





**Modular Integrated
Curriculum 2K23**
MBBS Year-03

BLOCK-8





Block 8

Study Guide

Third Year MBBS

ISLAM MEDICAL COLLEGE

Sialkot – Pakistan

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BLOCK LEAD DETAILS

Hello, I am Dr. Azan Hassan working as an Assistant Professor in Pharmacology department of Islam Medical and Dental College, Sialkot and now acting as **a Block Lead of Block 8 (session 2026-2027)**. I completed my graduation from Shalamar Medical College, Lahore in 2020, and MPhil Pharmacology in 2025 from Federal Postgraduate Medical Institute, Lahore. You can come to meet me in Pharmacology department office, Academic Block 2 from 08:00 – 15:00 hours on weekdays. You can also contact me freely on my email azanhassan42456@gmail.com.

BLOCK 8
NEOPLASIA
INFECTIOUS DISEASES
MUSCULOSKELETAL & LOCOMOTION 2
FORENSIC & TOXICOLOGY 2
GUIDE

**Modular Integrated
Curriculum 2K23**
Volume-03

MODULE

16

NEOPLASIA



MODULE RATIONALE

Neoplasia module is essential to provide MBBS students with the knowledge and skills abilities necessary to comprehend the biological, clinical, and public health aspects of cancer. this module provides the foundation for effective cancer diagnosis, management, and prevention, it guarantees that our future doctor is well prepared to address one of the most pressing healthcare challenges of our time.

Aim of this module is to provide MBBS students with a comprehensive understanding of neoplasia, preparing them to diagnose, treat, and prevent cancer effectively in their future clinical practice.

The University of Health Sciences Vision

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

Islam Medical College Vision and Mission

Vision:

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

Mission:

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

CURRICULAR OUTCOMES (PLOS)

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

- PLO-1 Demonstrate the ability to independently manage non-critical clinical problems (Knowledge, Skill)
- PLO-2 Exhibit proficiency in life-saving procedures and the ability to assist in the management of critically ill patients. (Skill)
- PLO-3 Adhere to ethical principles and display attributes such as honesty, integrity, and confidentiality. (Attitude)
- PLO-4 Conduct research that contributes to the advancement of medical knowledge and brings relevance to healthcare practices (Knowledge, Skill)
- PLO-5 Act as an efficient community health promotor by advocating for health promotion and disease prevention. (Skill)
- PLO-6 Exhibit comprehensive scientific knowledge in all professional activities. (Knowledge)
- PLO-7 Demonstrate clear and efficient written and verbal communication skills to effectively communicate with patients, colleagues and other healthcare professionals. (Skills, Attitude)
- PLO-8 Embrace a lifelong learning mind set to maintain expertise, keep up with advancements in medical practices and improve professional development. (Knowledge, Skill)

MODULE OUTCOMES

- To understand the basic concept of neoplasia, including benign and malignant tumors (PLO-6)
- To describe the molecular and cellular mechanisms of carcinogenesis, including the role of genetic mutations, oncogenes, tumor suppressor genes, and environmental factors (PLO-4, PLO-6)
- To understand the classification of tumors based on histology, site of origin, and grading/staging systems (TNM classification) (PLO-1, PLO-6)
- To explain the biological mechanisms of tumor growth, invasion, angiogenesis, and metastasis (PLO-6)
- To explain the role of the immune system in tumor recognition and immune evasion mechanisms by cancer cells (PLO-6)

