad news and effective communication strategies and their role in violence de-escalation and management.
CMFH1-FM-005	Medicine, surgery	Scope of GP practice	Understand the history and evolution of general practice as a medical specialty and the structure and organization of general practice at national and international levels.
CMFH1-FM-006	Community Medicine	Concept of health & disease	Describe health literacy and shared decision-making concepts.
			Discuss evidence-based clinical decision-making.
			Describe different healthcare models and the concept of universal health coverage.
CMFH1-FM-007	Community Medicine	Epidemiology of diseases	Define and apply ethical practices in clinical decision-making within family medicine
			Discuss the general practitioner's role in coordinating patient care, including treatment plans, educating patients, and

			ensuring continuous care.
			Discuss the principles of patient-centered care, focusing on the individual's needs and preferences.
CMFH1-FM-008	Community Medicine	Preventive medicine	Discuss the importance of quality care across preventive, therapeutic, rehabilitative, and palliative domains of healthcare.
			Learn how to effectively utilize available healthcare resources to optimize patient care.
CMFH1-FM-009	Medicine & surgery	Patient Safety	Implement strategies to reduce risk in clinical practice and ensure patient safety being a safe doctor

7.3.2 Practical / Lab Work

COMMUNITY MEDICINE

Code	Topic	Sub Topic	Learning Objectives
CMFH1-CM-007	Pathology	MSDS Standards	To assess the application of standards and Quality assurance indicators for imaging services
		Radiology	To assess the application of standards and Quality assurance indicators for emergency services
		Emergency and traumatology	To assess the application of standards and Quality assurance indicators for high-risk obstetrical services
		Gynae & Obs	To assess the application of standards and Quality assurance indicators for anesthetic services
		Anaesthesia	To assess the application of standards and Quality assurance indicators for

			surgical procedures
		Surgery and Allied	To assess the application of standards and Quality assurance indicators for prescription and dispensing and administration of the drugs
		Working Pharmacies	To assess the application of standards and Quality assurance indicators for patients' rights and education
		Medical and Surgical OPDS	To collect data and transform into a report with recommendations

FAMILY HEALTH

Code	Topic	Sub Topic	Learning Objectives
CMFH1-FM-010	General OPD	History taking and physical examination. Diagnosis of acute and chronic conditions. Patient education on lifestyle and disease management. Recognizing red flags and making appropriate referrals	<ol style="list-style-type: none"> 1. Conduct patient history and physical exams. 2. Identify common conditions and refer when necessary. Develop patient-centered management plans.
CMFH1-FM-011	Clinical pharmacology	Fever, Body aches and Pain,	Symptomatic Approach to Adults with nutritional supplements

		<p>Flulike symptoms, Cough (Dry & Productive), Muscles Pain, Joint Pains, Diarrhea, Dysentery, Abdominal Cramps and Allergic Reactions</p>	
CMFH1-FM-012	Gynae & Obs.	<p>Fever, Body aches and Pain, Flulike symptoms, Cough (Dry & Productive), Muscles Pain, Joint Pains, Diarrhea, Dysentery, Abdominal Cramps and Allergic Reactions</p>	Symptomatic Approach to pregnant female with nutritional supplements
CMFH1-FM-013	Clinical pharmacology	<p>Fever, Body aches and Pain, Flulike symptoms, Cough (Dry & Productive), Diarrhea (Role</p>	Symptomatic Approach to children with nutritional supplements

		of ORS / Homemade), dysentery, Abdominal Cramps and Allergic Reactions	
CMFH1- FM-014	Community Health Center Rotation	Conduct health education sessions and screening programs Participate in vaccination drives and community outreach activities. Identify health needs in the community and implement preventive strategies.	<ol style="list-style-type: none"> 1. Engage in community health promotion and disease prevention. 2. Participate in health screening, vaccination drives, and education.

7.3.3 Clinical Rotations / Community Healthcare

COMMUNITY MEDICINE

Code	Topic	Sub Topic	Learning Objectives
CMFH1- CM-008	Community Medicine	Water purification plant/Water testing lab	<ol style="list-style-type: none"> 1. Assess the appropriateness of location of a water purifying facility. 2. Elaborate the process of delivering

			<p>and transporting water to a water treatment plant.</p> <ol style="list-style-type: none"> 3. Differentiate the critical aspects of water supply from various sources. 4. Identify the physical and chemical characteristics of the water. 5. Determine the characteristics of the ingredients contained in water purification plants. 6. Characterize infectious organisms and indicators. Explain how chemical compounds affect human health. Discuss the physical, chemical, and biological unit operations that are commonly encountered in treatment processes; 7. Determine which rules, regulations, and guidelines govern the selection of various water treatment processes at the local, national, and international levels. 8. Highlight the requirement for surface water and some ground water treatment for drinking reasons. 9. Comprehend the role of each treatment procedure in the treatment of drinking water. Provide a fundamental overview of technology selection. 10. Evaluate the working of water treatment plants.
CMFH1-	Community	Visit to	<ol style="list-style-type: none"> 1. Identify working biomedical waste

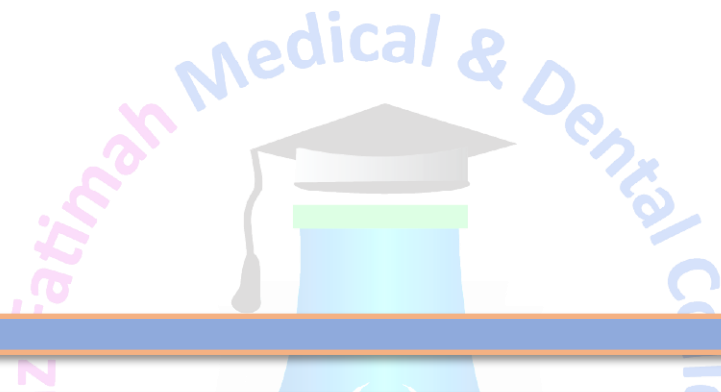
CM-009	Medicine	hospital waste management	<p>department</p> <ol style="list-style-type: none"> 2. Describe various type of biomedical waste & their disposal in hospital 3. Explain with rationale about the waste management plan of their hospital 4. Describe color coding scheme for various type of waste according to WHO 5. Describe the various methods to dispose of waste, their advantages and disadvantages. 6. Describe non risk waste 7. Describe risk waste 8. Describe incineration working and cost analysis 9. Describe storage site of waste at hospital
CMFH1- CM-010	Community Medicine	Visit to Rehabilitation center	<ol style="list-style-type: none"> 1. Describe the various physical, emotional and cognitive disabilities experienced by people who receive rehabilitation services and understand their functional limitations. 2. Explain the medical & psychosocial impact of disabilities. 3. Explain the impact of society's attitudes towards disabilities on the treatment of people with disabilities Critically evaluate the effect of physical, mental, gender, racial, cultural, and environmental factors on the lives of people with

			<p>disabilities</p> <ol style="list-style-type: none"> 4. Develop interaction skills to accommodate cultural sensitivity when working with consumers & their families. 5. Explain the local context to familiarize the wide variety of generic and specialized community resources available to serve people with disabilities. 6. Describe the major services provided in rehabilitation (e.g., rehabilitation counseling, vocational evaluation, adjustment services, job placement, physical restoration, environmental adaptations). 7. Explain the role of the rehabilitation case manager in coordinating services for people with disabilities. 8. Explain the local, state, and federal laws that affect rehabilitation services and the rights of people with disabilities. 9. Explain the importance of advocacy (including self- advocacy) in the field of rehabilitation 10. Discuss awareness and imparting skills to empower consumers to be active participants in their own rehabilitation plan. 11. Critically appraise the ethical guidelines based on principles that encompass the rehabilitation field.
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			<p>12. Develop the verbal, written, and nonverbal communication skills necessary to work with people with disabilities, their families, and other service providers.</p> <p>13. Develop basic rehabilitation service delivery skills Describe the rehabilitation process and techniques used to evaluate eligibility for services, assess consumers to identify employment and independent living options, develop appropriate treatment plans, and provide follow- up</p> <p>14. Explain the similarities and differences among public, private not-for-profit, and private-for-profit rehabilitation practice.</p> <p>15. Discuss the community-based employment options for individuals with disabilities</p> <p>16. Recognize the social, political, economic, and legal issues pertinent to an aging society and rehabilitation Develop the knowledge and skills pertinent to the procedures and programs provided to persons with developmental disabilities.</p> <p>17. Develop the knowledge and skills pertinent to the procedures and programs provided to persons with psychiatric disabilities.</p>
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			<p>18. Develop the knowledge and skills to train, supervise, and evaluate employees who are providing direct care to consumers.</p> <p>19. Discuss the professional organizations, professional journals, and job opportunities in the field of rehabilitation. Discuss the integration of the biological, physical, behavioral, and clinical sciences into physical therapy services</p> <p>20. Exhibit professional conduct and behaviors that are consistent with the legal and ethical practice of physical therapy.</p> <p>21. Demonstrate compassion, care, integrity, and respect for differences, values, and preferences in all interactions with patients/clients, family members, health care providers, students, other consumers, and payers.</p> <p>22. Screen patients/clients to determine if they are candidates for physical therapy services or if a referral to, or consultation with, another health care professional or agency is warranted.</p> <p>23. Complete a patient/client examination/re-examination and evaluate and interpret the examination data to determine a</p>
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			<p>physical therapy diagnosis and prognosis</p> <p>24. Employ critical thinking, self-reflection, and evidence-based practice to make clinical decisions about physical therapy services.</p> <p>25. Collaborate with patients/clients, caregivers, and other health care providers to develop and implement an evidence-based plan of care that coordinates human and financial resources.</p> <p>26. Critically appraise the services and information related to health promotion, fitness, wellness, health risks, and disease prevention within the scope of physical therapy practices and rehabilitation</p>
CMFH1-CM-011	Community Medicine	Visit to BHU & RHCs	<p>1. Design and implement community-based Health education and promotion projects.</p> <p>2. Collect, organize, analyze, interpret and disseminate data of disease burden in community and present report</p>
CMFH1-CM-012	Community Medicine	Acquired community in vicinity of Medical College	House hold survey of 10 houses. Data collection and report writing



Forensic Medicine & Toxicology-III

8. Forensic Medicine & Toxicology-III

8.1 Module Rationale

This module prepares the 3rd year MBBS students for the real-world challenges of crime scene investigation, medico-legal frameworks of Pakistan, and dealing with cases of poisoning. This module is critical in developing a holistic understanding of the intersection of the medical profession and law.



