



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



Block 9

Study Guide 2025

3rd Year MBBS

ISLAM MEDICAL COLLEGE

Sialkot–Pakistan

Block-9

CARIOVASCULAR =II

RESPIRATORY = II

COMMUNITY MEDICINE & FAMILY

HEALTH -I

FORENSIC MEDICINE & TOXICOLOGY -III

STUDY GUIDE

BLOCK LEAD DETAILS

Hello, I am Dr. Gul Maria working as a Professor in the Department of Forensic Medicine & toxicology at Islam Medical College, Sialkot and now acting as a Block-9 Lead. I completed my MBBS from Baqai Medical University in 2004 and DMJ Forensic Medicine in 2016 from university of health sciences, Lahore. You can come to meet me in Forensic Medicine Department, Academic Block 1 from 08:00 –15:00 hours on weekdays. You can also contact me freely on my email dr.mariagul786@gmail.com

MODULE OVERVIEW

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.

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

RESPIRATORY

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.

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.

COMMUNITY MEDICINE & FAMILY HEALTH-I

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.

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.

FORENSIC MEDICINE & TOXICOLOGY -III

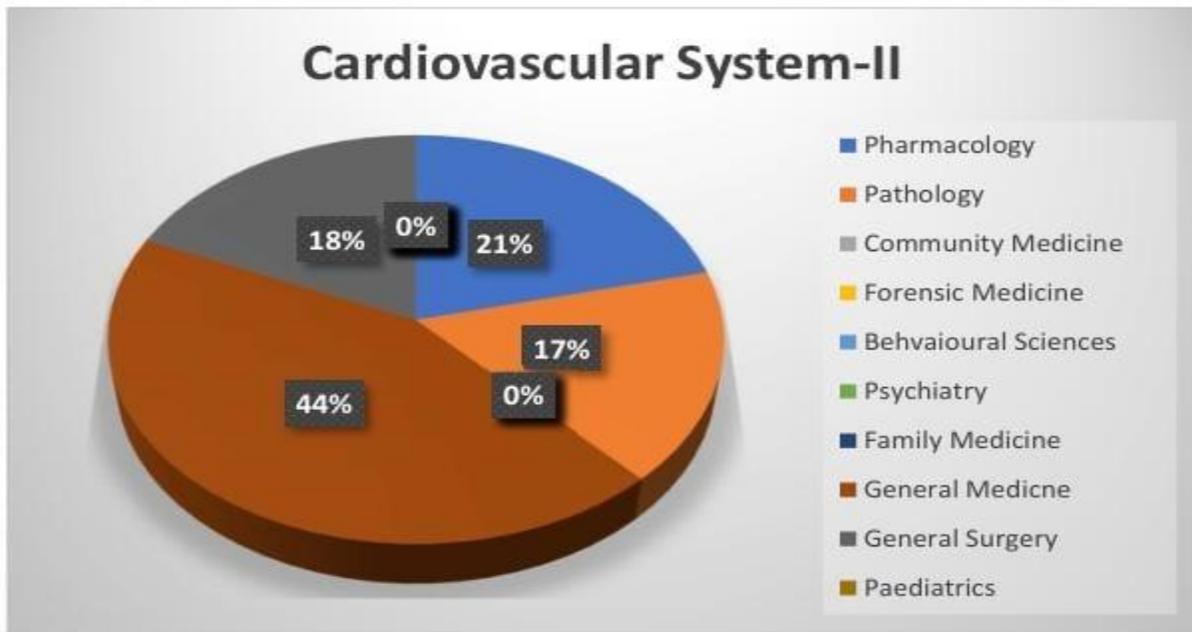
This module prepares the 3rd year MBBS students for the real-world challenges of crime scene investigation, medico-legal frameworks of Pakistan, and dealing with cases of poisoning. This module is critical in developing a holistic understanding of the intersection of the medical profession and law.

MODULE OUTCOMES

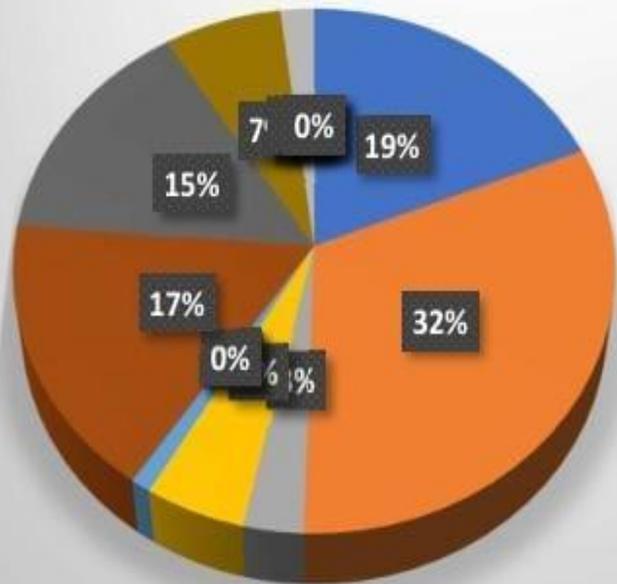
- ☐ Describe different types of Laws

- ☐ 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

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| Block weeks | = | 9.44 |
| Recommended minimum hours = 17+101+115 +40 =273 | | |

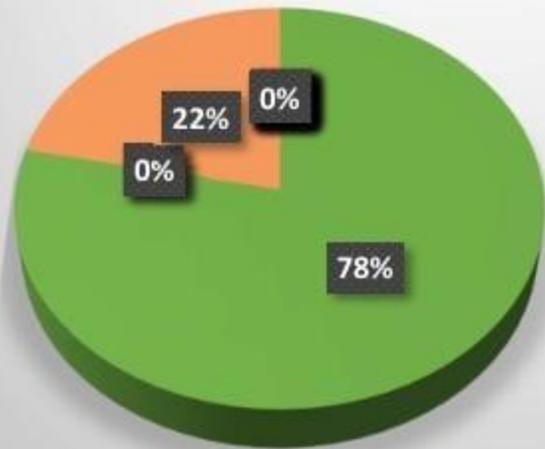


Respiratory System-II



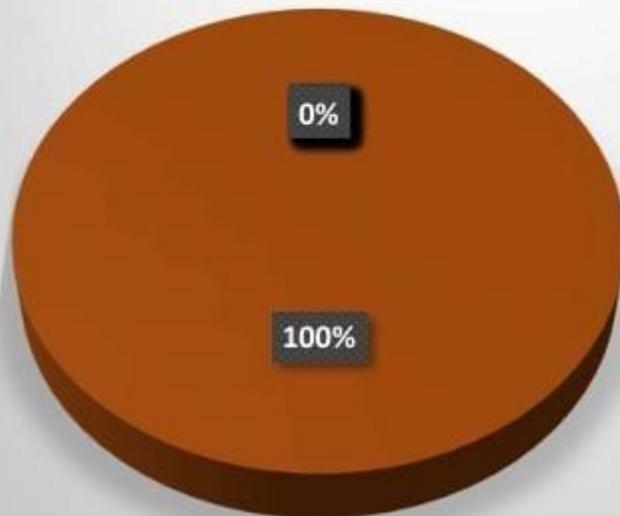
- Pharmacology
- Pathology
- Community Medicine
- Forensic Medicine
- Behvaioural Sciences
- Psychiatry
- Family Medicine
- General Medicine
- General Surgery
- Paediatrics

Community Medicine & Family Health-I



- Pharmacology
- Pathology
- Community Medicine
- Forensic Medicine
- Behavioural Sciences
- Psychiatry
- Family Medicine
- General Medicine

Forensic Medicine & Toxicology III



- Pharmacology
- Pathology
- Community Medicine
- Forensic Medicine
- Behavioural Sciences
- Psychiatry
- Family Medicine
- General Medicine
- General Surgery
- Paediatrics

Cardiovascular System -II Module Content

THEORY

GENERAL MEDICINE

| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 10 | |
|---|---|------------------------------------|------------------------|
| | | DISCIPLINE | TOPIC |
| CV2-M-001 | Understand the Etiology and Pathogenesis of Rheumatic Fever | Integrate with Pathology | 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 | Define cor-pulmonale and distinguish it from other causes of right heart failure. | Integrate with Pathology | Cor-pulmonale |
| | 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 | Define and Classify Infective Endocarditis (IE) | Pathology integrates with medicine | Infective endocarditis |
| | Explain the Pathophysiology of Infective Endocarditis | | |
| | Identify the Common Etiological Agents of Infective Endocarditis | | |
| | Recognize the Clinical Features of Infective Endocarditis | | |

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| | 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 | Define and Classify Pericarditis | | Pericarditis |
| | Describe the Etiology of Pericarditis | | |
| | Explain the Pathophysiology of Pericarditis | Pathology | |
| | 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 | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 14 | |
|------------|---|------------------|--------------------|
| | | DISCIPLINE | TOPIC |
| CV2-Ph-001 | <p>Classify antihypertensive drugs including vasodilators, calcium channel blockers, drugs acting on RAAS, central sympatholytic drugs and diuretics.</p> <p>Describe their mechanisms of action, clinical uses, adverse effects, drug-interactions and contraindications</p> <p>Identify the compensatory responses to antihypertensive drugs.</p> <p>Give an account of pharmacological considerations taken in hypertensive emergencies, malignant hypertension, IHDs, cardiac failure, cardiomyopathies, coarctation of aorta, diabetes</p> | Pharmacology | Anti-hypertensives |

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| | mellitus, chronic renal diseases, Cerebrovascular Disease, Dementia, and pregnancy | | |
| CV2-Ph-002 | <p>Explain strategies used in pharmacological treatment of angina.</p> <p>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.</p> <p>Explain the role of Fatty Acid Oxidation Inhibitors in the treatment of Angina.</p> <p>How the Coronary Steal Phenomenon is addressed?</p> | | Ischemic Heart Diseases |
| CV2-Ph-003 | <p>Classify drugs used in cardiac arrhythmias; describe their mechanism of action, uses, adverse effects and drug interactions.</p> <p>Explain general strategies used in pharmacological treatment of cardiac arrhythmias.</p> | | Cardiac Arrhythmias: |
| CV2-Ph-004 | <p>Classify drugs used in cardiac failure and describe their mechanism of action, pharmacological effects, uses, adverse effects, interactions and contraindications.</p> <p>Describe the cardiovascular effects of Dopamine, Dobutamine, Phosphodiesterase Enzyme Inhibitors, ACE Inhibitors and ARBs, Beta Blockers, directly acting vasodilators in Cardiac Failure.</p> <p>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> | | Cardiac Failure. |