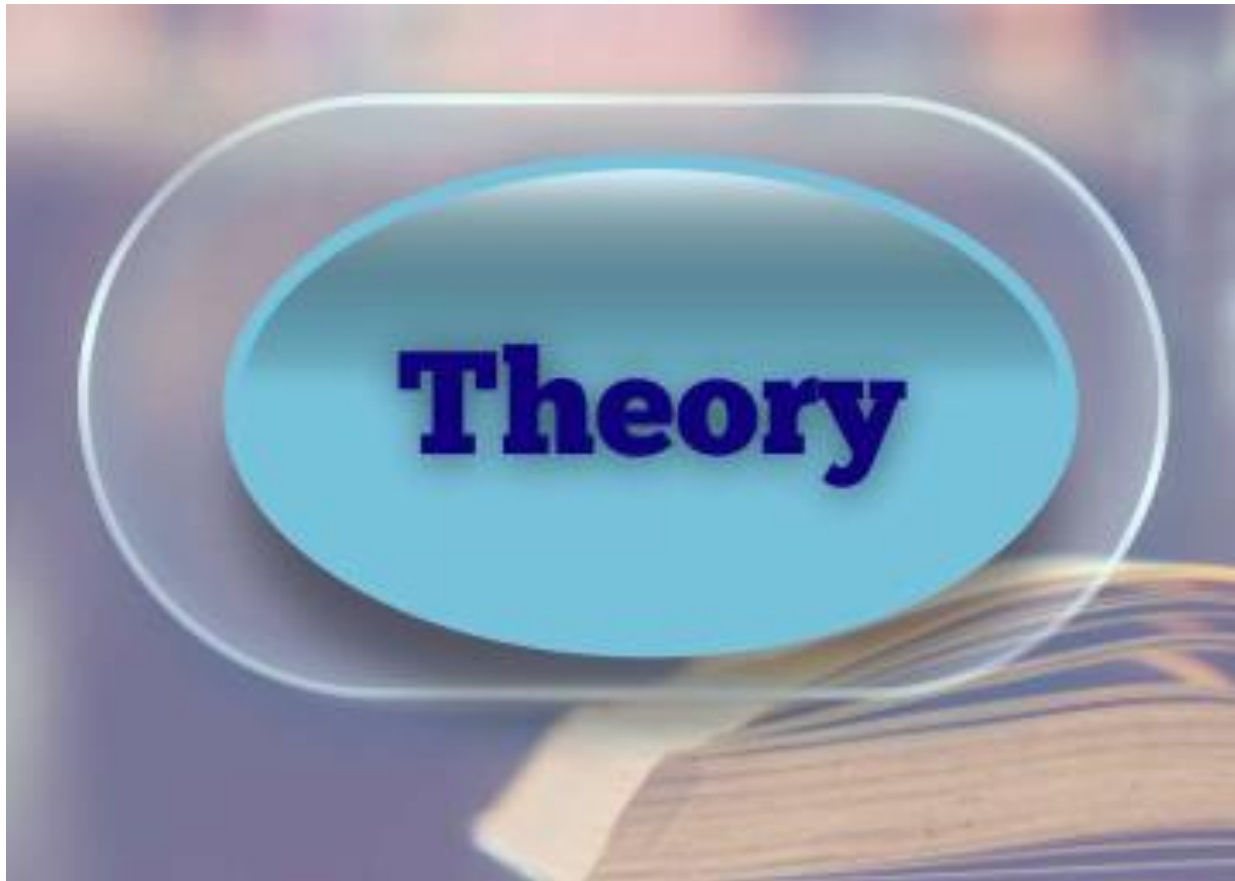
- To understand the general principles of cancer treatment, including surgery, chemotherapy, radiotherapy, immunotherapy, and targeted therapy (PLO-1, PLO-2, PLO-6)
- To understand how to utilize diagnostic tools, such as imaging and pathology (biopsy), to identify and assess neoplasms (PLO-1, PLO-6)
- To communicate effectively with patients and families about cancer diagnosis and treatment (PLO-3, PLO-7)

SUBJECTS INTEGRATED IN THE MODULE

- 1. Pathology**
- 2. Pharmacology**
- 3. Radiology**
- 4. Oncology**
- 5. Community Medicine**
- 6. Behavioral Sciences**
- 7. Biochemistry**
- 8. Surgery**

IMPLEMENTATION TORs

- The time calculation for completion of modules and blocks is based on 35 hours per week. Total hours of teaching, learning and formative/summative internal assessment to be completed in a year are 1200.
- The hours mentioned within each module are the mandatory minimum required. The rest of the hours are left to the discretion of the institution that can be used in teaching, learning and assessment as per decision of the institutional academic council.
- The content and the intended learning outcomes written are mandatory, to be taught, at the level required, as the end year assessment will be based on these.
- However, the level of cognition can be kept at a higher level by the institution.
- The Table of Specifications provided will be used for the three papers of the first professional examination. The same table of specifications should be used for the respective three block exams for internal assessment.