8.2 Module Outcomes

- Describe different types of Laws
- Define legal terms relevant to medical practice and explain procedures in the courts of law
- Explain legal aspects of medical practice
- Discuss the principles and methods of crime scene investigations
- Describe different analytical techniques to diagnose the nature of poison/drugs



8.3 Learning Objectives

8.3.1 Knowledge

LAW

Code	Topic	Sub Topic	Learning Objectives
For3-L-001	Forensic Medicine	Law	Define and describe different types of law.
For3-L-002		Hierarchy of courts and their judicial powers	Describe different levels of courts of Pakistan and their judicial powers.
For3-L-003		Legal Terms and Procedures	Define different legal terms.
			Understand legal procedures and its presentation in the courts
For3-L-004		Evidence	Define and describe types of evidence
			Describe the stages of presentation of evidence in the court of law.
			Explain the types of witness and its presentation in the court
For3-L-005		Forensic psychiatry and Criminal Responsibility	Differentiate between dying deposition and declaration.
			Describe general presumptions and exemptions in law to fix the criminal responsibility
			Define insanity, immaturity and intoxication.
	Define illusions, delusions and hallucinations and their types and medico legal significance.		
	Differentiate between true and feigned insanity.		
		Reproduce different sections of PPC dealing with these factors.	
		Describe Mc Naughton's rule, Durham's	

			rule to test the criminal responsibility.
			Outline the fate of criminal responsibility- Unfit to plead, Diminished responsibility, State testamentary capacity.
For3-L-006	Forensic medicine & Behavioral sciences	Consent	Define consent; describe its types and its role in medical treatment, consent & its legal basis.
			Differentiate between valid and invalid consent.
			Outline standard procedure of informed consent.
			Explain the informed consent procedure from a patient before undergoing a major surgical procedure
			Explain the consent protocol of a minor
			Prepare a blanket consent form
			Apply modified procedure of consent taking in special Circumstances.
For3-L-007	Forensic medicine & Behavioral sciences	Doctor patient relationship	Define medical bioethics.
			Describe principles of ethics.
			Explain different codes of medical ethics
			Reproduce duties of doctor towards patients, society and state.
			Outline the factors responsible for the deterioration of ethical values in medical practice.
For3-L-008	Forensic medicine & Behavioral sciences	Professional misconduct	Explain professional misconduct and its different types.
			Describe professional secrecy, privileged communication, medico legal significance of medical records.
For3-L-	Forensic	Professional	Differentiate between professional

009	medicine & Behavioral sciences	Negligence	misconduct and professional negligence.
			Describe different types of professional negligence.
			Establish the extent of damage to patient in medical practice.
			Outline the laws dealing with negligence.
For3-L-010	Forensic Medicine	Laws dealing with medical practice	Describe composition of PMDC
			Explain functions of body-supervision of standards of proficiency, maintenance of register, disciplinary powers.
			Compare composition of PMDC and PMC ACT 2020
			Describe objective of ALLOPATHIC SYSTEM 1962
			Outline Medical and Dental Degree Ordinance 1982.
			Explain relevant sections of Drug act 1976 and subsequent Amendments.
			Write Dangerous drug act 1930 and their different sections and rules.
For3-L-011	Forensic Medicine	With sexual offences Hadood Ordinance 1979, Women Protection Act 2006 Legal aspects of marriage, Muslim family law ordinance 1961.	Describe sections 2,4,5 and 6 of Hadood Ordinance 1979
			Explain natural & un-natural sexual offences
			Reproduce criteria of legal marriage and dissolution of marriage.
For3-L-012	Forensic Medicine	Law relevant to Hurt and killings Qisas and Diyat	Define different terms used in the Qisas and Diyat Act relevant to hurt and Qatl
			Classify hurt and its subtypes as per

		Act 1997	Qisas and Diyat Act 1997
			Classify QATL and its subtypes.
			Describe ISQAT-E-HAML AND ISQAT-E-JANIN.
For3-L-013	Forensic Medicine	Law relevant to mental health	Understand Mental Health Act 2001
			Describe the composition and functions of the FEDERAL MENTAL HEALTH AUTHORITY. SEC 3
			Explain composition and functions of BOARD OF VISITORS.SEC 4
			Reproduce duration for period of detention for assessment, treatment, urgent admission and emergency holding.SEC 9
			Outline the procedure of admission of the patient in the psychiatric center. SEC 10,11
			Explain holding of mentally disordered persons wandering in public places. SECT19
For3-L-014	Forensic Medicine	Laws relevant to Domestic violence Child abuse,	Define child abuse
			Explain epidemiology
			Describe clinical features
			Diagnose a case of child abuse.
			Reproduce medico legal significance. Apply the knowledge to relevant situation for problem- solving
For3-L-015	Forensic Medicine	Injured Person (Medical Aid) Act 2004	Describe the provisions for medical aid and treatment of injured persons to save their lives and protect their health during emergency.

			Describe the concept of the ancient law of torts
For3-L-016	Forensic Medicine	Workman Compensation Act 1923 Employee social security ordinance 1965	Diagnose the injuries causing disablement and percentage loss of earning capacity.
For3-L-017	Forensic Medicine	Health Commission Act	Discuss the Health Commission Act
For3-L-018	Forensic Medicine	Consumers Protection Act	Describe the Consumers Protection Act in relation to Forensic Medicine
For3-L-019	Forensic Medicine	Euthanasia	Define and classify euthanasia.
			Describe different progonist and antagonist views.
			Reproduce global laws relevant to euthanasia.
			Discuss ethical and moral issues.
For3-L-020	Forensic Medicine	Suicide	Define and classify suicide.
			Describe different views about suicide in society.
			Elaborate high risks groups.
			Explain different methods used
			Reproduce preventive measures.
			Discuss moral and ethical issues.
Explain the psychopathology of suicide			

GENERAL TOXICOLOGY

Code	Topic	Sub Topic	Learning Objectives
For3-Tox-001	Forensic Medicine & Chemical	General Toxicology	Enlist & define various branches of Toxicology
			Define terms like drug, poison, dose, acute

	Pathology		and chronic poisoning. Explain the therapeutic index and toxicity rating scale Quote and cite characteristics of homicidal, suicidal, and accidental poisons in home and environment Describe preventive measures of such poisonings
For3-Tox-002	Forensic Medicine & Chemical Pathology	Classification of Poisons	<ol style="list-style-type: none"> 1. Differentiate between Drug and Poison 2. Classify different poisons according to their mode of action 3. Enumerate legal classification of poisons
For3-Tox-003		Factors affecting the absorption of poison	<ol style="list-style-type: none"> 1. Describe routes of absorption, sites of metabolism and routes of excretion of poisons 2. Enlist and describe different factors that modify the patient's response to a toxic agent.
For3-Tox-004		Duties of doctor	<ol style="list-style-type: none"> 1. Enlist the clinical, ethical & statutory duties of a doctor while managing a case of poisoning. 2. Collection, preservation, storage and dispatch of samples for toxicological analysis
For3-Tox-005		Diagnosis of a Poisoning case	<ol style="list-style-type: none"> 1. Diagnose a case of poisoning in living 2. Enlist various bed side tests used for diagnosis of poisoning 3. Interpret post-mortem findings in a suspected case of poisoning
For3-Tox-006		Treatment of a poisoned	<ol style="list-style-type: none"> 1. Apply general principles in treatment of poisoning cases

		patient	<ol style="list-style-type: none"> 2. Prescribe general treatment measures to poisoning cases 3. Briefly describe the procedures to remove the unabsorbed poisons from the body 4. Describe the procedure of Gastric lavage Enlist complications of Gastric Lavage 5. Enumerate contra indications of gastric lavage procedure 6. Describe the role of Activated Charcoal in poisoning patient 7. Enlist indications & contraindications of administering cathartics in poisoning cases 8. Classify antidotes according to their mode of action Define & classify Chelators 9. Enlist properties of ideal chelating agents 10. Enlist & briefly describe the methods of removal of absorbed poisons from the body
For3-Tox-007		Laws related to Drugs & poisons	<ol style="list-style-type: none"> 1. Enlist medico-legal implications of poisoning cases 2. Comprehend different laws relating to poisons & drugs Enlist important relevant points of Rule 8, Rule 13 & Rule 14 of the Dangerous Drug Act 1930 3. Enlist WHO recommendations being incorporated in the Drug act 1976 4. Enlist the WHO criteria for Drug

			Dependence 5. Define National Formulary
For3- Tox-008		Analytical techniques	<p>Explain, observe/perform the following analytical techniques:</p> <ol style="list-style-type: none"> 1. Spectrophotometric: <ul style="list-style-type: none"> • Calorimetric • Fluorometric • Automation. 2. Chromatographic: <ul style="list-style-type: none"> • Thin layer chromatography (TLC). • Gas liquid chromatography (GLC). • High pressure liquid chromatography (HPLC). • Gas liquid mass spectrometry (GL-MS). 3. Competitive binding assay or immunoreactive assay: <ul style="list-style-type: none"> • Radioimmunoassay (RIA). • Enzyme immunoassay (EIA). • Fluorescent Polarization immunoassay (FPIA). • Immunoturbidimetric assay.

SPECIAL TOXICOLOGY

Code	Topic	Sub Topic	Learning Objectives
For3- Tox-009	Forensic medicine & medicine	Corrosives Mineral acids- Sulfuric acid Nitric acid Hydrochloric acid Strong alkalis	<ol style="list-style-type: none"> 1. Describe sources, physical and chemical properties. Explain mechanism of action. 2. Write the fatal dose and fatal period. Describe the clinical features of the poison. Manage the patient clinically.