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| CV2-Ph-005 | <p>Classify Anti-Hyperlipidemic Drugs</p> <p>Describe their Mechanism of Action, Uses, Adverse Effects and Drug Interactions</p> <p>Enlist combination therapies for treatment of hyperlipidemias</p> | | Anti-Hyperlipidemic / Anti-Dyslipidemias |
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CARDIOLOGY

| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 14 | |
|-----------|--|--------------------------|------------------|
| | | DISCIPLINE | TOPIC |
| CV2-M-005 | <p>Define cardiomyopathies as diseases of the heart muscle that affect its structure and function.</p> <p>Classify cardiomyopathies into the major subtypes</p> <ul style="list-style-type: none"> i. Dilated cardiomyopathy (DCM) ii. Hypertrophic cardiomyopathy (HCM) iii. Restrictive cardiomyopathy (RCM) iv. Arrhythmogenic right ventricular cardiomyopathy (ARVC) <p>Unclassified cardiomyopathies (e.g., left ventricular non-compaction)</p> <p>Explain the underlying Pathophysiology of Different Cardiomyopathies</p> <p>Recognize the Clinical Features of Cardiomyopathies</p> <p>Describe the role of echocardiography in diagnosing cardiomyopathies by assessing heart structure, wall thickness, chamber size, and ejection fraction.</p> <p>Highlight the use of ECG in detecting arrhythmias and conduction abnormalities associated with specific cardiomyopathies.</p> <p>Discuss the role of cardiac MRI in identifying myocardial fibrosis, particularly in hypertrophic and arrhythmogenic cardiomyopathies.</p> | Integrate with pathology | Cardiomyopathies |

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| | <p>Explain the importance of genetic testing in familial cardiomyopathies, especially HCM and ARVC, for risk assessment and family screening.</p> <p>Understand the Complications of Cardiomyopathies:</p> <p>Outline the Management of Cardiomyopathies</p> <p>Describe the Genetic and Preventive Aspects of Cardiomyopathies:</p> | | |
| CV2-M-006 | <p>Define and Classify Congestive Cardiac Failure</p> <p>Understand the Epidemiology and Risk Factors of Heart Failure</p> <p>Explain the Pathophysiology of Congestive Cardiac Failure</p> <p>Recognize the Clinical Features of Congestive Cardiac Failure</p> <p>Discuss the Diagnostic Approach to Congestive Cardiac Failure</p> <p>Differentiate Between Acute and Chronic Heart Failure</p> <p>Explain the Complications of Congestive Cardiac Failure</p> <p>Outline the non-pharmacological and pharmacological Management of Congestive Cardiac Failure</p> <p>Discuss strategies to prevent the development or progression of heart failure</p> <p>Understand the role of prognostic factors in heart failure</p> | Integrate with pathology | Congestive Cardiac Failure |
| CV2-M-007 | <p>Define coronary artery disease</p> <p>Differentiate between stable angina, unstable angina, myocardial infarction (MI), and acute coronary syndrome (ACS).</p> <p>Discuss the modifiable and non-modifiable risk factors for CAD</p> <p>Describe how CAD can lead to myocardial ischemia, affecting oxygen supply to the heart muscle, and the</p> | | Coronary artery disease |

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| | <p>consequences of plaque rupture leading to thrombus formation and acute coronary syndromes.</p> <p>Differentiate between stable angina (caused by fixed plaque) and acute coronary syndromes (caused by plaque rupture and thrombosis).</p> <p>Recognize the Clinical Features of Coronary Artery Disease</p> <p>Discuss the Diagnostic Approach to Coronary Artery Disease:</p> <p>Enlist the complications of CAD</p> <p>Discuss the management plan of stable CAD</p> <p>Discuss the role of revascularization techniques in stable CAD, including percutaneous coronary intervention (PCI) and coronary artery bypass grafting (CABG) in selected patients.</p> <p>Outline the Management of Acute Coronary Syndromes (ACS)</p> | | |
| CV2-M-008 | <p>Define Valvular Heart Disease</p> <p>Differentiate between stenosis (narrowing of valve orifice) and regurgitation (incompetence or leakage of valve).</p> <p>Understand the Epidemiology and Etiology of Valvular Heart Disease</p> <p>Explain the Pathophysiology of Common Valvular Lesions</p> <p>Discuss the management plan for valvular heart diseases</p> | Integrate with pathology | Valvular heart diseases |
| CV2-M-009 | <p>Define congenital heart disease as structural or functional defects of the heart and great vessels present at birth.</p> <p>Classify Congenital Heart Diseases into:</p> <ul style="list-style-type: none"> i. Cyanotic congenital heart diseases (e.g., Tetralogy of Fallot, Transposition of the Great Arteries). | | Integrate with Pead's |

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| | Cyanotic congenital heart diseases (e.g., Atrial Septal Defect, Ventricular Septal) | | |
| | Understand the Epidemiology and Risk Factors of Congenital Heart Disease. | | |
| | Explain the Pathophysiology of Common Congenital Heart Lesions (ASD, VSD, PDA, TOF, TGA) | Integrate with pathology | |
| | 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 | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 12 | |
| | | DISCIPLINE | TOPIC |
| CV2-Pa-001 | Define aneurysm and differentiate between true and false aneurysms. | Integrate with biochemistry | 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. | | |
| | Discuss the clinical signs and symptoms of aneurysms depending on their location (e.g., | | |

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| | <p>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 | <p>Define vascular tumors</p> <p>Classify vascular tumors</p> | | Vascular tumors |
| | <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> | Integrate with biochemistry | |
| | <p>Identify the characteristic clinical presentations of common vascular tumors (e.g., skin lesions in hemangiomas, liver involvement in 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> | | |
| | <p>Describe the histological differences between various vascular tumors, emphasizing the appearance of endothelial cells, vascular channels, and mitotic activity</p> | Integrate with histology | |

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| CV2-Pa-003 | Define cardiac tumors and differentiate between primary and secondary (metastatic) cardiac tumors. | | Cardiac tumors |
| | Classify primary cardiac tumors into benign (e.g., myxoma, rhabdomyoma, fibroma) and malignant (e.g., angiosarcoma, rhabdomyosarcoma). | | |
| | 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). | | |
| | 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. | | |
| | Explain how histopathological analysis helps in distinguishing between benign and malignant cardiac tumors. | | |
| | Outline the Principles of Management for Cardiac Tumors | Integrate with surgery | |

GENERAL SURGERY/VASCULAR SURGERY

| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 10 | |
|------|---|--------------------------|---------------------|
| | | DISCIPLINE | TOPIC |
| | Discuss the Pathophysiology of Peripheral Vascular Diseases | Integrate with pathology | Peripheral Vascular |

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| CV2-S-001 | Identify key risk factors for peripheral vascular diseases | | Diseases (PVD) |
| | 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 | | |

PRACTICAL / LAB WORK

PHARMACOLOGY

| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 01 | |
|------------|--|------------------------|-----------------------|
| | | INTEGRATING DISCIPLINE | TOPIC |
| CV2-Ph-006 | Analysis and interpretation of Drugs (Acetylcholine, Atropine Adrenaline, Propranolol) on animal through online videos / simulations / graphs / practical performance. | Pharmacology | Cardiovascular System |
| | Analysis and interpretation of different Concentrations of Acetylcholine on Frog's heart | | |

| | through online videos / simulations / graphs / practical performance. | | |
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| CLINICAL ROTATIONS | | | |
| CARDIOLOGY AND SURGERY | | | |
| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 10 | |
| | | DISCIPLINE | TOPIC |
| CV2-M-009 | Take history specific to CVS | Medicine | History taking |
| | Perform GPE relevant to CVS to observe signs of cyanosis, pallor, edema, hyperlipidemia and clubbing | | GPE |
| | Palpate peripheral pulses, observe signs of raised JVP | | |
| | Measure blood pressure | | |
| CV2-M-010 | Perform CVS examination on a patient | Cardiology | CVS examination |
| CV2-M-011 | Interpret changes in ECG and correlate them with clinical conditions | | ECG |
| CV2-S-002 | Perform examination of an ischemic limb | Surgery | Examination of peripheral vascular system |

Respiratory System Module Content

| THEORY | | | |
|------------|---|------------------|--|
| PATHOLOGY | | | |
| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 16 | |
| | | DISCIPLINE | TOPIC |
| Re2-Pa-001 | Describe hypersensitivity reaction 1 with clinical examples Describe immune mechanism involved in HSR-I | Pathology | Hyper-sensitivity reaction (HSR) Type II |
| Re2-Pa-002 | Define asthma Classify asthma Discuss pathogenesis of atopic and non -atopic asthma Discuss pathogenesis of atopic and non -atopic asthma. | | Bronchial asthma |
| Re2-Pa-003 | Define chronic bronchitis Describe the pathogenesis of chronic bronchitis Discuss the pathogenesis of bronchiectasis Describe gross and microscopic morphological features of bronchitis. Describe gross and microscopic features of bronchiectasis. | | Chronic bronchitis |
| Re2-Pa-004 | Define emphysema Classify types of emphysema Describe protease-antiprotease imbalance hypothesis for development of emphysema | | Emphysema |
| Re2-Pa-005 | 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 | | Restrictive Lung Diseases |
| Re2-Pa-006 | Describe various etiological factors of pulmonary pneumonia. | | Pneumonia |