Block 8 (Module 16)					
PATHOLOGY					
CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOTAL HOURS = 15		
			TOPIC	Assessment Tool	TEACHING/ LEARNING
N-Pa-001	Define neoplasia. Describe the nomenclature of tumors. Differentiate between benign and malignant tumors based on morphological and functional characteristics. Explain the epidemiology of cancer.	Pathology	Introduction of neoplasia	MCQs, OSPE & OSVE	LGIS
N-Pa-002	Discuss the mechanisms of cell cycle dysregulation, apoptosis evasion, and angiogenesis in tumor progression. Explain the molecular basis of cancer. Describe the pathogenesis of neoplasia, including the role of genetic mutations, oncogenes, and tumor suppressor genes. Explain the process of metastasis. Differentiate between carcinomas, sarcomas, and lymphoreticular neoplasms.		Neoplasia		
N-Pa-003	Enlist the different types of carcinogenic agents. Describe the cellular mechanisms by which these carcinogenic agents induce neoplastic transformation		Carcinogenic agents		
N-Pa-004	Describe the role of biopsy and histopathology in the diagnosis of neoplasia. Explain the application of immunohistochemistry (IHC) and special stains in tumor diagnosis. Discuss the role of molecular diagnostics and		Tumor markers		

	common tumor markers in cancer detection and classification.	Pathology		MCQs, OSPE & OSVE	LGIS
N-Pa-005	Explain the tumor grading and staging. Describe treatment strategies for neoplasia in relation to grade and stage. Differentiate the processes of invasion and metastasis. Enlist common tumor markers with their clinical relevance.		Grading and Staging Invasion and metastasis		
N-Pa-006	Discuss the molecular basis of cancer.		Molecular basis of cancer		
N-Pa-007	Define paraneoplastic syndrome. Describe the clinical features of common paraneoplastic syndromes. Correlate specific paraneoplastic syndromes with their corresponding neoplastic lesions.		Paraneoplastic syndrome		
BIOCHEMISTRY					
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 02			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/LEARNING
N-B-001	Discuss molecular alterations in oncogenes and tumor suppressor genes. Describe the role of epigenetic modifications in cancer initiation and progression.	Biochemistry	Molecular Alterations in Cancer	MCQs, OSPE & OSVE	LGIS
RADIOLOGY					
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 06			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/LEARNING
N-Ra-001v	Explain the principles, applications, and limitations of common radiological imaging techniques: X-rays, ultrasound, CT scans, MRI, PET scans, and mammography.	Radiology	Radiology modalities	MCQs, OSPE & OSVE	LGIS

N-Ra-002	Explain basic principles of ionizing and non-ionizing radiation. Describe radiation protection measures and legal/ethical considerations in medical imaging. Identify common hazards of imaging and strategies to minimize patient and staff exposure. Recognize the consequences of inappropriate or wasteful imaging	Radiology	Radiology modalities	MCQs, OSPE & OSVE	LGIS
N-Ra-003	Identify radiological signs of cancer across different imaging modalities. Explain how imaging aids in the detection of primary tumors and metastases. Compare the sensitivity and specificity of various imaging techniques (e.g., CT vs. MRI for brain tumors) in cancer diagnosis.		Role of Imaging in Cancer Detection and Diagnosis		LGIS
N-Ra-004	Identify radiological findings associated with complications like: i. Tumor obstruction ii. Bone metastasis iii. Brain metastasis iv. Vascular invasion or thrombosis		Radiological Signs of Cancer Complications		LGIS
PHARMACOLOGY					
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 10			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/LEARNING
N-Ph-001	Explain the pathophysiology of the cell cycle. Describe how abnormalities in the cell cycle led to oncogenesis.	Pharmacology	Cell cycle	MCQs, OSPE & OSVE	LGIS
N-Ph-002	Explain the mechanism of action, adverse effects, indications, and drug interactions of various classes of cell cycle-specific and non-specific antitumor agents.		Cell Cycle specific and non-specific anti-tumor agent		