			<ol style="list-style-type: none"> 3. Explain the autopsy findings. 4. Describe medico-legal aspects. Define Vitriol age. 5. Apply the relevant section of Qisas and Diyat act to the hurt caused by the poison.
For3- Tox-010	Forensic medicine & medicine	Organic acid – Oxalic acid, Carbolic acid, Hydrocyanic acid	<ol style="list-style-type: none"> 1. Classify corrosive poisons. 2. Describe sources, physical and chemical properties. Explain mechanism of action. 3. Write the fatal dose and fatal period. Describe the clinical features of the poison. Manage the patient clinically. 4. Explain the autopsy findings. 5. Describe medico legal aspects.
For3- Tox-011	Forensic medicine & medicine	Irritant Poisons Snakes- Elapids Vipers Hydrophidate or sea- snakes	<ol style="list-style-type: none"> 1. Classify snakes 2. Differentiate between poisonous and non-poisonous snakes. 3. Tabulate the differences between the elapids and vipers. 4. Discuss the characteristics of snake venom. Describe the clinical feature of venomous snake bite. 5. Explain clinical management of venomous snake bite. Discuss post mortem features and medico legal aspects of venomous snake bite.
For3- Tox-012	Forensic medicine & medicine	Irritant Metallic poisons – (Inorganic metallic origin- Arsenic, Mercury, Lead,	<ol style="list-style-type: none"> 1. Describe the sources, properties, routes of absorption of the poison. 2. Reproduce the fatal dose, clinical features of the poison. 3. Outline the clinical management of

		<p>Copper Nonmetallic irritant poisons- Phosphorus</p>	<p>such case. Enlist the samples to be collected, preserved and sent to chemical examiner for its detection.</p> <ol style="list-style-type: none"> State the post mortem appearances of the poison. Explain the medico legal aspects of acute poisoning of the poison. Describe the clinical features of chronic poisoning of the poison. Explain the laboratory investigations to establish the diagnosis. Summarize the clinical management of a case of poisoning with irritant poisons Describe post mortem findings. Discuss medico legal aspects of chronic poisoning.
For3- Tox-013	Forensic medicine & medicine	<p>Agricultural poisons – Organophosphates, Carbamates, Chlorinated Hydrocarbon, Endrin Paraquet Aluminium Phosphide</p>	<ol style="list-style-type: none"> Classify pesticides. Classify organophosphates. Describe the sources of exposure, mechanism of action and fatal dose and fatal period. Explain clinical features of poisoning Summarize laboratory investigations and bed side test to confirm the diagnosis. Enlist the samples to be collected and sent to the chemical examiner. Know the clinical management. Reproduce the autopsy findings. Discuss the medico legal aspects.
For3- Tox-014	Forensic medicine &	<p>Deliriant Poisons – Dhatra Canabis</p>	<ol style="list-style-type: none"> Describe different preparations of Cannabis

	medicine	Sativa	<ol style="list-style-type: none"> 2. Explain clinical features in acute and chronic poisoning, Reproduce fatal dose and fatal period. 3. Know the clinical management of the poison. 4. Enlist the samples to be collected and sent to the chemical examiner. 5. Describe autopsy findings of the case. 6. Explain the difference between the seeds of Datura and chili. 7. Outline medico legal aspects of acute and chronic poisoning.
For3-Tox-015	Pharmacology	Sedatives and Hypnotics – Barbiturates	<ol style="list-style-type: none"> 1. Classify barbiturates. 2. Know fatal dose and fatal period. Describe clinical features. 3. Explain clinical management. Describe autopsy findings. 4. Reproduce medico legal importance
For3-Tox-016	Pharmacology	Somniferous / Narcotics– (Opium - Morphine, Heroine Drugs of dependence	<ol style="list-style-type: none"> 1. Classify alkaloids of opium. 2. Know the fatal dose and fatal period. Describe clinical features in acute and chronic poisoning. 3. Describe the differential diagnosis of opium coma. Know laboratory investigations and bedside test. Explain clinical management. 4. Explain autopsy findings Reproduce medico legal aspects Define drug dependence. 5. Differentiate between drug dependence and drug habituation. 6. Enlist drugs

			7. Describe criteria of drug dependence as per WHO criteria of dependence.
For3- Tox-017	Pharmacology	Inebriants – Ethyl Alcohol / Methanol,	<ol style="list-style-type: none"> 1. Define Alcohols 2. Describe different alcohol beverages with different alcohol concentrations. 3. Explain toxic kinetic of alcohols 4. Reproduce clinical features of acute ethyl alcohol poison. 5. Correlate different clinical features with different BAC. Outline clinical management of poisoning 6. Describe the laboratory investigation and samples to be sent to the chemical examiner. 7. Describe protocol of examination of a drunken person. 8. Describe autopsy findings. 9. Reproduce medico legal aspects. 10. Describe clinical features of alcoholism. Explain clinical features of methanol toxicity Describe autopsy findings 11. Reproduce medico legal aspects of methanol poisoning.
For3- Tox-018	Forensic Medicine	Asphyxiant Gases - Carbon Mono oxide, Hydrogen Sulphide, Carbon Dioxide	<ol style="list-style-type: none"> 1. Describe the sources of exposure of asphyxiant gases. 2. State the mechanism of action. Explain clinical features of poisoning. 3. Reproduce clinical management of cases of poisoning. 4. Enlist samples to be collected and sent to chemical examiner.

			<ol style="list-style-type: none"> 5. Outline autopsy features 6. Explain medico legal aspects of acute poisoning of asphyxiants gases.
For3- Tox-019	Forensic Medicine	<p>CNS Stimulant – Cocaine Amphetamine Methyl phenidate (Ritalin) Hallucinogens- LSD,MESCALI NE,PHEN CYCLIDINE Tricyclic antidepressants - Sheesha (Nicotine + Fruits & Herbal Flavors & Coal</p>	<ol style="list-style-type: none"> 1. Describe source of exposure Explain methods of inhalation. Reproduce clinical features 2. Know the diagnostic findings on X rays chest. Explain clinical management 3. Discuss autopsy findings 4. Outline medico legal aspects of acute poisoning.
For3- Tox-020	Forensic Medicine	<p>Hydrocarbons-- kerosene oil, Volatile substance abuse Glue sniffing Sniffing Huffed Bagged</p>	<ol style="list-style-type: none"> 1. Describe source of exposure Explain methods of inhalation. Reproduce clinical features 2. Know the diagnostic findings on x rays chest. 3. Explain clinical management Discuss autopsy findings 4. Outline medico legal aspects of acute poisoning
For3- Tox-021	Forensic Medicine	<p>Black stone Para phenylene diamine (PPD)</p>	<ol style="list-style-type: none"> 1. Describe source of exposure Reproduce clinical features Know the diagnostic findings Explain clinical management Discuss autopsy findings 2. Outline medico legal aspects of acute poisoning.

FORENSIC SEROLOGY

Code	Topic	Sub Topic	Learning Objectives
For3- FS-001	Forensic Medicine	Definition &medico-legal importance of Forensic Serology	<ol style="list-style-type: none"> 1. Define Forensic Serology 2. Describe the Medico-legal importance of Forensic Serology
For3- FS-002		Trace Evidence	<ol style="list-style-type: none"> 1. Define Trace Evidence Classify Trace Evidence 2. Describe Lockard's Exchange Principle
For3- FS-003		Scientific study of trace evidentiary material	Describe the protocol of scientific study (identification, collection, preservation, storage, labeling and transport to the concerned quarter) of trace evidentiary material.
For3- FS-004		Biological fluids	Enlist the medico-legal importance of different biological fluids & stains
For3- FS-005		chain of custody	Outline principles of chain of custody and its medico-legal significance
For3- FS-006	Pathology	Blood	Briefly describe the principles of chemical & physiochemical tests to determine the presence of blood in suspected stains Interpret the physical characteristics of a blood stain
			Describe the procedure of examination of blood stain comprising of physical, chemical, physiochemical & confirmatory tests
			Discuss the principle & importance of spectroscopic analysis of blood in the stain

			Briefly describe microscopic, Immunological & enzymological methods for species determination of blood stain
			Explain different blood group systems
			Briefly describe medico-legal importance of blood grouping
			Interpret the phenotype & genotype of different ABO blood groups
For3- FS-007	Forensic Medicine	Semen	Briefly describe the scheme for examination of Seminal stain including physical, chemical, microscopic & serological tests including DNA Analysis.
			Briefly describe the Medico-legal importance of seminal stain
For3- FS-008	Forensic Medicine	Hair	Briefly describe the physical, chemical, serological & microscopic examination of hair
			Compare & contrast human and animal hair & hair like Structures as fibers.
			Enlist the Medico-legal significance of hair
For3- FS-009	Forensic Medicine	Body Fluids	Enumerate the tests for determination of other body fluids like Milk, saliva, urine, fecal matter
			Briefly describe their medico-legal significance
For3- FS-010	Forensic Medicine	DNA	Explain the Structure of DNA.
			Describe DNA fingerprinting methods
			Outline the samples needed for DNA profiling, their collection, preservation, storage and dispatch to the analyst.

			Explain National DNA databank (CODIS).
			Discuss Ethical Issues relevant to DNA.

FORENSIC SCIENCES

Code	Topic	Sub Topic	Learning Objectives
For3-FSc-001	Forensic medicine	Principles and methods of crime scene investigation	<ol style="list-style-type: none"> 1. Describe search patterns of scene of crime. Photograph the area/object of interest from scene of crime. 2. Examine, collect, preserve and dispatch trace evidence and record his findings at scene of crime. Identify the stains of different biological fluids, collect, preserve, dispatch and record his findings 3. Explain and demonstrate screening, chemical and microscopic analysis of biological stains. 4. Describe forensic analysis of DNA.
For3-FSc-002		Examination of firearm and tool mark evidence	Describe the examination of firearm and tool mark evidence
For3-FSc-003		Examination of broken glass	Explain the examination of broken glass

8.3.2 Practical / Lab Work

LAW

Code	Topic	Sub Topic	Learning Objectives
For3-L-021	Forensic Medicine	Legal Terms and Procedures	Demonstrate legal procedures and its presentation in the courts

For3-L-022		Evidence	Demonstrate presentation of different stages of evidence in the court of law.
			Distinguish between different types of witness and its presentation in the court
For3-L-023		Dying deposition and declaration	Demonstrate the recording of dying deposition and dying declaration step wise.