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| | <p>Describe the histopathological subtypes of pulmonary pneumonia</p> <p>Describe morphological features of bronchogenic and lobar pneumonia.</p> <p>Describe four stages of lobar pneumonia</p> <p>Explain the complications associated with pulmonary pneumonia</p> | | |
| Re2-Pa-007 | <p>Describe the morphological features of different types of granulomatous inflammation</p> <p>Describe Ghons complex.</p> <p>Differentiate between primary and secondary tuberculosis.</p> | | Granulomatous Inflammation |
| Re2-Pa-008 | <p>Describe hypersensitivity reaction IV with clinical examples</p> <p>Describe the immune mechanism involved in HSR IV</p> | | Hypersensitivity Reaction (Hsr) Type IV |
| Re2-Pa-009 | <p>Classify pleural tumors</p> <p>List the risk factors for development of malignant mesothelioma</p> <p>Describe morphologic features of malignant mesothelioma</p> | | Pleural Tumors |
| Re2-Pa-010 | <p>Classify lung tumors</p> <p>Benign & Malignant diseases of lungs and thorax</p> <p>Describe morphologic features of squamous cell carcinoma</p> <p>Adenocarcinoma, neuroendocrine tumors, other Tumors</p> <p>Enumerate paraneoplastic syndromes associated with lung tumors</p> | | Lung Tumors |
| Re2-Pa-011 | <p>Small cell carcinoma lung</p> <p>Squamous cell carcinoma lung</p> <p>Adenocarcinoma lung</p> <p>Malignant Mesothelioma</p> | | Image Session Of Respiratory System-II |
| Re2-Pa-012 | <p>Classify pulmonary edema according to etiology</p> <p>Describe clinical conditions associated with development of ARDS</p> <p>Describe the pathogenesis of ARDS</p> | | Pulmonary Edema & Acute Respiratory Distress |

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| | Describe morphologic features of Diffuse alveolar damage (DAD) | | Syndrome (ARDS) |
| Re2-Pa-013 | 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 | Microbiology | Mycobacterium Tuberculosis |
| Re2-Pa-014 | Describe Corona virus Explain the structure and antigenicity of the virus Describe the pathogenesis of corona virus Discuss the relation with pneumonia | Microbiology | COVID-19 |
| Re2-Pa-015 | Enlist organisms producing respiratory tract infections | Microbiology | Microorganisms producing Respiratory tract infection |
| | Correlate clinically the virulence factors, transmission, pathogenesis, laboratory diagnosis of organisms causing respiratory tract infections; <ul style="list-style-type: none"> • Mycobacterium tuberculosis • Streptococcus pneumoniae • Mycoplasma pneumoniae • Legionella pneumoniae • Haemophilus influenzae • Klebsiella • Corynebacterium diphtheria • Bordetella | Microbiology | |
| | Correlate clinically the virulence factors, transmission, pathogenesis, laboratory diagnosis of organisms causing respiratory tract infections; <ul style="list-style-type: none"> • Influenza & para influenza viruses • RSV • Rhinovirus • Measles | Microbiology | |

| | <ul style="list-style-type: none"> • Pneumocystis carinii • Aspergillus | | |
|--------------|---|--------------------------------------|--|
| PHARMACOLOGY | | | |
| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 17 | |
| | | DISCIPLINE | TOPIC |
| Re2-Ph-001 | <p>Discuss the role of different drugs in the prevention & treatment of asthma</p> <p>Describe the mechanism of action & adverse effects of Beta 2 agonists used in asthma</p> <p>Describe the mechanism of action, actions & adverse effects of Methylxanthines Describe mechanism of action and adverse effects of Mast Cell Stabilizers</p> <p>Discuss the roles of corticosteroids in the treatment of bronchial asthma.</p> <p>Discuss the role of ipratropium in asthma</p> <p>Discuss the mechanism of action and adverse effects of leukotriene synthesis and receptor blockers used in asthma</p> <p>Enlist drugs used in acute and chronic asthma</p> | Clinical Pharmacology & Therapeutics | Anti-Asthmatic drugs |
| Re2-Ph-002 | <p>Discuss the role of Anti-inflammatory drugs in COPD</p> <p>Describe the pharmacodynamics of bronchodilators in COPD treatment</p> <p>Explain the mechanism of action and indications of corticosteroids in restrictive lung diseases.</p> | | Anti-Inflammatory drugs |
| Re2-Ph-003 | <p>Describe anti-tussive, mucolytics and expectorants</p> <p>Interactive</p> <p>Classify Anti-tussive Lecture</p> <p>Describe Pharmacodynamics of these drugs.</p> | | Anti-tussive, expectorants, mucolytics |
| Re2-Ph-004 | <p>Explain the spectrum of activity for macrolides and cephalosporins</p> <p>Identify adverse reactions associated with common antibiotics</p> | | Macrolides and cephalosporins |

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| Re2-Ph-005 | <p>Classify the drugs used for hospital and community-acquired pneumonia</p> <p>Describe the mechanism of action for each class</p> <p>Discuss the mechanism of action of pneumococcal and influenza vaccines in stimulating the immune system</p> | | Drugs For Treatment Of Pneumonia |
| Re2-Ph-006 | <p>Enumerate first and second line drugs for treatment of tuberculosis</p> <p>Describe mechanism of action of first line drugs used in tuberculosis</p> <p>Describe spectrum of antibacterial action of Rifampicin</p> <p>Describe drug interactions of Rifampicin</p> <p>Discuss adverse effects of 1st line Anti-TB drugs</p> <p>Discuss drugs used for various anti-TB regimes</p> <p>Discuss chemoprophylaxis of TB</p> <p>Discuss second line drugs used in TB</p> | | Anti-Tuberculous Drugs |
| Re2-Ph-007 | <p>Define autacoids.</p> <p>Enlist major histamine receptors.</p> <p>Classify anti-histamine drugs.</p> <p>Describe clinical uses of antihistamines.</p> <p>Discuss the toxicity of antihistamines.</p> <p>Classify serotonin agonists & antagonists.</p> <p>Describe the clinical uses of serotonin agonists & antagonists.</p> <p>Discuss the adverse effects of serotonin agonists & antagonists.</p> <p>Enumerate ergot alkaloids.</p> <p>Describe the mechanism of action of ergot alkaloids.</p> <p>Discuss the clinical uses of ergot alkaloids. Discuss the toxicity of ergot alkaloids. Enlist the types of prostaglandins.</p> <p>Discuss the pharmacological actions of prostaglandins.</p> <p>Describe the clinical uses of prostaglandins. Discuss the adverse effects of prostaglandins</p> | | Autacoids |
| Re2-Ph-008 | <p>Explain the chemotherapeutic options for lung cancer</p> | | Chemotherapeutic Drugs |

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| Re2-Ph-009 | Discuss the management strategies for ARDS Explain the role of corticosteroids and sedatives in respiratory failure management | | Drugs respiratory failure management |
| Re2-Ph-010 | Describe the mechanism of action and adverse effects of opioid analgesics and NSAIDs in trauma management Explain the role of local anesthetics in pain control through nerve blocks Discuss the use of muscle relaxants in chest trauma to alleviate muscle spasms and improve breathing | | Opioid analgesics and NSAIDs |
| Re2-Ph-011 | Discuss the use of vasopressors in managing hypotension due to blood loss in trauma | | Vasopressors |
| SURGERY | | | |
| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 08 | |
| | | DISCIPLINE | TOPIC |
| Re2-S-001 | Surgical approach to lung cancer resection, Complications of lung resection | Surgery | lung cancer resection |
| Re2-S-002 | Management of Lung metastases | | Lung Metastasis |
| Re2-S-003 | Describe mechanism of tension pneumothorax (T.P.) Enlist the causes of T.P. Describe the clinical of features of tension pneumothorax (signs & symptoms) Outline the steps of treatment of T.P. | | Tension Pneumothorax |
| Re2-S-004 | Describe sucking chest wound. Describe the underlying respiratory physiological changes in flail chest. Describe steps of management of such wound. | | Open Pneumothorax |
| Re2-S-005 | Enlist the causes of thoracic trauma in Describe significance of RTA mortality. Enlist the causative factors for breathing difficulty in chest trauma patients. Review the different thoracic injuries. Enumerate the sources of probable bleeding in a chest trauma. | | Thoracic Trauma |

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| | Describe the initial management of a patient with chest trauma. Outline the management of thoracic injuries | | |
| Re2-S-006 | Define flail chest. Describe mechanism of respiratory sequel of flail chest. Describe the clinical features of flail chest. 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. | | Thoracic Trauma-II |
| Re2-S-007 | 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 | | Post Op Respiratory Complications |
| Re2-S-008 | Define the pulmonary contusions Enumerate the clinical features Describe the steps of management Describe complications of pulmonary contusion. | | Lungs Injuries |
| MEDICINE | | | |
| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 19 | |
| | | DISCIPLINE | TOPIC |
| Re2-M-001 | Correlate Clinical features of bronchial asthma to its pathogenesis Describe investigations of a patient with asthma Enlist features of acute severe asthma Enlist features of life-threatening asthma | Medicine | Bronchial asthma |

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| | Discuss the step-wise therapy of stable asthma Discuss the management of acute severe asthma | | |
| Re2-M-002 | Enumerate risk factors for asthma. Describe clinical features of acute and chronic bronchial asthma. Classify asthma symptoms according to GINA Guidelines. Outline management of childhood Asthma. | Pediatrics | Childhood asthma |
| Re2-M-003 | Define COPD Describe types of COPD Describe Clinical features of COPD Outline investigation plan of a patient with COPD Describe GOLD staging criteria for COPD Outline the management of acute exacerbation of COPD Describe long term management of COPD Describe criteria for long term oxygen therapy in COPD | Medicine | COPD, Chronic bronchitis, Emphysema |
| Re2-M-004 | Enlist the causes of bronchiectasis Describe the clinical features of bronchiectasis Describe investigations of bronchiectasis Enlist the complications of bronchiectasis Describe the management of bronchiectasis | Medicine | Bronchiectasis |
| Re2-M-005 | Define cystic fibrosis. Describe pattern of inheritance of cystic fibrosis. Describe pathophysiology of CF Describe clinical features of CF. Interpret investigations for CF. Enumerate steps of management of CF. | Pediatrics | Cystic fibrosis |
| Re2-M-006 | Identify psychological disturbances associated with respiratory diseases/COPD Enlist psychological consequences of COPD Describe steps to manage psychological effects of COPD | Behavioral Sciences | Psychological implications of COPD |
| Re2-M-007 | Enlist the causes of ILD Describe the clinical features of interstitial lung diseases Outline investigation plan of interstitial lung diseases Describe the treatment of interstitial lung diseases | Medicine | Interstitial Lung Diseases |