	Describe the drugs used for palliative therapy in various tumors. Discuss the drugs related to rehabilitation. Explain the drugs used during phases of radiotherapy, e.g., in tumor lysis syndrome. Describe the drugs used beside surgical resection of various tumors to treat complications. Explain the role of glucocorticoids as part of various anti-cancer cocktails.	Pharmacology		MCQs, OSPE & OSVE	LGIS
SURGERY					
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 01			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
N-S-001	Describe the basic principles and role of surgery in cancer management, including its use for curative and palliative purposes.	Surgery	Principles of oncologic surgery	MCQs, OSPE & OSVE	LGIS
COMMUNITY MEDICINE					
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 01			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
N-CM-001	Define cancer screening and explain its importance. Describe the methods of screening for common cancers. Identify the major risk factors for cancer. Explain the preventive and control measures for cancer.	Community Medicine	Cancer Screening	MCQs, OSPE & OSVE	LGIS
MEDICAL ONCOLOGY					
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 04			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
N-M-001	Describe the common presenting complain of	Medicine/ Oncology	Presenting Complain	MCQs, OSPE & OSVE	LGIS

	cancer patients and the approach to clinical examination during cancer treatment. Identify important clinical signs in patients with cancer	Medicine/ Oncology		MCQs, OSPE & OSVE	LGIS
N-M-002	Identify the risk factors for cancer development. Discuss the role of environmental and genetic factors in cancer development.		Risk factors		
N-M-003	Discuss the role of various investigations in the diagnosis and management of cancer patients.		Investigations		
N-M-004	Describe the common oncological emergencies. Explain the clinical implications of tumor metastasis. Discuss the types and features of paraneoplastic syndromes.		Oncological Emergencies & Paraneoplastic syndrome		
N-M-005	Discuss the role of surgery, radiotherapy, chemotherapy, and palliative care in cancer management.		Therapeutics in Oncology		
BEHAVIOURAL SCIENCES					
		TOTAL HOURS = 01			
CODE	SPECIFIC LEARNING OUTCOMES	INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
N-BhS-001	Discuss strategies to improve quality of life and provide holistic care for terminal cancer patients. Explain the principles of palliative care, including pain management and psychological support. Describe the importance of mental health support in the care of cancer patients.	Behavioral Sciences	Mental Health and Support in Cancer Patients	MCQs, OSPE & OSVE	LGIS

A blurred laboratory background featuring a pipette on the left and a rack of test tubes on the right. A central blue oval with a white border contains the word "Practicals" in white bold text.

Practicals

PRACTICALS					
PATHOLOGY					
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 06			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
N-Pa-008	Identify and differentiate between benign and malignant tumors based on gross and microscopic characteristics.	Pathology	Gross and Microscopic Identification of Benign and Malignant Tumors	OSPE	Practical
	Identify lipoma, leiomyoma, and fibroadenoma of the breast under the microscope and on gross specimens.				
	Identify and differentiate the gross and microscopic features of carcinoma in situ, including ductal carcinoma in situ (DCIS) and Bowen's disease.				
	Identify and describe the gross and microscopic features of adenocarcinoma. Identify and describe the gross and microscopic features of squamous cell carcinoma.				