GENERAL TOXICOLOGY

Code	Topic	Sub Topic	Learning Objectives
For3-Tox-022	Forensic Medicine	Poisoning	Assess a suspected patient of poisoning
			Collect, preserve & dispatch the routine viscera of a suspected poisoning case sent to chemical examiner
			Demonstrate the procedure of gastric lavage on a mannequin

SPECIAL TOXICOLOGY

Code	Topic	Sub Topic	Learning Objectives
For3-Tox-023	Forensic Medicine	Mineral acids- Sulfuric acid Nitric acid Hydrochloric acid Strong alkalis	<ol style="list-style-type: none"> 1. Identify corrosive poisons. 2. Describe identifying features. 3. Recognize Autopsy features of H₂SO₄ and HNO₃ Apply the relevant section of Qisas and Diyat act to the hurt caused by the poison
For3-Tox-024	Forensic Medicine	Organic acid – Oxalic acid, Carbolic acid, Hydrocyanic acid	<ol style="list-style-type: none"> 1. Identify organic acid corrosive poisons Describe identifying features. 2. Explain laboratory investigations Recognize autopsy findings.
For3-Tox-025	Forensic Medicine	Irritant Animal Poisons (Snakes-	<ol style="list-style-type: none"> 1. Label salient differentiating features of poisonous and non-snakes.

		Elapids Vipers Hydrophidate or sea-snakes	<ol style="list-style-type: none"> Identify snake bite wound. Apply the tourniquet above the site of bite of a patient.
For3- Tox-026	Forensic Medicine	Irritant Metallic poisons – (Inorganic metallic origin- Arsenic, Mercury, Lead, Copper	<ol style="list-style-type: none"> Identify poison. Describe identifying features. Identify features of chronic arsenic poisoning Identify chronic lead poisoning on x rays Identify chronic lead poisoning (basophilic stippling) on blood cell slide. Collect samples to be sent to the chemical examiner.
For3- Tox-027	Forensic Medicine	Agricultural poisons – Organophosphates, Carbamates Chlorinated Hydrocarbon, Endrin Paraquet Aluminum Phosphide	<ol style="list-style-type: none"> Diagnose a case of insecticide poisoning Explain laboratory investigations Manage a case of insecticide poisoning Recognize autopsy features Collect, preserve and dispatch the specimens to chemical examiner Perform bedside test for certain pesticides (Aluminium phosphide
For3- Tox-028	Forensic Medicine	Deliriant Poisons – Dhatura Canabis Sativa	<ol style="list-style-type: none"> Identify the poison Describe identifying features Diagnose a case of Deliriant poisoning Explain lab investigation Manage the case Recognize autopsy features Collect, preserve and dispatch the specimens to chemical examiner
For3- Tox-029	Forensic Medicine	Sedatives and Hypnotics – Barbiturates	<ol style="list-style-type: none"> Diagnose a case of sedatives / hypnotic's toxicity Explain lab investigation

			<ol style="list-style-type: none"> 2. Manage the case Recognize autopsy features 3. Collect, preserve and dispatch the specimens to chemical examiner
For3-Tox-030	Forensic Medicine	Somniferous / Narcotics– (Opium - Morphine, Heroine Drugs of dependence	<ol style="list-style-type: none"> 1. Identify the poison (Opium / Poppy capsule) Describe identifying features 2. Diagnose a case of narcotic poisoning Perform bedside test 3. Explain lab investigations Recognize autopsy features 4. Collect, preserve and dispatch the specimens to chemical examiner
For3-Tox-031	Forensic Medicine	Inebriants – Ethyl Alcohol / Methanol,	<ol style="list-style-type: none"> 1. Diagnose a case of Acute alcohol Toxicity (Ethanol / Methanol) 2. Explain lab investigations Manage the case 3. Conduct examination of a case of ethyl alcohol toxicity and certify findings with opinion 5. Collect appropriate samples Recognize autopsy features 6. Collect, preserve and dispatch the specimens to chemical examiner
For3-Tox-032	Forensic Medicine	Asphyxiant Gases - Carbon Mono oxide, Hydrogen Sulphide, Carbon Dioxide	<ol style="list-style-type: none"> 1. Diagnose a case of Asphyxiant gases Explain lab investigations 2. Manage the case Recognize autopsy features 3. Collect, preserve and dispatch the specimens to chemical examiner
For3-Tox-033	Forensic Medicine	CNS Stimulant – Cocaine Amphetamine Methyl phenidate	<ol style="list-style-type: none"> 1. Identify the poison 2. Describe identifying features Diagnose the case 3. Explain lab investigation Manage the

		(Ritalin) Hallucinogens- LSD, MESCALINE, PHEN CYCLIDINE Tricyclic antidepressants - Sheesha (Nicotine + Fruits & Herbal Flavors & Coal)	case Recognize autopsy features 4. Collect, preserve and dispatch the specimens to chemical examiner
For3- Tox-034	Forensic Medicine	Hydrocarbons-- kerosene oil - Volatile substance abuse Glue sniffing Sniffing Huffed Bagged	1. Identify the poison 2. Diagnose the case 3. Explain lab investigation 4. Manage the case Recognize autopsy features 5. Collect, preserve, and dispatch the specimens to the chemical examiner
For3- Tox-035	Forensic Medicine	Black stone Para phenylene diamine (PPD)	1. Identify the poison Diagnose the case Explain lab investigation Manage the case 2. Recognize autopsy features 3. Collect, preserve, and dispatch the specimens to the chemical examiner

FORENSIC SEROLOGY

Code	Topic	Sub Topic	Learning Objectives
For3- FS- 011	Forensic Medicine	Trace evidence	Categorize different trace evidence to Biological & Non-biological sources
For3- FS- 012	Forensic Medicine	The scientific study of trace	Identify, collect, preserve, label and dispatch trace evidentiary material to the

		evidentiary material	concerned quarters.
For3- FS-013	Forensic Medicine	Bloodstain	Interpret the physical characteristic of a suspected blood stain with naked eye & under UV lamp
For3- FS-014	Forensic Medicine	Cloth examination	Preserve & seal the clothes with suspected blood/seminal stain
For3- FS-015	Forensic Medicine	Blood stain	Perform Screening tests (Benzidine & Phenolphthalein/Kastle Mayer) on suspected blood stain
			Identify the Takayama (Haemochromogen) & Teichmann (Haemin) Crystals under the microscope
			Identify different absorption bands of hemoglobin & its derivatives with spectroscope
			Perform forward & reverse blood grouping techniques & interpret the results
For3- FS-016	Forensic Medicine	Semen	Differentiate various species (human, hen, goat and camel) with the help of microscopic examination of RBCs
			Identify & confirm the presence of semen with the help of microscopic examination
For3- FS-017	Forensic Medicine	Hair	Prepare the slide of hair & Differentiate Human & Animal Hair under the microscope
			Differentiate human/animal hair from cotton fiber, polyester fiber

9. CFRC for Block-9

Code	Subject	Task/Skill
CFRC3-063	Medicine	Formulate a diagnosis from patient findings
CFRC3-064	Medicine	Learn how to write SOAP notes
CFRC3-015	Medicine	Order common hematologic tests (e.g., CBC, blood typing, coagulation profile).
CFRC3-016	Medicine	Interpret basic hematologic lab results, including CBC parameters (e.g., hemoglobin, W B C count, platelets).
CFRC3-041	Pulmonology	Wheezing history
CFRC3-042	Pulmonology	Inspection of respiratory effort, cyanosis
CFRC3-043	Pulmonology	Palpation for chest expansion, tactile fremitus
CFRC3-044	Pulmonology	Percussion of the lungs
CFRC3-045	Pulmonology	Auscultation (breath, sounds, wheezing, crackles)
CFRC3-046	Pulmonology	Recognize obstructive vs restrictive patterns
CFRC3-047	Pulmonology	Perform history and physical examination, suggesting to a diagnosis of asthma
CFRC3-048	Pulmonology	Perform history and physical examination, suggesting to a diagnosis COPD
CFRC3-049	Pulmonology	Perform history and physical examination, suggesting to a diagnosis Pneumonia
CFRC3-050	Medicine	Focused history-taking for common presentations (respiratory infections, diabetes, diarrhea, UTI)
CFRC3-053	Medicine	Develop comprehensive care plans (biological, psychological, social factors)
CFRC3-058	Surgery	Able to scrub in for major and minor surgical procedures
CFRC3-059	Surgery	Assist in minor surgical procedures (Observed in OT)
CFRC3-060	Surgery	Manage patients pre and post operatively
CV2-M-010	Cardiology	Perform CVS examination on a patient
CV2-M-011	Cardiology	Interpret changes in ECG and correlate them with clinical conditions

CFRC3-068	Pediatrics	Take a basic pediatric history
CFRC3-069	Pediatrics	Knowledge of the EPI schedule
CFRC3-065	Gynae & Obs	Discuss calculation of LMP and EDD
CFRC3-066	Gynae & Obs	Take a basic antenatal history
CFRC3-067	Gynae & Obs	Take a gynecological history

10. PERL's for Block-9

CARDIOVASCULAR-II			
Topic	Sub Topic	Learning objectives	Proposed Portfolio Entry
Research	Research Methodology: Study designs	<ol style="list-style-type: none"> 1. Describe the different types of study designs in medical research. 2. Evaluate selecting an appropriate study design based on the identified research question. 3. Submit a short report outlining a research question and the selected study design, explaining why this design is chosen and how it addresses the research objectives. 	Evidence of submitting Research population selection and size calculation to Research Mentor.

RESPIRATORY-II			
Topic	Sub Topic	Learning objectives	Proposed Portfolio Entry
Research	Research Methodology: Population selection and	<ol style="list-style-type: none"> 1. Describe the principles of population selection and determining sample size in medical research 	Evidence of submitting Research population selection and size calculation to Research

	sample size	<ol style="list-style-type: none"> 2. Evaluate how these factors impact the validity and generalizability of research findings. 3. Select a population for a hypothetical research study and calculate an appropriate sample size, providing a rationale based on the research question and study design chosen earlier. 4. Submit a brief report detailing the population selection and sample size calculation for your planned study, including an explanation of the criteria for choosing the population and determining the sample size. 	Mentor.
Ethics	Ethical clinical trials, drug safety in trials	<ol style="list-style-type: none"> 1. Discuss the ethical considerations in clinical trials, including the importance of informed consent, patient safety, and drug safety throughout the trial process. 2. Discuss the importance of Clinical Trial 	Provide recommendations on how the trial could better ensure ethical compliance and drug safety.