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| Re2-M-008 | <p>Define pertussis.</p> <p>Describe clinical features of pertussis.</p> <p>Describe complications of pertussis.</p> <p>Interpret investigations for pertussis.</p> <p>Describe prognosis and prevention.</p> | Pediatrics | Pertussis |
| Re2-M-009 | <p>Define Croup</p> <p>Describe etiology of croup.</p> <p>Describe clinical features of viral croup.</p> <p>Interpret investigations for viral croup.</p> <p>Discuss differential diagnosis of croup</p> <p>Describe management of viral croup.</p> <p>Describe clinical features of epiglottitis.</p> <p>Interpret investigations for epiglottitis.</p> <p>Describe management of epiglottitis.</p> | Pediatrics | Croup |
| Re2-M-010 | <p>Comprehend the MoA of the asphyxiant poisons</p> <p>Diagnose a case when presented to him</p> <p>Plan management</p> | Forensic Medicine | Asphyxiants Poisons |
| Re2-M-011 | <p>Classify pneumonia</p> <p>Enlist the microbiological agents causing pneumonia</p> <p>Describe the clinical features of pneumonia</p> <p>Enlist investigations plan in a patient of pneumonia</p> <p>Describe CURB-65 criteria for severity of pneumonia</p> <p>Describe the management of pneumonia</p> <p>Describe the complications of pneumonia</p> | Medicine | Pneumonia |
| Re2-M-012 | <p>Define bronchiolitis and pneumonia.</p> <p>Enlist etiology of bronchiolitis and pneumonia.</p> <p>Describe clinical features of bronchiolitis/pneumonia.</p> <p>Interpret investigations for bronchiolitis/pneumonia.</p> <p>Describe management of bronchiolitis/pneumonia</p> | Pediatrics | Childhood Pneumonia |
| Re2-M-013 | <p>Describe investigation plan of a patient with suspected tuberculosis</p> <p>Describe investigation plan of a patient with suspected tuberculosis</p> <p>Discuss primary and secondary tuberculosis</p> | Medicine | Pulmonary Tuberculosis |

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| | <p>Correlate pathophysiology of pulmonary tuberculosis with its clinical presentation.</p> <p>Discuss clinical features of pulmonary tuberculosis.</p> <p>Interpret investigations for tuberculosis.</p> <p>Discuss management of pulmonary tuberculosis.</p> <p>Discuss prevention of tuberculosis.</p> <p>Drug resistant TB</p> <p>Discuss prevention of tuberculosis in a neonate of a mother suffering from tuberculosis.</p> | | |
| Re2-M-014 | <p>Describe the epidemiology prevalence and preventive measures of Tuberculosis</p> <p>Describe the epidemiology prevalence and preventive measures of Respiratory infections</p> <p>Describe the epidemiology & Prevention of Pneumoconiosis</p> <p>Describe the epidemiology prevalence and preventive measures of Influenza, Diphtheria, whooping cough, meningococcal meningitis</p> <p>Discuss the efficacy of the BCG vaccine in different populations.</p> | Community Medicine | Preventive Measures |
| Re2-M-015 | <p>Describe Clinical features of bronchogenic carcinoma</p> <p>Enlist investigations of bronchogenic carcinoma</p> <p>Enumerate treatment options in bronchogenic carcinoma</p> <p>Complications of CA</p> | | Bronchogenic Carcinoma |
| Re2-M-016 | <p>Define pleural effusion</p> <p>Differentiate between exudative and transudative pleural effusion</p> <p>Enlist causes of pleural effusion</p> <p>Describe Clinical features of pleural effusion</p> <p>Describe investigations in a patient with pleural effusion</p> <p>Describe palliative management of recurrent pleural effusion</p> | Medicine | Pleural Effusion |
| Re2-M-017 | <p>Define pneumothorax</p> <p>Classify pneumothorax</p> <p>Enlist Risk factors of pneumothorax</p> | | Pneumothorax |

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| | Describe clinical features of pneumothorax Enlist investigations of pneumothorax Describe management of pneumothorax | | |
| Re2-M-018 | Define respiratory failure Classify types of respiratory failure Describe clinical features of respiratory failure Describe management of respiratory failure | | Respiratory Failure |
| Re2-M-019 | Define Etiology, clinical features, investigations, treatment of OSA | Medicine | Obstructive Sleep Apnea |
| Re2-M-020 | Enumerate the lab investigations to diagnose Covid 19 Describe the Clinical presentation of Covid-19 Discuss the management protocols to treat Covid patient complications Discuss the vaccination and side effect (for COVID) | Medicine | COVID-19 |
| PRACTICAL / LAB WORK | | | |
| PATHOLOGY | | | |
| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 16 | |
| | | DISCIPLINE | TOPIC |
| Re2-Pa-016 | Describe the important morphological characteristics, biochemical reactions, virulence factors of Bordetella pertussis with their clinical Significance Describe pathogenesis of Bordetella pertussis infections Describe lab diagnosis of Bordetella pertussis infections. | Microbiology | Bordetella Pertussis |
| Re2-Pa-017 | Describe the important morphological characteristics, biochemical reactions, virulence factors of Streptococcus pneumoniae with their clinical significance Enumerate the diseases caused by Streptococcus Pneumoniae Describe the pathogenesis of lobar Pneumonia caused by S. pneumonia Describe the lab investigation of Streptococcus Pneumoniae infections | | Streptococcus Pneumoniae & H. Influenza |

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| | <p>Describe the important morphological characteristics, biochemical reactions, virulence factors of <i>H. influenzae</i> with their clinical significance</p> <p>Describe the pathogenicity of <i>H. influenzae</i> in causation of respiratory tract infections</p> <p>Describe the lab diagnosis of <i>H. influenzae</i> infections</p> | |
| Re2-Pa-018 | <p>Describe the important morphological characteristics, biochemical reactions, virulence factors of <i>Mycoplasma pneumoniae</i></p> <p>Describe the pathogenesis of atypical pneumonia caused by <i>M. pneumoniae</i></p> <p>Describe the lab diagnosis of <i>M. pneumoniae</i> infections</p> | <i>Mycoplasma Pneumoniae</i> |
| Re2-Pa-019 | <p>Describe the important morphological characteristics, biochemical reactions, virulence factors of <i>Legionella pneumophila</i></p> <p>Describe the pathogenesis of atypical pneumonia caused by <i>Legionella pneumophila</i></p> | <i>Legionella</i> |
| Re2-Pa-020 | <p>Define Chlamydia, enumerate their medically important species</p> <p>Enumerate the diseases caused by Chlamydia</p> <p>Describe the important morphological characteristics, biochemical reactions, virulence factors of Chlamydia and their clinical significance</p> <p>Describe the pathogenesis of <i>C. trachomatis</i>, <i>C. pneumoniae</i>, <i>C. psittaci</i> mediated atypical pneumonias</p> <p>Describe the lab diagnosis of Chlamydial infections</p> | <i>Chlamydiae & Coxiella Laburnetii</i> |
| Re2-Pa-021 | <p>Describe the important morphological Characteristics, biochemical reactions, virulence factors of <i>Bacillus anthracis</i> with their clinical significance.</p> <p>Describe the lab diagnosis of <i>Bacillus anthracis</i> infections.</p> | <i>Bacillus Anthracis</i> |
| Re2-Pa-02 | <p>Describe the important morphological characteristics, biochemical reactions, virulence factors of <i>Yersinia pestis</i> and their clinical significance</p> <p>Describe the pathogenesis of plague</p> <p>Describe the lab diagnosis of <i>Yersinia pestis</i> infections</p> | <i>Yersinia Pestis</i> |

| Re2-Pa-023 | Describe the lab diagnosis of Pulmonary (ZN staining and cultures) | | Mycobacterium Tuberculosis |
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| FORENSIC MEDICINE | | | |
| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 05 | |
| | | DISCIPLINE | TOPIC |
| Re2-For-001 | <p>Define hanging</p> <p>Enlist types of hanging</p> <p>Enumerate causes of death in hanging</p> <p>Enlist autopsy findings in hanging.</p> <p>Define strangulation.</p> <p>Enlist its sub types</p> <p>Enlist autopsy findings in case of manual strangulation</p> <p>Enlist autopsy findings in case of ligature strangulation</p> <p>Differentiate between strangulation and hanging ligature mark</p> | Forensic Medicine | Hanging/ Strangulation |
| Re2-For-002 | <p>Define suffocation</p> <p>Enumerate deaths which are caused due to suffocation.</p> <p>Define smothering</p> <p>Enlists autopsy findings in case of death due to smothering</p> | | Suffocation, Smothering |
| Re2-For-003 | <p>Define gagging</p> <p>Enlists autopsy findings in case of death due to gagging</p> <p>Define choking</p> <p>Enlists autopsy findings in case of death due to choking</p> <p>Define traumatic asphyxia</p> <p>Enlists autopsy findings in case of traumatic asphyxia</p> <p>Discuss medicolegal importance</p> | | Gagging, Choking Traumatic Asphyxia and Autoerotic Asphyxia |
| Re2-For-004 | <p>The student be able to:</p> <p>Enlist important Asphyxiant present in the environment</p> <p>Describe their Mechanism of action.</p> <p>Discuss effect on different body systems with increasing blood concentration</p> <p>Enlist sign and symptoms</p> <p>Enlist autopsy findings</p> | | Asphyxiant poisons |

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| | Describe their medico legal importance Comprehend the MoA of the Asphyxiant poisons, Diagnose a case when presented to him Plan management | | |
| PHARMACOLOGY | | | |
| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 02 | |
| | | DISCIPLINE | TOPIC |
| Re2-Ph-012 | Write down the prescription for Tuberculosis Write down the prescription for Asthma Write down the prescription for Cough Discuss the steps involved in selection of P-drug for bronchial asthma | Clinical Pharmacology & Therapeutics | Prescription Writing |
| COMMUNITY MEDICINE | | | |
| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 02 | |
| | | DISCIPLINE | TOPIC |
| Re2-CM-001 | Describe the standard preventive precautions for all patients. Describe the additional precautions for infected patients & for patient requiring single isolated room. Describe the precautions for family members providing care to the patient in hospital & home. Describe the use of face mask, gloves, shoe cover, cap and gown. Recognize the common errors made while using personal protective equipment. Demonstrate the method to wear face mask, gloves, shoe cover, cap and gown & remove them aseptically. | Community Medicine | Isolation Precautions |