Total Weeks	Total Hours
1.5	40

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Volume-03

MODULE

17

INFECTIOUS DISEASES



MODULE RATIONALE

Infectious diseases pose a universal threat to human health, ranging from mild to life-threatening conditions. This module aims to equip students with essential knowledge of common infections, including their transmission, clinical presentation, diagnosis, and treatment, while emphasizing the importance of infection control and biosafety. Students will learn the pathophysiology of conditions such as sepsis, septic shock, and pyrexia of unknown origin, as well as viral, bacterial, fungal, protozoal, and helminthic infections. Integrating infection control and biosafety into the curriculum, the module covers core safety principles like proper handling of biological materials, risk mitigation strategies, and the use of personal protective equipment (PPE), ensuring that students develop the skills to manage infections effectively while safeguarding public and healthcare worker safety through preventive measures such as immunization and sterilization. This comprehensive approach fosters a deeper understanding of clinical decision-making, laboratory investigations, and public health initiatives in infectious disease management.

MODULE OUTCOMES

- Demonstrate a systematic approach to assessing patients with suspected infections, including pyrexia of unknown origin and sepsis, while adhering to biosafety protocols to minimize the risk of infection transmission during patient evaluation (PLO-1, PLO-2, PLO-3)
- Diagnose common viral infections such as measles, chickenpox, rubella, mumps, influenza, COVID-19, and dengue based on clinical features and diagnostic tools, applying biosafety measures during sample collection and handling (PLO-1, PLO-6)
- Outline treatment options, including antiviral therapies, supportive care, and preventive measures (e.g., immunization) for viral infections (PLO-1, PLO-5, PLO-6)
- Diagnose and manage gram-positive and gram-negative bacterial infections such as pharyngitis, pneumonia, enteric fever, and meningitis (PLO-1, PLO-2, PLO-6)
- Describe the clinical features, diagnosis, and management of clostridial infections (botulism, gas gangrene) and sexually transmitted infections like syphilis (PLO-1, PLO-6)
- Recognize the clinical features and management strategies for mycobacterial infections, with a focus on pulmonary and abdominal tuberculosis (PLO-1, PLO-5, PLO-6)
- Identify and manage common fungal infections, including diagnosis, treatment, and preventive measures (PLO-1, PLO-6)
- Explain the clinical features, investigations, and treatment of protozoal infections such as amoebiasis and helminthic infections like ascariasis and hookworm (PLO-1, PLO-6)
- Describe the life cycle of helminths and explain how infections like hookworm contribute to anemia, along with prevention and treatment strategies (PLO-5, PLO-6)
- Diagnose and manage acute and chronic diarrhea based on etiologies such as bacterial, viral, and protozoal infections (PLO-1, PLO-2, PLO-6)
- Discuss strategies for immunization and prevention of vaccine-preventable diseases, including measles, mumps, rubella, and poliomyelitis (PLO-5, PLO-6, PLO-8)
- Apply empirical and definitive treatment protocols for various infectious diseases, including antibiotic stewardship and antiviral therapies (PLO-1, PLO-2, PLO-8)
- Analyze the epidemiology of diseases like dengue, rabies, and COVID-19, and propose public health interventions for their control and prevention (PLO-4, PLO-5, PLO-7)

- Describe the role of surgical interventions in infections like hydatid cysts, alongside medical management approaches (PLO-1, PLO-6)
- Recognize different types of Healthcare-Associated Infections (HAI), associated pathogens, transmission routes, and prevention strategies (PLO-3, PLO-6)
- Implement effective prevention and control measures for HAI in clinical settings to ensure patient safety (PLO-2, PLO-3, PLO-5)
- Identify and apply biosafety measures in laboratory and clinical settings to ensure safe handling of biological materials and minimize bio risk during infectious disease management (PLO-2, PLO-3)
- Evaluate the importance of bio risk management protocols in infection prevention strategies, focusing on the safe collection, storage, and disposal of biological samples to protect both healthcare workers and patients (PLO-3, PLO-5, PLO-8)