		Registration for Clinical Trials.	
Leadership	Team Leadership	<ol style="list-style-type: none"> 1. Discuss the key qualities and skills required for effective team leadership in a healthcare setting, including communication, delegation, and conflict resolution, to foster a collaborative and efficient work environment. 2. Participate in a group project, take on the team leader role, and practice delegation, communication, and conflict resolution skills. Reflect on the challenges faced and strategies used to ensure team success 	As a team, create a simple poster or video presentation on how you managed team dynamics to achieve project goals. Focus on key takeaways and provide basic recommendations for effective team leadership in healthcare settings.

COMMUNITY MEDICINE & FAMILY HEALTH-I

Topic	Sub Topic	Learning objectives	Proposed Portfolio Entry
Ethics	Health Equity: Resource allocation	<ol style="list-style-type: none"> 1. Understand the ethical principles behind resource allocation in healthcare, particularly in promoting health equity, and how 	Create a basic plan to distribute a limited supply of healthcare resources (e.g., vaccines, beds, or medications) in a

		<p>2. Decisions about Resource distribution Impact vulnerable populations.</p>	<p>community clinic. Explain how you would ensure fair treatment for everyone, especially vulnerable patients, and briefly discuss the ethical reasons behind your choices.</p>
Leadership	Role Modelling via Mentoring Session VII	<p>1. Participate in a mentoring session where they will discuss their strengths and weaknesses with their mentor, receive feedback, and collaboratively create an action plan for personal and professional development</p>	<p>Submit a summary of your mentoring session, including feedback, areas Identified for improvement, and the action plan you developed with your mentor to enhance your professional growth.</p>
Research	Research Methodology: Study designs	<p>1. Describe the different types of study designs in medical research. 2. Evaluate selecting an appropriate study design based on the identified research question.</p>	<p>To be submitted in next module.</p>

11. Teaching & Learning Methodologies

➤ **Interactive Lectures**

Interactive lecturing involves an increased interchange between teachers, students, and the lecture content. The use of interactive lectures can promote active learning, heighten attention and motivation, give feedback to the teacher and the student, and increase satisfaction for both.

➤ **Small group discussions**

Small-group discussion is a student-centered methodology that allows students to actively involve and be partners in the teaching-learning process. Students interact with peers and instructors, discussing, and sharing ideas. They develop the ability to build consensus in a group.

➤ **Practical's**

Hands-on performance of skills in laboratory

➤ **Clinical Ward Rotation**

During clinical rotations, students learn history taking and physical examination, recognize common clinical presentations, and get introduced to basic diagnostic procedures and treatment planning. They also develop professional behavior and communication skills essential for patient care.

➤ **Case based Learning**

Case-based learning is a student-centered learning approach where students read and discuss complex situations and apply their knowledge to each situation. Students typically examine the case together as a team and address the problems within the realistic scenario to develop a reasonable conclusion.

➤ **Self-directed learning**

Self-directed learning is an instructional strategy where the students with guidance from the teacher decide what and how they will learn. It can be done individually or with group, learning, but the overall concept is that students take honor ship of their learning

12. Assessment Methodologies

Theory

1. MCQ's

A multiple-choice question (MCQ) is composed of two parts: a stem that identifies the question or problem, and a set of alternatives or possible answers that contain a key that is the best answer to the question, and several distractors that are plausible but incorrect answers to the question.

2. SEQ's

It is a type of assessment tool in which a question on a topic is given in test or examination requiring a written analysis and explanation usually of a specified length.

Practical

1. OSPE

“Objectively Structured Practical Examination.”, as a tool for the assessment of practical skills of undergraduate Medical Students.

2. OSCE

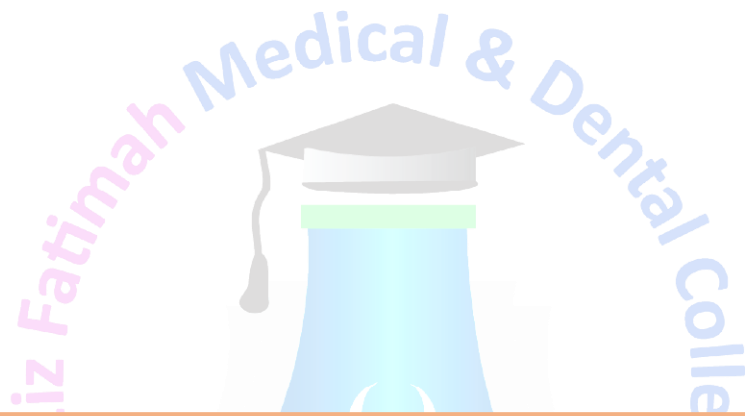
OSCE stands for “Objectively Structured Clinical Examination.” OSCEs are very helpful in medical education because they allow a student to practice and demonstrate clinical skills in a standardized medical scenario.

3. OSVE

OSVE stands for “Objectively Structured Viva Examination”. In the viva you have to answer questions and engage with your examiners.

4. EOR

End-of-Rotation (EOR) assessments are summative evaluations conducted at the conclusion of a clinical rotation or academic module. These assessments aim to measure the knowledge, skills, attitudes, and clinical competencies a student has acquired over the duration of the rotation.



ASSESSMENT POLICY AND TOS OF UHS

13. Assessment Policy (UHS)

Statutes

1. The third Professional MBBS Examination shall be held at the end of the third year.
2. Every candidate shall be required to study contents of Anatomy (including Histology), Physiology, Biochemistry, Behavioral Sciences, Community Medicine & Public Health, Pathology including microbiology, Pharmacology & Therapeutics, Ophthalmology, Otorhinolaryngology, Surgery, Medicine, Clinical skills and Professionalism, Ethics, Research and Leadership. The teaching and assessment shall be done in three modular blocks.
3. There will be three papers in the third professional examination:

Third Professional Exam:

- a) Paper 1 will be based on contents of Block 7;
- b) Paper 2 will be based on contents of Block 8;
- c) Paper 3 will be based on contents of Block 9;
4. Each paper will comprise of two components “Written” and “Oral/Practical/Clinical” examinations.
5. The Written and ‘Oral/Practical/Clinical’ examination in each paper will carry 175 marks each, making the total marks of 350 for each of the papers 7,8, and 9 (inclusive of Internal Assessment).
6. Total marks for the Third Professional Examinations shall be 1050.
7. Major content areas of the third professional years shall be from:
 - a) Pharmacology including applied/clinical Pharmacology;
 - b) Pathology including microbiology;
 - c) Community Medicine and Public Health
 - d) Forensic Medicine.
8. The Applied/Clinical content shall be based on clinical correlations.
9. Integrated clinical content areas include General Medicine, General Surgery, Community Medicine & Public Health, Pathology, Pharmacology & Therapeutics, Clinical Rotations (C- FRC– III), PERLs- III, Expository writing, and IT.

Written Examination

- a) The written component of Papers 7, 8, and 9 will consist of 'One-best- type' Multiple Choice Questions (MCQ) and Structured Essay Questions (SEQ) in a ratio of 65:35 %.
- b) Each MCQ will have five options (one best response and four distractors) and will carry one (01) mark.
- c) There will be no negative marking.
- d) Each SEQ will be a structured question with five (05) marks each.
- e) SEQ's will only be based on the major content areas of the year.
- f) There will be total of 90 MCQs and 10 SEQs in every written paper in Papers 7, 8, and 9.
- g) The duration of each written paper will be 190 minutes (03 hours and 10 minutes).
- h) The section 'B' of the MCQs and the section 'B' of the SEQs must be passed independently also to be declared as 'pass' in the theory exam.
- i) The MCQ section will be 90 minutes duration and the SEQ section of 100 minutes.

Oral/Practical/Clinical Examination

- a) The 'Oral/Practical/Clinical' component of each Papers 7, 8, and 9 will consist of a total of fifteen (15) OSPE/OSCE/OSVE stations in each 'Oral/Practical/Clinical' examination.
- b) There will be eleven (11) Observed OSPE/OSCE (Objective Structured Practical Examination Objective Structured Clinical Examination) stations from major subject areas. Each OSPE/OSCE station will have the practical component and an evaluation of the underlying principle relevant to that practical with a component of applied knowledge.
- c) There will be one (01) Observed OSCE (Objective Structured Clinical Examination) station, based on PERLs-3 & ExposITory-3 in each 'Oral/Practical/Clinical' examination.
- d) There will be three (03) Observed interactive OSVE (Objective Structured Viva Examination) from major subject areas. Each OSVE station will have a structured viva, to assess a practical component along with evaluation of the underlying principle relevant to that practical with a component of applied/practical knowledge and related clinical application.
- e) OSPE/OSCE station from the major subject areas will carry eight (08) marks.
- f) The OSCE station of PERLs-3 & ExposITory-3 will carry ten (10) marks.

- g) Each OSVE station will carry fourteen (14) marks
- h) The duration of each “Oral/Practical/Clinical” examination will be 120 minutes (2 hours).
- i) Time for each OSPE, OSCE and OSVE station will be eight (08) minutes.
10. Every candidate shall take the examination in the following Blocks (Modules) in the third Professional MBBS Examinations.

3 rd Year MBBS		
	Block 7	Marks
A	(Foundation-II + Hematopoietic, Immunity & Implant + General Pharmacology + Forensic Medicine & Toxicology- I)	350
B	Block 8 (Musculoskeletal & Locomotion-II + Infectious Diseases + Neoplasia + Forensic Medicine & Toxicology - II)	350
C	Block 9 (Cardiovascular-II + Respiratory II + Community Medicine & Public Health + Family Medicine I + Forensic Medicine & Toxicology - III)	350
	Total	1050

A. Block 7 (Foundation-II + Hematopoietic, Immunity & Implant + General Pharmacology + Forensic Medicine-I)

The examination in Block 7 shall be as follows: -

- a) One written paper of 140 marks having two parts:
- i. Part I shall have ninety Multiple Choice Questions (MCQs) of total 90 marks (01 mark for each MCQ) and the time allotted shall be 90 minutes. There will be no negative marking.
 - ii. Part II shall have ten Structured Essay Questions (SEQs) of total 50 marks (05 marks for each SEQ) and the time allotted shall be 110 minutes.
- b) “Oral/Practical/Clinical” examination shall have 140 marks in total.

- c) The continuous internal assessment through 'Block Examination' and other parameters specified, conducted by the college of enrollment shall carry 70 marks, i.e., 20% of the total allocated marks (350) for the block. The score will be equally distributed to the Written and 'Oral/Practical/Clinical' Examinations.