CLINICAL ROTATIONS / COMMUNITY HEALTHCARE

MEDICINE & SURGERY

| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 17 | |
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| | | DISCIPLINE | TOPIC |
| Re2-M-021 | 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. | Medicine (Pulmonology) | Instruct patients in the use of devices for inhaled medication |
| Re2-M-022 | 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 | Medicine (Pulmonology) | Prescribe and administer oxygen |
| Re2-M-023 | 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 | Radiology | Interpretation of x-rays of chest |
| Re2-M-024 | Define Mantoux test Enumerate the indications and contraindications Describe the procedure and interpretation of results | Medicine (Pulmonology) | Tuberculosis Mantoux Test |
| Re2-S-009 | Clinical Presentation, Management Strategies & Complications Students should be able to identify and differentiate between types of pneumothoraxes (primary, secondary, and tension pneumothorax) through clinical assessment and imaging techniques | Surgery (Thoracic) | Pneumothorax |
| Re2-S-010 | Management & Complications | Surgery (Thoracic) | Pulmonary embolism |

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| | >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. | | |
| Re2-S-011 | ABCDE approach in trauma settings >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) | Surgery (Thoracic) | Principles of management of trauma |
| Re2-S-012 | Student should be able to demonstrate appropriate interventions (including airway management and fluid resuscitation) | Surgery (Thoracic) | Principles of management of trauma |
| Re2-S-013 | Students should be able to identify the anatomical landmarks of the pediatric patient for pleural tap 2) perform the pleural tap procedure on simulation in skill lab 3) Counsel the attendants for the indication, procedure, and contraindication of the pleural tap. | Paeds (Thoracic) | Pleural Tap |

| THEORY | | | |
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| COMMUNITY MEDICINE | | | |
| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 44 | |
| | | DISCIPLINE | TOPIC |
| CMFH1- CM-001 | To understand the development of Public Health in Pakistan. | Community Medicine | Health Systems 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 | To understand the background, concepts, uses and basic measurements of epidemiology (morbidity, mortality, disability and fatality) | Community Medicine | General Epidemiology and |
| | To describe the different epidemiological methods including descriptive, analytic and experimental approaches | | |

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| | <p>To differentiate between association and causation</p> <p>Investigation of an outbreak or an epidemic.</p> <p>To understand the principles and methods of disease screening</p> <p>To conduct a community diagnosis and interpret its findings</p> <p>To describe research and survey methodologies</p> | | <p>Research Methodology and Screening</p> |
| <p>CMFH1-CM-003</p> | <p>To understand the composition of air</p> <p>To describe the causes of air pollution and methods of air purification</p> <p>To explain the diseases caused by impurities in the air and their prevention</p> <p>To identify the sources of water and understand daily water requirements</p> <p>To analyze the causes of water pollution and methods for its prevention</p> <p>To understand the process of water purification and water quality standards</p> <p>To describe diseases caused by polluted water and their prevention</p> <p>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</p> <p>To differentiate between climate and weather</p> <p>To analyze global environmental concerns like greenhouse effect, depletion of Ozone layer and acid rains</p> <p>To explain the effects of extremes in temperature, humidity, and atmospheric pressure on human health, along with prevention methods</p> <p>To describe the sources, types, causes, hazards, and prevention of radiation exposure</p> | <p>Community Medicine</p> | <p>Environmental Health Sciences</p> |

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| | <p>To understand the concepts of healthful housing and the challenges faced in urban and rural slums</p> <p>To define noise, its causes, acceptable levels, and the hazards and methods of control</p> | | |
| CMFH1-CM-004 | <p>Definitions to differentiate between Infection, contamination, pollution, infestation</p> <p>To understand the terminology of Infectious disease, communicable disease, contagious disease</p> <p>To define Host, Immune and susceptible persons</p> <p>To differentiate between Sporadic, Endemic, Epidemic, Pandemic, Epizootic, Exotic and Zoonotic</p> <p>To understand the roles of contact, fomites, carriers, insect vectors, and reservoirs of infection</p> <p>To describe the incubation period, infective period, and generation time</p> <p>To differentiate between cross infection, nosocomial infections, opportunistic infections, and iatrogenic disorders (Physician induced)</p> <p>To explain the concepts of surveillance, control, eradication, and elimination</p> <p>To analyze the various modes of disease transmission</p> <p>To understand the principles of disease prevention and control</p> <p>To describe the methods and types of disinfection</p> <p>To explain the concept of immunity</p> <p>To identify different immunizing agents</p> | | Prevention and control of Infectious diseases |
| CMFH1-CM-005 | <p>Describe the concepts aims and approaches of IEC and approaches used in public health (Knowledge)</p> <p>Recall the contents, principles and stages of health education (Knowledge)</p> <p>Explain the process, types, methods and barriers of communication</p> <p>Identify the role of health care provider in health education (knowledge)</p> | Community Medicine | Communication, information and health education |

| | Plan, organize and evaluate a health education program (skill) | | |
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| | Describe the concept of social marketing and its' applications in health sector (knowledge and skill) | | |
| | Conduct health education sessions | | |
| CMFH1- CM-006 | Developing new models for patient care, such as telemedicine, personalized medicine, and digital health tools. | | Clinical entrepreneur ship |
| | 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. | Community Medicine | |
| | 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 | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 15 | |
| | | DISCIPLINE | TOPIC |
| CMFH1- FM-001 | Understand and describe the impact of social, demographic, cultural, environmental, and climate factors on health and disease. | Community Medicine | Epidemiology |
| CMFH1- FM-002 | Describe principles of prevention and control and apply them to common/prevalent diseases | | Health promotion |

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| CMFH1-FM-003 | Describe the role, purpose, and method of counseling and patient education | | Counseling and advocacy |
| CMFH1-FM-004 | Discuss breaking bad news and effective communication strategies and their role in violence de-escalation and management. | | Communication skills |
| CMFH1-FM-005 | 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. | Medicine, surgery | Scope of GP practice |
| CMFH1-FM-006 | Describe health literacy and shared decision-making concepts. | Community Medicine | Concept of health & disease |
| | Discuss evidence-based clinical decision-making. | | |
| | Describe different healthcare models and the concept of universal health coverage. | | |
| CMFH1-FM-007 | Define and apply ethical practices in clinical decision-making within family medicine | Community Medicine | Epidemiology of diseases |
| | 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 | Discuss the importance of quality care across preventive, therapeutic, rehabilitative, and palliative domains of healthcare. | Community Medicine | Preventive medicine |
| | Learn how to effectively utilize available healthcare resources to optimize patient care. | | |
| CMFH1-FM-009 | Implement strategies to reduce risk in clinical practice and ensure patient safety being a safe doctor | Medicine & surgery | Patient Safety |
| PRACTICAL / LAB WORK | | | |
| COMMUNITY MEDICINE | | | |
| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 10 | |
| | | DISCIPLINE | TOPIC |
| CMFH1-CM-007 | To assess the application of standards and KPIs in hospital lab settings and Blood banks | Pathology | MSDS Standards |

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| | 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 | Community Medicine | |
| FAMILY HEALTH | | | |
| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 10 | |
| CMFH1-FM-010 | <p>Conduct patient history and physical exams.</p> <p>Identify common conditions and refer when necessary.</p> <p>Develop patient-centered management plans.</p> | General OPD | <p>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.</p> |
| CMFH1-FM-011 | Symptomatic Approach to Adults with nutritional supplements | Clinical pharmacology | Fever, Body aches and Pain, Flulike symptoms, |

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| | | | Cough (Dry & Productive), Muscles Pain, Joint Pains, Diarrhea, Dysentery, Abdominal Cramps and Allergic Reactions |
| CMFH1-FM-012 | Symptomatic Approach to pregnant female with nutritional supplements | Gynae & Obs. | Fever, Body aches and Pain, Flulike symptoms, Cough (Dry & Productive), Muscles Pain, Joint Pains, Diarrhea, Dysentery, Abdominal Cramps and Allergic Reactions |
| CMFH1-FM-013 | Symptomatic Approach to children with nutritional supplements | Clinical pharmacology | Fever, Body aches and Pain, Flulike symptoms, Cough (Dry & Productive), Diarrhea (Role of ORS / Homemade), dysentery, Abdominal Cramps and Allergic Reactions |
| CMFH1-FM-014 | Engage in community health promotion and disease prevention. Participate in health screening, vaccination drives, and education. | Community Health Center Rotation | Conduct health education sessions and screening programs Participate in vaccination drives and |

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| | | | community outreach activities. Identify health needs in the community and implement preventive strategies. |
| CLINICAL ROTATIONS / COMMUNITY HEALTHCARE | | | |
| COMMUNITY MEDICINE | | | |
| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 36 | |
| | | DISCIPLINE | TOPIC |
| CMFH1-CM-008 | <p>Assess the appropriateness of location of a water purifying facility.</p> <p>Elaborate the process of delivering and transporting water to a water treatment plant.</p> <p>Differentiate the critical aspects of water supply from various sources.</p> <p>Identify the physical and chemical characteristics of the water.</p> <p>Determine the characteristics of the ingredients contained in water purification plants.</p> <p>Characterize infectious organisms and indicators.</p> <p>Explain how chemical compounds affect human health.</p> <p>Discuss the physical, chemical, and biological unit operations that are commonly encountered in treatment processes;</p> <p>Determine which rules, regulations, and guidelines govern the selection of various water treatment processes at the local, national, and international levels.</p> <p>Highlight the requirement for surface water and some ground water treatment for drinking reasons.</p> <p>Comprehend the role of each treatment procedure in the treatment of drinking water.</p> | Community Medicine | Water purification plant/Water testing lab |

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| | <p>Provide a fundamental overview of technology selection.</p> <p>Evaluate the working of water treatment plants.</p> | | |
| CMFH1-CM-009 | <p>Identify working biomedical waste department</p> <p>Describe various type of biomedical waste & their disposal in hospital</p> <p>Explain with rationale about the waste management plan of their hospital</p> <p>Describe color coding scheme for various type of waste according to WHO</p> <p>Describe the various methods to dispose of waste, their advantages and disadvantages.</p> <p>Describe non risk waste</p> <p>Describe risk waste</p> <p>Describe incineration working and cost analysis</p> <p>Describe storage site of waste at hospital</p> | Community Medicine | Visit to hospital waste management |
| CMFH1-CM-010 | <p>Describe the various physical, emotional and cognitive disabilities experienced by people who receive rehabilitation services and understand their functional limitations.</p> <p>Explain the medical & psychosocial impact of disabilities.</p> <p>Explain the impact of society's attitudes towards disabilities on the treatment of people with disabilities</p> <p>Critically evaluate the effect of physical, mental, gender, racial, cultural, and environmental factors on the lives of people with disabilities.</p> <p>Develop interaction skills to accommodate cultural sensitivity when working with consumers & their families.</p> <p>Explain the local context to familiarize the wide variety of generic and specialized community resources available to serve people with disabilities.</p> <p>Describe the major services provided in rehabilitation (e.g., rehabilitation counseling, vocational evaluation, adjustment services, job placement, physical restoration, environmental adaptations).</p> | Community Medicine | Visit to Rehabilitation center |