SUBJECTS INTEGRATED IN THE MODULE

1. Microbiology (Pathology)
2. Clinical Pharmacology & Therapeutics
3. Internal Medicine
4. Community Medicine
5. Paed's Medicine.
6. Surgery
7. Gynecology
8. Infection Control
9. Bio-risk management (Biosafety)
10. Clinical Rotation (CR)

IMPLEMENTATION TORs

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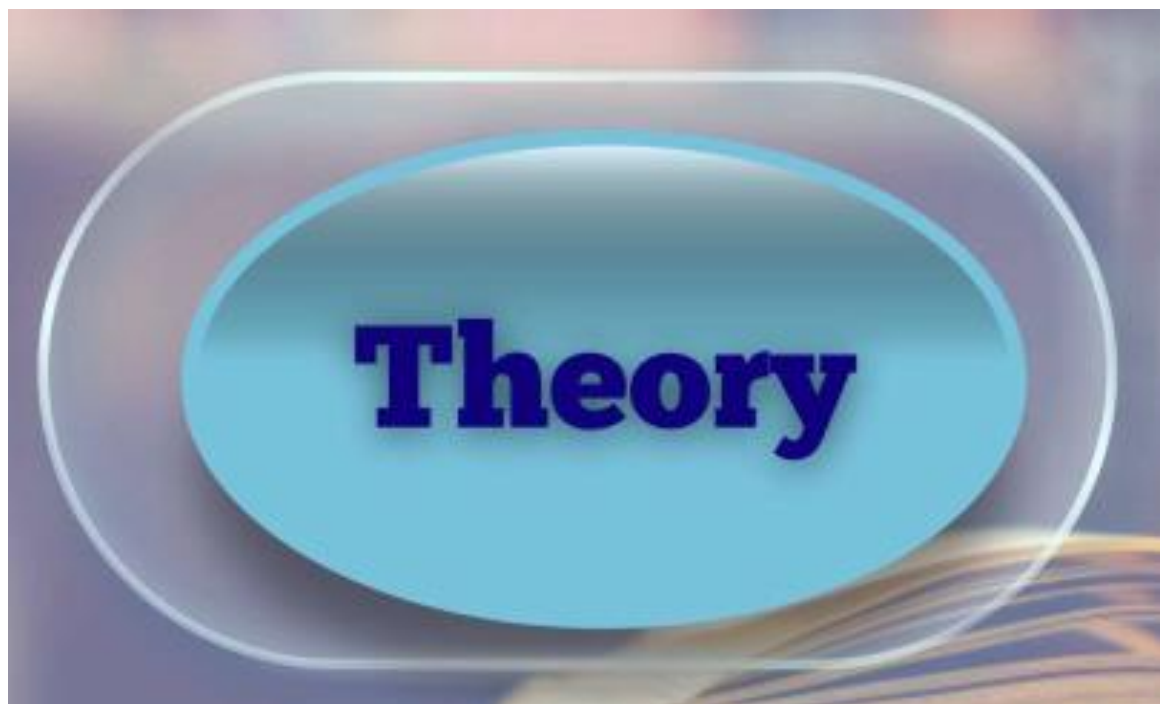
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MICROBIOLOGY					
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 53			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
ID-Pa-001	Explain the morphological, pathological and diagnostic aspects of Staphylococci, Streptococci, Clostridia, Bacillus, Corynebacterium, Listeria, and Gardnerella. Explain the morphological, pathological, and diagnostic aspects of Neisseria gonorrhoeae (gonococci), Neisseria meningitidis (meningococci), Escherichia coli, Salmonella, Shigella, Vibrio, Proteus, Pseudomonas, Helicobacter pylori, Campylobacter, spirochetes, Mycobacterium, Chlamydia, Rickettsia, and Actinomyces.	Microbiology	Bacterial infectious agents	MCQs, OSPE & OSVE	LGIS
ID-Pa-002	Explain the life cycles and diagnostic aspects of Wuchereria bancrofti, Dracunculus medinensis, Loa loa, Taenia saginata, Taenia solium, Echinococcus granulosus, Diphyllbothrium latum, Hymenolepis nana, Giardia lamblia, Entamoeba histolytica, Plasmodium species, Leishmania, Toxoplasma gondii, Trypanosoma species, Schistosoma, liver fluke, and Naegleria fowleri.		Parasitic infectious agents		
ID-Pa-003	Explain the morphological, pathological, and diagnostic aspects of dermatophytes, Malassezia furfur, Sporothrix schenckii, and Histoplasma capsulatum. Explain the morphological, pathological, and infections		Fungal Infection		