B. Block 8 (Musculoskeletal & Locomotion--II + Infectious Diseases + Neoplasia+ Forensic Medicine - II)

The examination in Block 8 shall be as follows: -

- a) One written paper of 140 marks having two parts:
- i. Part I shall have ninety Multiple Choice Questions (MCQs) of total 90 marks (01 mark for each MCQ) and the time allotted shall be 90 minutes. There will be no negative marking.
 - ii. Part II shall have ten Structured Essay Questions (SEQs) of total 50 marks (05 marks for each SEQ) and the time allotted shall be 110 minutes.
- b) "Oral/Practical/Clinical" examination shall have 140 marks in total.
- c) The continuous internal assessment through 'Block Examination' and other parameters specified, conducted by the college of enrollment shall carry 70 marks, i.e., 20% of the total allocated marks (350) for the block. The score will be equally distributed to the "Written" and "Oral/Practical/Clinical" Examinations.

C. Block 9 (Cardiovascular -II + Respiratory II + Community Medicine & Public Health + Family Medicine I + Forensic Medicine - II)

The examination in Block 9 shall be as follows: -

- a) One written paper of 140 marks having two parts:
- i. Part I shall have ninety Multiple Choice Questions (MCQs) of total 90 marks (01 mark for each MCQ) and the time allotted shall be 90 minutes. There will be no negative marking.
 - ii. Part II shall have ten Structured Essay Questions (SEQs) of total 50 marks (05 marks for each SEQ) and the time allotted shall be 110 minutes.
- b) "Oral/Practical/Clinical" examination shall have 140 marks in total.
- c) The continuous internal assessment through 'Block Examination' and other parameters specified, conducted by the college of enrollment shall carry 70 marks, i.e., 20% of the total allocated marks (350) for the block. The score will be equally distributed to the "Written" and "Oral/Practical/Clinical" Examinations.

11. The marks distribution in each subject is given in Table 1

Table 1

YEAR-3						
Subject	Theory		Practical			Total
BLOCK 7 Modules (Foundation-II + Hematopoietic, Immunity & Implant + General & Clinical Pharmacology + Forensic Medicine & Toxicology-I)	Part I MCQs (90)	90 Marks	Practical /Clinical Examination	11 OSPE	Marks	350
					88	
	Part II SEQs (10)	50 Marks		01 OSCE	10	
				03 OSVE	42	
	Internal Assessment 10%	35 Marks	Internal Assessment 10%	35 Marks		
	Total	175	Total	175		
BLOCK 8 Modules (Neoplasia + Infectious Diseases + Musculoskeletal & Locomotion-II + Forensic Medicine & Toxicology-II)	Part I MCQs (90)	90 Marks	Practical /Clinical Examination	11 OSPE	Marks	350
					88	
	Part II SEQs (10)	50 Marks		01 OSCE	10	
				03 OSVE	42	
	Internal Assessment 10%	35 Marks	Internal Assessment 10%	35 Marks		
	Total	175	Total	175		
BLOCK 9 Modules (Cardiovascular -II + Respiratory II + Community Medicine & Public Health + Family Medicine I + Forensic Medicine & Toxicology- III)	Part I MCQs (90)	90 Marks	Practical /Clinical Examination	11 OSPE	Marks	350
					88	
	Part II SEQs (10)	50 Marks		01 OSCE	10	
				03 OSVE	42	
	Internal Assessment 10%	35 Marks	Internal Assessment 10%	35 Marks		
	Total	175	Total	175		
Total Marks:						1050

12. No grace marks shall be allowed in any examination or practical under any guise or name.
13. At least 50% MCQs & 50% SEQs shall be based on applied/clinical/case scenario to assess high order thinking in the papers set for the students of Third Professional MBBS Examinations.



14. Exam Regulations by UHS

Regulations

1. Professional examination shall be open to any student who: -
 - a) Has been enrolled/registered and completed one academic year preceding the concerned professional examination in a constituent/affiliated college of the University.
 - b) Has his/her name submitted to the Controller of Examinations, for the purpose of examination, by the Principal of the college in which he / she is enrolled & is eligible as per all prerequisites of the examination?
 - c) has his/her marks of internal assessment in all the Blocks sent to the Controller of Examinations by the Principal of the college along with the admission form.
 - d) Produces the following certificates duly verified by the principal of his / her college:
 - i. Of good character;
 - ii. Of having attended not less than cumulative 85% of the full course of lectures delivered and practical conducted in the academic session, while maintaining 75 % attendance in each block,
 - iii. Certificate of having appeared at the Block Examinations conducted by the college of enrolment with at least 55 % cumulative percentage in aggregate of blocks 7,8, and 9 for the third year;
 - iv. Candidates falling short of block/s attendance shall not be admitted to the annual examination unless they take remedial classes to complete the requirement.
2. The minimum number of marks required to pass the professional examination for each paper shall be fifty-five percent (55%) in Written and fifty-five percent (55%) in the 'Oral/Practical/Clinical' examinations and fifty-five percent (55%) in aggregate, independently and concomitantly, at one and the same time.
3. Candidates who secure eighty five percent (85%) or above marks in any of the papers shall be declared to have passed "with distinction" in that Block, subject to having at least 80 % marks in the written component of that paper, concomitantly. However, no candidate shall be declared to have passed "with distinction" in any paper, who does not pass in all the papers of the Professional Examination as a whole at one and the same time,
4. A candidate failing in one or more paper of the annual examination shall be provisionally allowed to join the next professional class till the commencement of supplementary

examinations. Under no circumstances, a candidate shall be promoted to the next professional class till he / she has passed all the papers in the preceding professional examination.

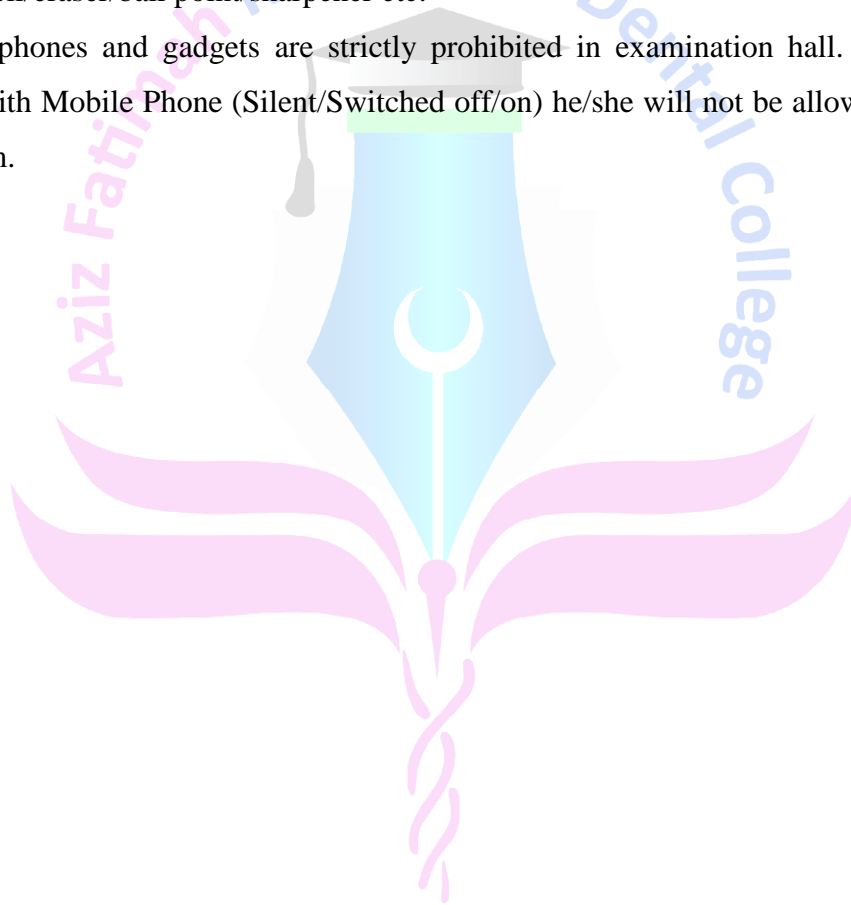
5. If a student appears in the supplementary examination for the first time as he/she did not appear in the annual examination because of any reason and fails in any paper in the Supplementary Examination, he/she will be detained in the same class and will not be promoted to next class.
6. The colleges may arrange remedial classes and one re-sit for each block examination after approval from the Competent Authority.
7. The remedial classes and re-sit examination can be conducted during summer vacation/weekends, before or during preparatory leave, for the concerned professional examination, subject to the following conditions:
 - a) At the completion of each block, the principals of the colleges shall submit a detailed report to the university, including cases of students with short attendance, poor performance/absence in the block examination along with the reasons and evidence for the same, proposed schedule for remedial classes and re-sit examination.
 - b) Competent Authority UHS will have the cause and the submitted evidence evaluated and documented, before permitting the colleges to arrange remedial classes and re-sit examination at the concerned block. No college is allowed to conduct remedial classes or re-sit examination without prior approval of the competent authority.
 - c) The students can appear in remedial classes / re-sit of a block examination, however, conduct of remedial classes shall be permitted only in the cases of students, who shall have attended at least 50 % of total attendance of the concerned block in the first instance.
 - i. However, in special circumstances a student can be allowed to attend the 'remedial classes' for a certain block, with the permission of the Competent Authority, to complete his/her requirement of attendance, even if the block attendance is less than 50%. In such cases, the evidence of reason will be provided by the college after the Principal has endorsed the case.
 - ii. The students who have attained a cumulative attendance of 85% directly or with remedial classes, can appear in the 'annual' professional examination.
 - iii. The valid reasons for short attendance in a block or absence from a block examination may include major illness/accident/surgery of the student or sickness / death of an immediate relative/being afflicted by a natural/man- made

calamity or disaster or detained students (missed the first block of the year) or UHS permitted late admission students