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| <p>Explain the role of the rehabilitation case manager in coordinating services for people with disabilities.</p> <p>Explain the local, state, and federal laws that affect rehabilitation services and the rights of people with disabilities.</p> <p>Explain the importance of advocacy (including self-advocacy) in the field of rehabilitation</p> <p>Discuss awareness and imparting skills to empower consumers to be active participants in their own rehabilitation plan.</p> <p>Critically appraise the ethical guidelines based on principles that encompass the rehabilitation field.</p> <p>Develop the verbal, written, and nonverbal communication skills necessary to work with people with disabilities, their families, and other service providers.</p> <p>Develop basic rehabilitation service delivery skills</p> <p>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>Explain the similarities and differences among public, private not-for-profit, and private-for-profit rehabilitation practice.</p> <p>Discuss the community-based employment options for individuals with disabilities</p> <p>Recognize the social, political, economic, and legal issues pertinent to an aging society and rehabilitation</p> <p>Develop the knowledge and skills pertinent to the procedures and programs provided to persons with developmental disabilities.</p> <p>Develop the knowledge and skills pertinent to the procedures and programs provided to persons with psychiatric disabilities.</p> | | |
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| | <p>Develop the knowledge and skills to train, supervise, and evaluate employees who are providing direct care to consumers.</p> <p>Discuss the professional organizations, professional journals, and job opportunities in the field of rehabilitation.</p> <p>Discuss the integration of the biological, physical, behavioral, and clinical sciences into physical therapy services</p> <p>Exhibit professional conduct and behaviors that are consistent with the legal and ethical practice of physical therapy.</p> <p>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>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>Complete a patient/client examination/re-examination and evaluate and interpret the examination data to determine a physical therapy diagnosis and prognosis</p> <p>Employ critical thinking, self-reflection, and evidence-based practice to make clinical decisions about physical therapy services.</p> <p>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>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 | Apply 5 levels of prevention for diseases of public health importance. | Community Medicine | Visit to BHU & RHCs |

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| | Design and implement community-based Health education and promotion projects. Collect, organize, analyze, interpret and disseminate data of disease burden in community and present report | | |
| CMFH1- CM-012 | House hold survey of 10 houses. Data collection and report writing | Community Medicine | Acquired community in vicinity of Medical College |

| THEORY | | | |
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| LAW | | | |
| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 05 | |
| | | INTEGRATING DISCIPLINE | TOPIC |
| For3-L-001 | Define and describe different types of law. | Forensic Medicine | Law |
| For3-L-002 | Describe different levels of courts of Pakistan and their judicial powers. | | Hierarchy of courts and their judicial powers |
| For3-L-003 | Define different legal terms. | | Legal Terms and Procedures |
| | Understand legal procedures and its presentation in the courts | | |
| For3-L-004 | Define and describe types of evidence | | Evidence |
| | Describe the stages of presentation of evidence in the court of law. | | |
| | Explain the types of witness and its presentation in the court | | |
| | Differentiate between dying deposition and declaration. | | |
| For3-L-005 | Describe general presumptions and exemptions in law to fix the criminal responsibility | | Forensic psychiatry and 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 Naughtan's rule, Durham,s rule to test the criminal responsibility. | | |
| | Outline the fate of criminal responsibility- Unfit to plead, | | |

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| | Diminished responsibility | | |
| | State testamentary capacity. | | |
| For3-L-006 | Define consent; describe its types and its role in medical treatment, consent & its legal basis. | Forensic medicine & Behavioral sciences | Consent |
| | 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 | Define medical bioethics. | Forensic medicine & Behavioral sciences | Doctor patient relationship |
| | 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 | Explain professional misconduct and its different types. | Forensic medicine & Behavioral sciences | Professional misconduct |
| | Describe professional secrecy, privileged communication, medico legal significance of medical records. | | |
| For3-L-009 | Differentiate between professional misconduct and professional negligence. | Forensic medicine & Behavioral sciences | Professional Negligence |
| | Describe different types of professional negligence. | | |
| | Establish the extent of damage to patient in medical practice. | | |
| | Outline the laws dealing with negligence. | | |

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| For3-L-010 | Describe composition of PMDC | Forensic Medicine | Laws dealing with medical practice |
| | 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 | Describe sections 2,4,5 and 6 of Haddood Ordinance 1979 | Forensic Medicine | Laws dealing with sexual offences Haddood Ordinance 1979, Women Protection Act 2006 Legal aspects of marriage, Muslim family law ordinance 1961. |
| | Explain natural & un-natural sexual offences | | |
| | Reproduce criteria of legal marriage and dissolution of marriage. | | |
| For3-L-012 | Define different terms used in the Qisas and Diyat Act relevant to hurt and Qatl | Forensic Medicine | Law relevant to Hurt and killings Qisas and Diyat Act 1997 |
| | Classify hurt and its subtypes as per Qisas and Diyat Act 1997 | | |
| | Classify QATL and its subtypes. | | |
| | Describe ISQAT-E-HAML AND ISQAT-E-JANIN. | | |
| | Understand Mental Health Act 2001 | | Law relevant to |

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| For3-L-013 | Describe the composition and functions of the FEDERAL MENTAL HEALTH AUTHORITY. SEC 3 | Forensic Medicine | mental health | |
| | 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 centre. SEC 10,11 | | | |
| | Explain holding of mentally disordered persons wandering in public places. SECT19 | | | |
| | Write the procedure of discharge from psychiatric centre SEC 20 | | | |
| For3-L-014 | Define child abuse | Forensic Medicine | Laws relevant to Domestic violence 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 | Describe the provisions for medical aid and treatment of injured persons to save their lives and protect their health during emergency. | Forensic Medicine | Injured Person (Medical Aid) Act 2004 | |
| | Describe the concept of the ancient law of torts | | Workman Compensation Act 1923 Employee social security ordinance 1965 | |
| For3-L-016 | Diagnose the injuries causing disablement and percentage loss of earning capacity. | | | Health Commission Act |
| For3-L-017 | Discuss the Health Commission Act | | | |

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| For3-L-018 | Describe the Consumers Protection Act in relation to Forensic Medicine | | Consumers Protection Act |
| For3-L-019 | Define and classify euthanasia. | | Euthanasia |
| | Describe different progonist and antagonist views. | | |
| | Reproduce global laws relevant to euthanasia. | | |
| | Discuss ethical and moral issues. | | |
| For3-L-020 | Define and classify suicide. | Forensic Medicine | 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 | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 04 | |
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| | | INTEGRATING DISCIPLINE | TOPIC |
| For3-Tox-001 | Enlist & define various branches of Toxicology | Forensic Medicine & Chemical Pathology | General Toxicology |
| | Define terms like drug, poison, dose, acute 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 | Differentiate between Drug and Poison Classify different poisons according to their mode of action | | Classification of Poisons |

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| | Enumerate legal classification of poisons | | |
| For3-Tox-003 | Describe routes of absorption, sites of metabolism and routes of excretion of poisons Enlist and describe different factors that modify the patient's response to a toxic agent. | | Factors affecting the absorption of poison |
| For3-Tox-004 | Enlist the clinical, ethical & statutory duties of a doctor while managing a case of poisoning. Collection, preservation, storage and dispatch of samples for toxicological analysis | | Duties of doctor |
| For3-Tox-005 | Diagnose a case of poisoning in living Enlist various bed side tests used for diagnosis of poisoning Interpret post-mortem findings in a suspected case of poisoning | | Diagnosis of a Poisoning case |
| For3-Tox-006 | Apply general principles in treatment of poisoning cases Prescribe general treatment measures to poisoning cases Briefly describe the procedures to remove the unabsorbed poisons from the body Describe the procedure of Gastric lavage Enlist complications of Gastric Lavage Enumerate contra indications of gastric lavage procedure Describe the role of Activated Charcoal in poisoning patient Enlist indications & contraindications of administering cathartics in poisoning cases Classify antidotes according to their mode of action Define & classify Chelators Enlist properties of ideal chelating agents Enlist & briefly describe the methods of removal of absorbed poisons from the body | | Treatment of a poisoned patient |
| For3-Tox-007 | Enlist medico-legal implications of poisoning cases | | Laws related to Drugs & |

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| | <p>Comprehend different laws relating to poisons & drugs</p> <p>Enlist important relevant points of Rule 8, Rule 13 & Rule 14 of the Dangerous Drug Act 1930</p> <p>Enlist WHO recommendations being incorporated in the Drug act 1976</p> <p>Enlist the WHO criteria for Drug Dependence</p> <p>Define National Formulary</p> | | poisons |
| For3-Tox-008 | <p>Explain, observe/perform the following analytical techniques:</p> <p>I. Spectrophotometric:</p> <ul style="list-style-type: none"> i. Calorimetric ii. Fluorometric iii. Automation. <p>II. Chromatographic:</p> <ul style="list-style-type: none"> i. Thin layer chromatography (TLC). ii. Gas liquid chromatography (GLC). iii. High pressure liquid chromatography (HPLC). iv. Gas liquid mass spectrometry (GL-MS). <p>III. Competitive binding assay or immunoreactive assay:</p> <ul style="list-style-type: none"> i. Radioimmunoassay (RIA). ii. Enzyme immunoassay (EIA). iii. Fluorescent Polarization immunoassay (FPIA). iv. Immunoturbidimetric assay. | | Analytical techniques |
| SPECIAL TOXICOLOGY | | | |
| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 09 | |
| | | INTEGRATING DISCIPLINE | TOPIC |
| For3-Tox-009 | <p>Classify corrosive poisons.</p> <p>Describe sources, physical and chemical properties.</p> <p>Explain mechanism of action.</p> <p>Write the fatal dose and fatal period.</p> <p>Describe the clinical features of the poison.</p> <p>Manage the patient clinically.</p> <p>Explain the autopsy findings.</p> | Forensic medicine & medicine | <p>Corrosives</p> <p>Mineral acids-</p> <p>Sulfuric acid</p> <p>Nitric acid</p> <p>Hydrochloric acid</p> <p>Strong alkalis</p> |