	diagnostic aspects of Coccidioides, Paracoccidioides, Blastomyces, Candida, Mucor, Aspergillus, and Cryptococcus.				
ID-Pa-004	Explain the morphological, pathological, and diagnostic aspects of adenoviruses, papillomaviruses, polyomaviruses, poxviruses, herpesviruses, hepadnaviruses, picornaviruses, hepeviruses, caliciviruses, and reoviruses. Explain the morphological, pathological, and diagnostic aspects of retroviruses, flaviviruses, togaviruses, coronaviruses, deltaviruses, paramyxoviruses, rhabdoviruses, orthomyxoviruses, and filoviruses.		Viral infectious agents		
ID-Pa-005	Enlist the organisms causing central nervous system (CNS) infections. Compare the CSF findings of viral and bacterial meningitis. Correlate the clinical features of CNS infections with the virulence factors, transmission, pathogenesis, and laboratory diagnosis of Streptococcus pneumoniae, Streptococcus agalactiae, Neisseria meningitidis, Haemophilus influenzae, Escherichia coli, Listeria monocytogenes, and Mycobacterium tuberculosis. Correlate the clinical aspects of CNS infections with the virulence factors, transmission, pathogenesis, and laboratory diagnosis of enteroviruses, mumps virus,	Microbiology	Microorganisms causing CNS infections	MCQs, OSPE & OSVE	LGIS

	herpes simplex virus, adenoviruses, Cryptococcus neoformans, rabies virus, Plasmodium species (malaria), Toxoplasma gondii, and Naegleria fowleri.				
ID-Pa-006	Enlist organisms causing diarrhea & food poisoning. Correlate the clinical aspects of gastrointestinal (GIT) infections with the virulence factors, transmission, pathogenesis, and laboratory diagnosis of Escherichia coli, Bacillus cereus, Salmonella species, Shigella species, Vibrio cholerae and other Vibrio species, Helicobacter pylori, Campylobacter jejuni, Clostridium species, and Entamoeba histolytica. Correlate the clinical aspects of gastrointestinal (GIT) infections with the virulence factors, transmission, pathogenesis, and laboratory diagnosis of Giardia lamblia, Cryptosporidium parvum, Diphylobothrium latum, Hymenolepis nana, Ancylostoma duodenale, Necator americanus, Ascaris lumbricoides, Enterobius vermicularis, Trichuris trichiura, Trichinella spiralis, poliovirus, hepatitis A and E viruses, norovirus, and rotavirus. Correlate clinically the following viruses via their virulence factors, transmission, pathogenesis, laboratory diagnosis in acute & chronic hepatitis; Hepatitis A, B, C, D, E, G Correlate clinically the virulence factors, transmission, pathogenesis, laboratory diagnosis of Entamoeba &	Microbiology	Microorganisms causing GIT infections	MCQs, OSPE & OSVE	LGIS

	Echinococcus in liver infections.	Microbiology		MCQs, OSPE & OSVE	LGIS
ID-Pa-007	Correlate clinically the virulence factors, transmission, pathogenesis, and laboratory diagnosis of organisms causing genital tract infections, including <i>Neisseria gonorrhoeae</i> , <i>Treponema pallidum</i> , <i>Chlamydia trachomatis</i> , <i>Mycoplasma hominis</i> , <i>Candida albicans</i> , <i>Trichomonas vaginalis</i> , <i>Gardnerella vaginalis</i> , hepatitis B virus, HIV, and herpes simplex virus type II.		Sexually transmitted infections		
ID-Pa-008	Describe and identify the key features, pathogenicity, and diagnostic aspects of the causative organisms of anthrax, plague, and selected bacterial zoonoses, including <i>Rickettsia</i> , <i>Leptospira</i> , <i>Brucella</i> , <i>Bacillus anthracis</i> , <i>Yersinia pestis</i> , <i>Francisella</i> , and <i>Bartonella</i>		Zoonotic infections		