8. The application for admission of each candidate for examination shall be submitted to the Controller of Examination, through the Principal of the College, in a prescribed format, as per notified schedule, accompanied by the prescribed fee.
9. The marks of internal assessment through block/s examination and attendance shall be submitted to Controller of Examinations three times, within two weeks of completion of each block examination.
10. At the end of each block, the colleges are required to submit question papers and keys for the block examination, internal assessment marks and attendance record to the Department of Examinations UHS. Further, parent-teacher meetings shall be arranged by the colleges after every block examination to share feedback on the progress of students with their parents. Minutes of parent teacher meetings shall be submitted to the Department of Medical Education UHS.
11. It is emphasized that fresh internal assessment or a revision of assessment for supplementary examination shall not be permissible. However, a revised internal assessment for the detained students can be submitted. The internal assessment award in a particular year will not be decreased subsequently detrimental to the detainee candidate. A proper record of the continuous internal assessment shall be maintained by the concerned department/s in the colleges.
12. The candidates shall pay their fee through the Principal of their respective Colleges who shall forward a bank draft / pay order / crossed cheque in favor of Treasurer, University of Health Sciences Lahore, along with their Admission Forms.
13. Only one annual and one supplementary of First, Second & Third Professional MBBS Examinations shall be allowed in a particular academic session. In exceptional situations, i.e., national calamities, war or loss of solved answer books in case of accident, special examination may be arranged after having observed due process of law. This will require permission of relevant authorities, i.e., Syndicate and Board of Governors.
14. The internal assessment for third year will be sent according to the following scheme:

15. Examination Rules AFMDC

- Students must report to examination hall/ venue at least 30 minutes before the exam.
- Exam will start sharp at time.
- Late comers arriving at the examination hall more than 15 minutes after the start of the paper will not be allowed to enter the examination hall.
- All students should wear Lab coats before appearing in the exam.
- Students are not allowed to take into the examination hall textbooks, notes or manuscript of any kind.
- Students must bring the necessary stationary items for exam with them e.g. pen/pencil/eraser/ball point/sharpener etc.
- Mobile phones and gadgets are strictly prohibited in examination hall. If any student found with Mobile Phone (Silent/Switched off/on) he/she will not be allowed to continue the exam.



16. Internal Assessment Policy (UHS)

Internal Assessment (Theory)			
Sr #	Scoring Parameter	Marks out of 20%	Marks distribution
1	Attendance in Lectures	85-90%=1%, > 90%=2%	85-90%= 01 mark > 90%=02 marks
		Remedial classes – re-sit examination allowed only after case endorsed and submitted by the college Principal and approval given by the Competent Authority. However, no marks given	
		Remedial classes – re-sit exam allowed only in genuine cases after approval from Competent Authority. However, no marks given	
2	Block Examination	15%	27
3	Continuous Internal Assessment/Class Quiz/Class participation/ Professional Behaviors/ Ethical practices/ Leadership traits/ Module Exam Discipline/Punctuality	3%	06

Internal Assessment (Practical & Behavioral)			
Sr #	Scoring Parameter	Marks out of 20%	Marks distribution
1	Attendance in Practical & Rotations	85-90%=1%, > 90%=2%	85-90%= 01 mark > 90%=02 marks
		Remedial classes – re-sit examination allowed only after case endorsed and submitted by	

		the college Principal and approval given by the Competent Authority. However, no marks given	
		Remedial classes – re-sit exam allowed only in genuine cases after approval from Competent Authority. However, no marks given	
2	Block Examination (OSPE/OSCE/OSVE)	13%	23
3	CFRC Log Book / PERLs Portfolio	02%	06
4	Ward / Clinical / Bedside assessment based on the clinical rotation / DOPS	02%	04

17. Table of Specification (TOS)

MBBS 3rd Professional							
Block-9							
Subject	Written Exam			Oral/Practical/Clinical Exam			
	MCQ (1 mark)	SEQ (5 mark each)	Marks	OSPE /OSCE (8 marks each observed)	OSCE (10 marks each observed)	OSVE (14 marks each observed)	Marks
Pharmacology	09	02	19	02	-	01	30
Pathology	12	02	22	02	-	-	16
Family Medicine	05	-	05	-	-	-	-
Community Medicine	27	03	42	03	-	01	38
Surgery	10	01	15	-	-	-	-
Medicine	10	01	15	01	-	-	08
Forensic	15	01	20	02	-	01	30
Behavioral	02	-	02	-	-	-	-
Patient Safety	-	-	-	-	-	-	-
CFRC	-	-	-	01	-	-	08
PERLs + Expository	-	-	-	-	01	-	10
Total	90	10x5=50	140	11 stations x 08 = 88	01 stations x 10 = 10	03 stations x 14=42	140

18. Frame work of Block 9 3rd Year MBBS Timetable 2024-25

DAY	1	2	3		4	5	
	08:00 - 09:00	09:00 - 10:00	10:00 - 11:30		11:30 - 12:00	12:00 - 02:00	
Monday	Community Medicine Lecture	Pathology Lecture	Practical		Break/ Transportation Time	Ward	
Tuesday	PERL's Lecture	Pathology Lecture	Practical			Ward	
Wednesday	Pathology Lecture	Forensic Medicine Lecture	Practical			Ward	
DAY	1	2	3	4	5	6	7
	08:00 - 09:00	09:00 - 10:00	10:00 - 11:00	11:00 - 11:30	11:30 - 12:30	12:30 - 01:00	01:00 - 02:00
Thursday	Cardiology Lecture	Pharmacology Lecture	Pulmonology Lecture	SDL	Community Medicine Lecture	Break/Namaz Break	General Medicine Lecture
DAY	1	2	3	4		5	6
	08:00 - 09:00	09:00 - 10:00	10:00 - 11:00	11:00 - 12:00		12:00 - 01:00	01:00 - 02:00
Friday	BS Lecture	Forensic Medicine Lecture	Pathology Lecture	Community Medicine Lecture		Pharmacology Lecture	Jummah Prayers
DAY	1	2	3	4	5	6	7
	08:00 - 09:00	09:00 - 10:00	10:00 - 11:00	11:00 - 11:30	11:30 - 12:30	12:30 - 01:00	01:00 - 02:00
Saturday	Pharmacology Lecture	General Surgery Lecture	Community Medicine Lecture	SDL	Forensic Medicine Lecture	Break/Namaz Break	PERL's Lecture

19. Clinical Ward Rotation of 3rd Year MBBS 2024-25

Group Wise Distribution of 3rd Year MBBS for Ward Rotation for Session 2024-2025

Groups	Sub - Groups	
Group A	Group A1	Group A2
21064, 21066, 21067, 21104	21064, 21066	21067, 21104
22001 - 22036	22001 - 22018	22019 - 22036
Group B	Group B1	Group B2
21105, 21139, 21141, 21152	21105, 21139	21141, 21152
22037 - 22073	22037 - 22055	22056 - 22073
Group C	Group C1	Group C2
22074 - 22111	22074 - 22092	22093 - 22111
Group D	Group D1	Group D2
22112 - 22150	22112 - 22130	22131 - 22150

Note: No change in any group is acceptable. Strict Compliance is required.

3rd Year MBBS Ward Rotation

Clinical Rotation	Morning	Credit Hours
Rotation 1 (Medicine)	2 Weeks	6+6=12 Hours
Rotation 2 (Gynae & Obs/Pediatrics)	2 Weeks (1 week in each rotation)	6+6=12 Hours (6 Hours in each specialty)
Rotation 3 (Pulmonology/Cardiology)	2 Weeks (1 week in each rotation)	6+6=12 Hours (6 Hours in each specialty)
Rotation 4 (Surgery)	2 Weeks	6+6=12 Hours

Note: 3rd Year MBBS will attend clinical wards for 3 days per week (Monday - Wednesday) from 12:00 pm - 02:00 pm.

Group Wise Rotation 3rd Year MBBS

Rotations	Medicine		Group 1 Specialties		Group 2 Specialties		Surgery	
	Medical Unit 1	Medical Unit II	Pulmonology	Cardiology	Pediatrics	Gynae & obs	Surgical Unit I	Surgical Unit II
Rotations 1	A1	A2	B1 (1st week) B2 (2nd Week)	B2 (1st week) B1 (2nd Week)	C1 (1st week) C2 (2nd Week)	C2 (1st week) C1 (2nd Week)	D1	D2
Rotations 2	D1	D2	A1 (1st week) A2 (2nd Week)	A2 (1st week) A1 (2nd Week)	B1 (1st week) B2 (2nd Week)	B2 (1st week) B1 (2nd Week)	C1	C2
Rotations 3	C1	C2	D1 (1st week) D2 (2nd Week)	D2 (1st week) D1 (2nd Week)	A1 (1st week) A2 (2nd Week)	A2 (1st week) A1 (2nd Week)	B1	B2
Rotations 4	B1	B2	C1 (1st week) C2 (2nd Week)	C2 (1st week) C1 (2nd Week)	D1 (1st week) D2 (2nd Week)	D2 (1st week) D1 (2nd Week)	A1	A2

Clinical Ward Rotation schedule of BLOCK 9 (3rd Year MBBS) Session 2024-25

<u>Clinical Ward Rotation</u>	
1st Rotation	29th September - 4th October 2025 (1st Week) 6th October - 11th October 2025 (2nd Week)
2nd Rotation	13th October - 18th October 2025 (1st Week) 20th October - 25th October 2025 (2nd Week)
3rd Rotation	27th October - 1st November 2025 (1st Week) 3rd November - 8th November 2025 (2nd Week)
4th Rotation	10th November - 15th November 2025 (1st Week) 17th November - 22nd November 2025 (2nd Week)

Department wise Competencies of Block 9

Subjects	CFRC3	Ward rotations
Medicine	General Medicine	
	CFRC3-063 Formulate a diagnosis from patient findings	<ul style="list-style-type: none"> • CV2-M-009 • Take history specific to CVS • Perform GPE to CVS to observe signs of cyanosis, pallor, edema, hyperlipemia and clubbing • Palpate peripheral pulses, observe signs of raised JVP • Measure blood pressure
	CFRC3-064 Learn how to write SOAP notes	
	CFRC3-015 Order common hematologic tests (e.g., CBC, blood typing, coagulation profile).	
	CFRC3-016 Interpret basic hematologic lab results, including CBC parameters (e.g., Hemoglobin, W B C count, platelets).	
	CFRC3-050	