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| | <p>Describe medico-legal aspects.</p> <p>Define Vitriol age.</p> <p>Apply the relevant section of qisas and diyat act to the hurt caused by the poison.</p> | | |
| For3-Tox-010 | <p>Classify corrosive poisons.</p> <p>Describe sources, physical and chemical properties.</p> <p>Explain mechanism of action.</p> <p>Write the fatal dose and fatal period.</p> <p>Describe the clinical features of the poison.</p> <p>Manage the patient clinically.</p> <p>Explain the autopsy findings.</p> <p>Describe medicolegal aspects.</p> | | <p>Organic acid – Oxalic acid, Carbolic acid, Hydrocyanic acid</p> |
| For3-Tox-011 | <p>Classify snakes</p> <p>Differentiate between poisonous and non-poisonous snakes.</p> <p>Tabulate the differences between the elapids and vipers.</p> <p>Discuss the characteristics of snake venom.</p> <p>Describe the clinical feature of venomous snake bite.</p> <p>Explain clinical management of venomous snake bite.</p> <p>Discuss post mortem features and medico legal aspects of venomous snake bite.</p> | <p>Forensic medicine & medicine</p> | <p>Irritant Poisons Snakes- Elapids Vipers Hydrophidate or sea-snakes</p> |
| For3-Tox-012 | <p>Describe the sources, properties, routes of absorption of the poison.</p> <p>Reproduce the fatal dose, clinical features of the poison.</p> <p>Outline the clinical management of such case.</p> <p>Enlist the samples to be collected, preserved and sent to chemical examiner for its detection.</p> <p>State the post mortem appearances of the poison.</p> <p>Explain the medico legal aspects of acute poisoning of the poison.</p> | <p>Forensic medicine & medicine</p> | <p>Irritant Metallic poisons – (Inorganic metallic origin- Arsenic, Mercury, Lead, Copper Nonmetallic irritant poisons- Phosphorus</p> |

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| | <p>Describe the clinical features of chronic poisoning of the poison.</p> <p>Explain the laboratory investigations to establish the diagnosis.</p> <p>Summarize the clinical management of a case of poisoning with irritant poisons</p> <p>Describe post mortem findings.</p> <p>Describe post mortem findings.</p> <p>Discuss medico legal aspects of chronic poisoning.</p> | | |
| For3-Tox-013 | <p>Classify pesticides.</p> <p>Classify organophosphates.</p> <p>Describe the sources of exposure, mechanism of action and fatal dose and fatal period</p> <p>Explain clinical features of poisoning</p> <p>Summarize laboratory investigations and bed side test to confirm the diagnosis.</p> <p>Enlist the samples to be collected and sent to the chemical examiner.</p> <p>Know the clinical management.</p> <p>Reproduce the autopsy findings.</p> <p>Discuss the medico legal aspects.</p> | | <p>Agricultural poisons – Organophosphates, Carbamates, Chlorinated Hydrocarbon, Endrin Paraquet Aluminium Phosphide</p> |
| For3-Tox-014 | <p>Recall physical and chemical properties of the poison</p> <p>Describe different preparations of Cannabis</p> <p>Explain clinical features in acute and chronic poisoning,</p> <p>Reproduce fatal dose and fatal period.</p> <p>Know the clinical management of the poison.</p> <p>Enlist the samples to be collected and sent to the chemical examiner.</p> <p>Describe autopsy findings of the case.</p> <p>Explain the difference between the seeds of Datura and chilli.</p> <p>Outline medico legal aspects of acute and chronic poisoning.</p> | Forensic medicine & medicine | <p>Deleriant Poisons – Datura Cannabis Sativa</p> |

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| For3-Tox-015 | <p>Classify barbiturates. Know fatal dose and fatal period. Describe clinical features. Explain clinical management. Describe autopsy findings. Reproduce medico legal importance.</p> | Pharmacology | Sedatives and Hypnotics – Barbiturates |
| For3-Tox-016 | <p>Classify alkaloids of opium. Know the fatal dose and fatal period. Describe clinical features in acute and chronic poisoning. Describe the differential diagnosis of opium coma. Know laboratory investigations and bedside test. Explain clinical management. Explain autopsy findings Reproduce medico legal aspects Define drug dependence. Differentiate between drug dependence and drug habituation. Enlist drugs Describe criteria of drug dependence as per WHO criteria. of dependence.</p> | | Somniferous / Narcotics– (Opium - Morphine, Heroin) Drugs of dependence |
| For3-Tox-017 | <p>Define Alcohols Describe different alcohol beverages with different alcohol concentrations. Explain toxicokinetic of alcohols Reproduce clinical features of acute ethyl alcohol poison. Correlate different clinical features with different BAC. Outline clinical management of poisoning Describe the laboratory investigation and samples to be sent to the chemical examiner. Describe protocol of examination of a drunken person. Describe autopsy findings. Reproduce medicolegal aspects.</p> | | Inebriants – Ethyl Alcohol / Methanol, |

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| | <p>Describe clinical features of alcoholism.</p> <p>Explain clinical features of methanol toxicity</p> <p>Describe autopsy findings</p> <p>Reproduce medicolegal aspects of methanol poisoning.</p> | | |
| For3-Tox-018 | <p>Describe the sources of exposure of asphyxiant gases.</p> <p>State the mechanism of action.</p> <p>Explain clinical features of poisoning.</p> <p>Reproduce clinical management of cases of poisoning.</p> <p>Enlist samples to be collected and sent to chemical examiner.</p> <p>Outline autopsy features</p> <p>Explain medico legal aspects of acute poisoning of asphyxiants gases.</p> | Forensic Medicine | <p>Asphyxiant Gases - Carbon Mono oxide, Hydrogen Sulphide, Carbon Dioxide</p> |
| For3-Tox-019 | <p>Describe source of exposure</p> <p>Explain methods of inhalation.</p> <p>Reproduce clinical features</p> <p>Know the diagnostic findings on X rays chest.</p> <p>Explain clinical management</p> <p>Discuss autopsy findings</p> <p>Outline medico legal aspects of acute poisoning.</p> | | <p>CNS Stimulant - Cocaine Amphetamine Methyl phenidate (ritalin) Hallucinogens- LSD, Mescaline, Phencyclidine Tricyclic anti depressants - Sheesha (Nicotine + Fruits & Herbal Flavors & Coal</p> |
| For3-Tox-020 | <p>Describe source of exposure</p> <p>Explain methods of inhalation.</p> <p>Reproduce clinical features</p> <p>Know the diagnostic findings on X rays chest.</p> | Forensic Medicine | <p>Hydrocarbons-- kerosene oil, Volatile substance abuse Glue sniffing</p> |

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| | Explain clinical management Discuss autopsy findings Outline medico legal aspects of acute poisoning | | Sniffing Huffed Bagged |
| For3-Tox-021 | Describe source of exposure Reproduce clinical features Know the diagnostic findings Explain clinical management Discuss autopsy findings Outline medico legal aspects of acute poisoning. | | Black stone Paraphenylene diamine (PPD) |

FORENSIC SEROLOGY

| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 04 | |
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| | | INTEGRATING DISCIPLINE | TOPIC |
| For3-FS-001 | Define Forensic Serology Describe the Medico-legal importance of Forensic Serology | Forensic Medicine | Definition & medico-legal importance of Forensic Serology |
| For3-FS-002 | Define Trace Evidence Classify Trace Evidence Describe Locard's Exchange Principle | | Trace Evidence |
| For3-FS-003 | Describe the protocol of scientific study (identification, collection, preservation, storage, labeling and transport to the concerned quarter) of trace evidentiary material. | | Scientific study of trace evidentiary material |
| For3-FS-004 | Enlist the medico-legal importance of different biological fluids & stains | Forensic Medicine | Biological fluids |
| For3-FS-005 | Outline principles of chain of custody and its medico-legal significance | | chain of custody |
| For3-FS-006 | 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 | Pathology | Blood |
| | 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 | | |

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| | 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 | Briefly describe the scheme for examination of Seminal stain including physical, chemical, microscopic & serological tests including DNA Analysis. | Forensic Medicine | Semen |
| | Briefly describe the Medico-legal importance of seminal stain | | |
| For3-FS-008 | Briefly describe the physical, chemical, serological & microscopic examination of hair | | Hair |
| | Compare & contrast human and animal hair & hair like Structures as fibers. | | |
| | Enlist the Medico-legal significance of hair | | |
| For3-FS-009 | Enumerate the tests for determination of other body fluids like Milk, saliva, urine, fecal matter | | Body Fluids |
| | Briefly describe their medico-legal significance | | |
| For3-FS-010 | Explain the Structure of DNA. | | 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 | | | |
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| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 02 | |
| | | INTEGRATING DISCIPLINE | TOPIC |
| For3-FSc-001 | Describe search patterns of scene of crime. Photograph the area/object of interest from scene of crime. 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 Explain and demonstrate screening, chemical and microscopic analysis of biological stains. Describe forensic analysis of DNA. | Forensic medicine | Principles and methods of crime scene investigation |
| For3-FSc-002 | Describe the examination of firearm and tool mark evidence | Forensic medicine | Examination of firearm and tool mark evidence |
| For3-FSc-003 | Explain the examination of broken glass | | Examination of broken glass |
| PRACTICAL / LAB WORK | | | |
| LAW | | | |
| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 03 | |
| | | INTEGRATING DISCIPLINE | TOPIC |
| For3-L-021 | Demonstrate legal procedures and its presentation in the courts | Forensic Medicine | Legal Terms and Procedures |
| For3-L-022 | Demonstrate presentation of different stages of evidence in the court of law. | | Evidence |
| | Distinguish between different types of witness and its presentation in the court | | |
| For3-L-023 | Demonstrate the recording of dying deposition and dying declaration step wise. | Dying deposition and declaration | |

| GENERAL TOXICOLOGY | | | |
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| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 03 | |
| | | INTEGRATING DISCIPLINE | TOPIC |
| For3-Tox-022 | Assess a suspected patient of poisoning | Forensic Medicine | 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 | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 04 | |
| | | INTEGRATING DISCIPLINE | TOPIC |
| For3-Tox-023 | Identify corrosive poisons. Describe identifying features. | Forensic Medicine | Mineral acids- Sulfuric acid Nitric acid Hydrochloric acid Strong alkalis |
| | Recognize Autopsy features of H ₂ SO ₄ and HNO ₃ | | |
| | Apply the relevant section of qisas and diyat act to the hurt caused by the poison | | |
| For3-Tox-024 | Identify organic acid corrosive poisons | Forensic Medicine | Organic acid – Oxalic acid, Carbolic acid, Hydrocyanic acid |
| | Describe identifying features. Explain laboratory investigations Recognize autopsy findings. | | |
| For3-Tox-025 | Label salient differentiating features of poisonous and non-snakes. | Forensic Medicine | Irritant Animal Poisons (Snakes-Elapids Vipers Hydrophidate or sea-snakes |
| | Identify snake bite wound. | | |
| | Apply the tourniquet above the site of bite of a patient. | | |
| For3-Tox-026 | Identify poison. | Forensic Medicine | Irritant Metallic poisons – (Inorganic metallic origin- Arsenic, Mercury, Lead, Copper |
| | 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. | | |

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|--------------|--|-------------------|---|
| | Collect samples to be sent to the chemical examiner. | | Nonmetallic irritant poisons- Phosphorus |
| For3-Tox-027 | <p>Diagnose a case of insecticide poisoning</p> <p>Explain laboratory investigations</p> <p>Manage a case of insecticide poisoning</p> <p>Recognize autopsy features</p> <p>Collect, preserve and dispatch the specimens to chemical examiner</p> <p>Perform bedside test for certain pesticides (aluminium phosphide)</p> | Forensic Medicine | <p>Agricultural poisons – Organophosphates, Carbamates</p> <p>Chlorinated Hydrocarbon, Endrin</p> <p>Paraquet</p> <p>Aluminum Phosphide</p> |
| For3-Tox-028 | <p>Identify the poison</p> <p>Describe identifying features</p> <p>Diagnose a case of deliriant poisoning</p> <p>Explain lab investigation</p> <p>Manage the case</p> <p>Recognize autopsy features</p> <p>Collect, preserve and dispatch the specimens to chemical examiner</p> | Forensic Medicine | <p>Deliriant Poisons – Dhatura</p> <p>Canabis Sativa</p> |
| For3-Tox-029 | <p>Diagnose a case of sedatives / hypnotic's toxicity</p> <p>Explain lab investigation</p> <p>Manage the case</p> <p>Recognize autopsy features</p> <p>Collect, preserve and dispatch the specimens to chemical examiner</p> | Forensic Medicine | <p>Sedatives and Hypnotics – Barbiturates</p> |
| For3-Tox-030 | <p>Identify the poison (Opium / Poppy capsule)</p> <p>Describe identifying features</p> <p>Diagnose a case of narcotic poisoning</p> <p>Perform bedside test</p> <p>Explain lab investigations</p> <p>Recognize autopsy features</p> <p>Collect, preserve and dispatch the specimens to chemical examiner</p> | Forensic Medicine | <p>Somniferous / Narcotics– (Opium - Morphine, Heroine</p> <p>Drugs of dependence</p> |

| | | | |
|--------------|---|-------------------|--|
| For3-Tox-031 | <p>Diagnose a case of Acute alcohol Toxicity (Ethanol / Methanol)</p> <p>Explain lab investigations</p> <p>Manage the case</p> <p>Conduct examination of a case of ethyl alcohol toxicity and certify findings with opinion</p> <p>Collect appropriate samples</p> <p>Recognize autopsy features</p> <p>Collect, preserve and dispatch the specimens to chemical examiner</p> | Forensic Medicine | Inebriants – Ethyl Alcohol / Methanol, |
| For3-Tox-032 | <p>Diagnose a case of Asphyxiant gases</p> <p>Explain lab investigations</p> <p>Manage the case</p> <p>Recognize autopsy features</p> <p>Collect, preserve and dispatch the specimens to chemical examiner</p> | Forensic Medicine | Asphyxiant Gases - Carbon Mono oxide, Hydrogen Sulphide, Carbon Dioxide |
| For3-Tox-033 | <p>Identify the poison</p> <p>Describe identifying features</p> <p>Diagnose the case</p> <p>Explain lab investigation</p> <p>Manage the case</p> <p>Recognize autopsy features</p> <p>Collect, preserve and dispatch the specimens to chemical examiner</p> | Forensic Medicine | <p>CNS Stimulant – Cocaine Amphetamine Methyl phenidate (ritalin)</p> <p>Hallucinogens- LSD, Mescaline, PHEN CYCLIDINE</p> <p>Tricyclic anti depressants - Sheesha (Nicotine + Fruits & Herbal Flavors & Coal)</p> |
| For3-Tox-034 | <p>Identify the poison</p> <p>Diagnose the case</p> <p>Explain lab investigation</p> | Forensic Medicine | Hydrocarbons-- -- kerosene oil - Volatile |

| | | | |
|--------------------------|--|-------------------------------|--|
| | Manage the case Recognize autopsy features Collect, preserve, and dispatch the specimens to the chemical examiner | | substance abuse - Glue sniffing - Sniffing - Huffed - Bagged |
| For3-Tox-035 | Identify the poison Diagnose the case Explain lab investigation Manage the case Recognize autopsy features Collect, preserve, and dispatch the specimens to the chemical examiner | Forensic Medicine | Black stone Paraphenylene diamine (PPD) |
| FORENSIC SEROLOGY | | | |
| CODE | SPECIFIC LEARNING OUTCOMES | TOTAL HOURS = 06 | |
| | | INTEGRATING DISCIPLINE | TOPIC |
| For3-FS-011 | Categorize different trace evidence to Biological & Non-biological sources | Forensic Medicine | Trace evidence |
| For3-FS-012 | Identify, collect, preserve, label and dispatch trace evidentiary material to the concerned quarters. | | The scientific study of trace evidentiary material |
| For3-FS-013 | Interpret the physical characteristic of a suspected blood stain with naked eye & under UV lamp | | Bloodstain |
| For3-FS-014 | Preserve & seal the clothes with suspected blood/seminal stain | Forensic Medicine | Cloth examination |
| For3-FS-015 | Perform Screening tests (Benzedine & Phenolphethein/Kastle Mayer) on suspected blood stain | | 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 | | |
| | Differentiate various species (human, hen, goat and camel) with the help of microscopic examination of RBCs | | |
| For3- FS-016 | Identify & confirm the presence of semen with the help of microscopic examination | | Semen |
| For3- FS-017 | Prepare the slide of hair & Differentiate Human & Animal Hair under the microscope | | Hair |
| | Differentiate human/animal hair from cotton fiber, polyester fiber | | |

ASSESSMENTTOOLS

Students will be assessed by the following methods

1. Fortnightly Assessments

Assessments will be conducted every Monday.

2. Assignments/PBLs:

Assignments/PBLs will be given monthly.

3. Block Exam:

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

4. Departmental quizzes, presentations & group projects:

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

| 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 01 OSCE 03 OSVE | Marks 88 10 42 | 350 |
| | Part II SEQs (10) | 50 Marks | | | | |
| | 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 01 OSCE 03 OSVE | Marks 88 10 42 | 350 |
| | Part II SEQs (10) | 50 Marks | | | | |
| | 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 01 OSCE 03 OSVE | Marks 88 10 42 | 350 |
| | Part II SEQs (10) | 50 Marks | | | | |
| | Internal Assessment 10% | 35 Marks | Internal Assessment 10% | 35 Marks | | |
| | Total | 175 | Total | 175 | | |
| Total Marks: | | | | | | 1050 |

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 |

| 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 Assessment/Class participation/ Internal Quiz/Class Professional Behaviour/ 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 Practicals & 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 |

List of Resources

Anatomy

- 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

- 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

- 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

- 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

- 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 scenarios only) - 15th Edition
- Basic and Clinical Pharmacology by Katzung, McGraw-Hill. 16th Edition.

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- 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

- 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

- 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

- 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

- Patient Safety Curriculum Guide: Multi Professional Guide

Microbiology

- Levinson's review of Microbiology
- Medical Microbiology and Immunology by Levinson and Jawetz,

Pediatrics Medicine

- Nelson Textbook of Pediatrics
- Basis of Pediatrics by Pervez Akbar Khan

Gynecology

- Gynecology by Ten Teachers

Infection Control

- National Guidelines Infection Prevention and control, National Institute of Health Pakistan

Biosafety

- 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

- Oxford Handbook of General Practice, 5th Edition

Orthopedics

- Apley and Solomon's System of Orthopaedics and Trauma by Ashley Blom (Editor)

Rheumatology

- Davidson's Principles and Practice of Medicine
- Clinical Medicine by Parveen J Kumar & Michael Clark
- Hutchison's Clinical Methods by Michael Swash

Radiology

- Aids to Radiological Differential Diagnosis by Chapman S. and Nakielny R. 4th edition. Elsevier Science Limited; 2003.

Forensic Medicine

- Knight's Forensic Pathology by Barnard Knight 3rd edition
- G. Principles and Practice of Forensic Medicine by Prof. Nasib R. 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

- Forensic pathology 2nd edition by V.J. Deimaio CRC press Boca Raton London New York Washington DC

Toxicology

- Principles of clinical toxicology 3rd edition Thomas. Gossel CRC press Taylor and Francis group

Forensic Sciences

- 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

- Principles of Biomedical ethics, 8th edition by Tom. L. Beauchamp, James F. Childress.

Evidence Based Medicine

- Databases for the latest articles/manuscripts
- Clinical Practice Guidelines- local and international - (within last 3 years)
- Books (Latest edition-within last 5 years)

Pediatrics

- Nelson's Book of Pediatric 22 edition Illustrated book of Pediatrics, Pervaiz Akbar textbook peds medicine

Islamiyat

- Standard Islamiyat (compulsory) for B.A, BSc, MA, MSc, MBBS by Prof M Sharif Islahi.
- Ilmi Islamiyat(compulsory) for BA, BSc & equivalent.

IMPORTANTNOTE

**To be able to sit in Annual Exam
85% attendance and at least 50% in internal
assessment is mandatory**

DISCLAIMER

This module guide may be subject to changes and students should stay updated through official communication change.