	<p>Focused history-taking for common presentations (respiratory infections, diabetes, diarrhea, UTI) CFRC3-053</p> <p>Develop comprehensive care plans (biological, psychological, social factors)</p>	
Pulmonology	<p>CFRC3-041 Wheezing history CFRC3-042 Inspection of respiratory effort, cyanosis CFRC3-043 Palpation for chest expansion, tactile fremitus CFRC3-044 Percussion of the lungs CFRC3-045 Auscultation (breath, sounds, wheezing, crackles) CFRC3-046 Recognize obstructive vs restrictive patterns CFRC3-047 Perform history and physical examination, suggesting to a diagnosis of asthma CFRC3-048 Perform history and physical examination, suggesting to a diagnosis COPD CFRC3-049 Perform history and physical examination, suggesting to a diagnosis Pneumonia</p>	<ul style="list-style-type: none"> • 1 Use of Devices for Inhaled Medication: Types of Inhalation Devices (Metered-dose inhalers). • Explain to a patient how to use an inhaler correctly, including spacers, and check that their technique is correct. • Indications for Oxygen Therapy Oxygen Delivery Methods Monitoring Oxygen Saturation • Prescribe and administer oxygen safely using a delivery method appropriate for the patient's needs and monitor and adjust oxygen as needed. Knows the exact volume given per minute. • Common Findings of Pneumothorax, pleural effusion, lung consolidation, fractures • Students should be able to identify rib fractures, hemothorax, pneumothorax, free air under diaphragm, pelvic fractures. • Define Mantoux test • Enumerate the indications and contraindications • Describe the procedure and interpretation of results.
Surgery		<ul style="list-style-type: none"> • Perform examination of an ischemic

	<p>CFRC3-058 Able to scrub in for major and minor surgical procedures</p> <p>CFRC3-059 Assist in minor surgical procedures (Observed in OT)</p> <p>(CFRC3-60) Manage patients pre and post operatively</p>	<p>limb</p> <ul style="list-style-type: none"> • Clinical Presentation, Management Strategies & Complications <p>> Students should be able to identify and differentiate between types of pneumothoraxes (primary, secondary, and tension pneumothorax) through clinical assessment and imaging techniques.</p> <p>Management & Complications</p> <p>> Should be able to perform risk assessments using validated scoring systems (e.g., Wells criteria).</p> <p>> Interpret imaging findings to differentiate pulmonary embolism from other respiratory conditions.</p> <ul style="list-style-type: none"> • ABCDE approach in trauma settings <p>> Students should be able to assess and prioritize the management of thoracic trauma by identifying key injuries (such as pneumothorax, hemothorax, rib fractures, and flail chest)</p> <p>> Students should be able to demonstrate appropriate interventions (including airway management and fluid resuscitation).</p> <p>Airway Management & Resuscitation</p>
Cardiology	<p>(CV2-M-010) Interpret changes in ECG and correlate them with clinical conditions</p> <p>(CV2-M-011) Perform CVS examination on a patient</p>	
Pediatrics	<p>CFRC3-068 Take a basic pediatric history</p> <p>CFRC3-069 Knowledge of the EPI schedule</p>	<ul style="list-style-type: none"> • Students should be able to: <ol style="list-style-type: none"> 1) Identify the anatomical landmarks of the pediatric patient for pleural tap. 2) Perform the pleural tap procedure on simulation in a skill lab. 3) Counsel the attendants on the indication, procedure, and contraindication of the pleural tap

Gynae & Obs.	CFRC3-065 Discuss calculation of LMP and EDD CFRC3-066 Take a basic antenatal history CFRC3-067 Take a gynecological history	
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RESOURCE BOOKS



21. Learning Resources

Anatomy	<ul style="list-style-type: none"> • Snell’s Clinical Anatomy 10th ed. • Langman’s Medical Embryology 12th ed • Medical Histology by Laiq Hussain Siddiqui 8th edition. • General Anatomy by Laiq Hussain Siddiqui 6th edition.
Biochemistry	<ul style="list-style-type: none"> • Harpers illustrated Biochemistry (latest edition). Rodwell.V.W MCGrawHill publishers. • Lippincott illustrated Review (latest edition). Kluwer.W. • Essentials of Medical Biochemistry vol 1&2 by Mushtaq Ahmed
Pathology	<ul style="list-style-type: none"> • Vinary Kumar, Abul K. Abbas and Nelson Fausto Robbins and Cotran, Pathologic basis of disease. WB Saunders. • Robbins and Cotran Pathological Basis of Disease. Kumar, V., Abbas, A. and Aster, J. Latest Edition • Richard Mitchall, Vinary Kumar, Abul K. Abbas and Nelson Fausto Robbins and Cotran, Pocket Companion to Pathologic basis of diseases, Saunder Harcourt. • Walter and Israel. General Pathology. Churchill Livingstone. • Robbins & Kumar, Medical Microbiology and Immunology Levinson.
General Medicine	<ul style="list-style-type: none"> • Principles and Practice of Medicine by Davidson (latest edition) • Clinical Medicine by Parveen J Kumar & Michael Clark • Oxford Handbook of Medicine • Macleod's Clinical Examination book • Medicine and Toxicology by C.K. Parikh • Hutchison's Clinical Methods by Michael Swash. 21st edition
Pharmacology And Therapeutics	<ul style="list-style-type: none"> • Katzung and Trevor’s Pharmacology: Examination and Board Review- 15th Edition • Basic and Clinical Pharmacology by Bertram G Katzung (case scenarios only) - 16th Edition- • Current Medical Diagnosis and Treatment- reference book – Edition-2024 • Basic and Clinical Pharmacology by Bertram G Katzung (case

	<p>scenarios only) - 15th Edition</p> <ul style="list-style-type: none"> • Basic and Clinical Pharmacology by Katzung, McGraw-Hill. 16th Edition • Pharmacology by Champe and Harvey, Lippincott Williams & Wilkins 8th Edition. • Katzung Basic and Clinical pharmacology, Lippincott Illustrated reviews. • Clinical Pathology Interpretations by A. H. Nagi
Behavioural Sciences	<ul style="list-style-type: none"> • Handbook of Behavioural Sciences by Prof. Mowadat H.Rana, 3rd Edition • Medical and Psychosocial aspects of chronic illness and disability 6th edition by Donna R.Falvo and Beverly E.Holland, • Integrating behavioral sciences in healthcare, Asma Humayun, 2003, 1st edition
Community medicine	<ul style="list-style-type: none"> • Parks Textbook of Preventive and Social Medicine. K. Park • Public Health and Community Medicine by Ilyas Ansari • MSDS manual of Government of Punjab • Text book of Community Medicine by Park J E. Latest Edition
Surgery	<ul style="list-style-type: none"> • Bailey & Love's Short Practice of Surgery (latest edition) • Browse's Introduction to the Symptoms & Signs of Surgical Disease 4th Edition • Bailey & Love Short Practice of Surgery, Clinical Surgery pearls by Dayananda Babu RACS for Surgical Audits.
Patient Safety	<ul style="list-style-type: none"> • Patient Safety Curriculum Guide: Multi Professional Guide
Microbiology	<ul style="list-style-type: none"> • Levinson's review of Microbiology • Medical Microbiology and Immunology by Levinson and Jawetz,
Pediatrics Medicine	<ul style="list-style-type: none"> • Nelson Textbook of Pediatrics • Basis of Pediatrics by Pervez Akbar Khan
Gynecology	<ul style="list-style-type: none"> • Gynecology by Ten Teachers
Infection Control	<ul style="list-style-type: none"> • National Guidelines Infection Prevention and control, National Institute of Health Pakistan

Biosafety	<ul style="list-style-type: none"> • Biosafety in Microbiological and Biomedical Laboratories, 6th Edition (CDC, USA) • WHO Laboratory Biosafety Manual, Fourth Edition, And Associated Monographs • WHO safe management of wastes from healthcare facilities chapter 7 -8 page 77-99, 105-125)
Family medicine	<ul style="list-style-type: none"> • Oxford Handbook of General Practice, 5th Edition
Orthopedics	<ul style="list-style-type: none"> • Apley and Solomon's System of Orthopaedics and Trauma by Ashley Blom (Editor)
Rheumatology	<ul style="list-style-type: none"> • Davidson's Principles and Practice of Medicine • Clinical Medicine by Parveen J Kumar & Michael Clark • Hutchison's Clinical Methods by Michael Swash
Radiology	<ul style="list-style-type: none"> • Aids to Radiological Differential Diagnosis by Chapman S. and Nakielny R. 4th edition. Elsevier Science Limited; 2003
Forensic Medicine	<ul style="list-style-type: none"> • Knight's Forensic Pathology by Barnard Knight 3rd edition • G. Principles and Practice of Forensic Medicine by Prof. NasibR. Awan, 2nd edition • Forensic DNA Typing – 2nd Edition, Author: John M. Butler • Parikh's Text book of Medical Jurisprudence, Forensic Medicine and Toxicology by C.K. Parikh 6th Ed., CBS Publisher. • Gun Shot Wounds 2nd edition by V.J.Deimaio • Knight B. Simpson's Forensic Medicine. • Knight and Pekka. Principles of Forensic Medicine
Forensic Pathology	<ul style="list-style-type: none"> • Forensic pathology 2nd edition by V.J.Deimaio CRC press Boca Raton London New York Washington DC
Toxicology	<ul style="list-style-type: none"> • Principles of clinical toxicology 3rd edition Thomas. Gossel CRC press Taylor and Francis group
Forensic Sciences	<ul style="list-style-type: none"> • Fundamentals of Forensic Science- 3rd Edition: Author: Max M Houck, Jay A. Siegel • Text Book of forensic medicine and toxicology Principles and Practice 5th edition by Krishan Vig
Biomedical ethics	<ul style="list-style-type: none"> • Principles of Biomedical ethics, 8th edition by Tom. L.

	Beauchamp, James F. Childress.
Evidence Based Medicine	<ul style="list-style-type: none"> • Databases for the latest articles/manuscripts • Clinical Practice Guidelines- local and international - (within last 3 years) • Books (Latest edition-within last 5 years)
Pediatrics	<ul style="list-style-type: none"> • Nelson's Book of Pediatric 22 edition Illustrated book of Pediatrics, Pervaiz Akbar textbook peds medicine
Islamiyat	<ul style="list-style-type: none"> • Standard Islamiyat (compulsory) for B.A, BSc, MA, MSc, MBBS by Prof M Sharif Islahi • Ilmi Islamiyat (compulsory) for BA, BSc & equivalent.