PHARMACOLOGY					
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 18			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
ID-Ph-001	Classify cell wall synthesis inhibitors. Discuss the mechanism of action of beta lactam antibiotics,. Outline the mechanism of resistance to beta lactam antibiotics. Differentiate the clinical uses of beta lactam antibiotics. Enlist the major adverse effects of penicillin. Discuss the mechanism of action and clinical significance of beta lactamase inhibitors. Classify cephalosporin generations. Describe their antibacterial spectrum and clinical uses. Enumerate the clinical uses and enlist major adverse effects of cephalosporin generations. Describe important features of the carbapenems and monobactam. Enumerate the membrane active antibiotics. Describe the mechanism of action of membrane, clinical uses, adverse effects of active antibiotics, Describe the mechanism of resistance of membrane active antibiotics. Describe antibacterial spectrum, mechanism of action, resistance, clinical uses, and toxicity of vancomycin. Describe clinical features of Redman Syndrome. Enlist antibacterial spectrum of vancomycin. Discuss mechanism of action, resistance, clinical uses,	Pharmacology	Cell Wall Inhibitors	MCQs, OSPE & OSVE	LGIS

	and toxicity of vancomycin. Describe the pharmacological significance of Redman Syndrome.				
ID-Ph-002	Explain briefly the steps of protein synthesis. Classify protein synthesis inhibitors. Discuss mechanism of action, resistance, antibacterial spectrum, clinical uses, adverse effects of tetracyclines. Classify macrolide Describe the mechanism of action and pharmacokinetics, antimicrobial spectrum, clinical uses, adverse effects of macrolides. Enlist mechanism of resistance and drug interactions of macrolides. Discuss mechanism of action, pharmacokinetics, clinical uses and adverse effects of clindamycin. Explain mechanism of action, resistance, antibacterial spectrum, pharmacokinetics, clinical uses and adverse effects of chloramphenicol. Describe pharmacological significance of Gray Baby Syndrome. Enlist major pharmacokinetic characteristics of streptogramins. Classify antifolate drugs. Classify sulfonamides. Describe mechanism of action, clinical uses, and adverse effects. Outline clinical features of Steven Johnsons Syndrome. Explain mechanism of actions, resistance, antibacterial	Pharmacology	Protein Synthesis Inhibitors	MCQs, OSPE & OSVE	LGIS.

	spectrum, pharmacokinetics, clinical uses and adverse effects of trimethoprim and cotrimoxazole. Classify aminoglycosides. Describe the mechanism of action of aminoglycosides Describe the mechanism of resistance of aminoglycosides. Discuss the clinical uses, adverse effects of aminoglycosides. Classify Fluoroquinolones. Describe the mechanism of action, resistance, clinical uses, and adverse effects of Fluoroquinolones.				
ID-Ph-003	Classify antituberculosis drugs into 1st line and 2nd line agents with examples. Describe the characteristic pharmacodynamics and pharmacokinetic properties of Rifampin, Isoniazid, Ethambutol and Pyrazinamide. Discuss the adverse effects of 1st line antituberculosis drugs. Describe standard protocols (WHO recommendation) for management of newly diagnosed pulmonary tuberculosis, multidrug-resistant tuberculosis, latent tuberculosis. Describe how to monitor patients during antituberculosis drug therapy. Discuss 2nd line drugs used in treatment of multidrug resistant tuberculosis with their therapeutic and adverse effects	Pharmacology	Antituberculosis Therapy (ATT)	MCQs, OSPE & OSVE	LGIS
ID-Ph-004	Enumerate the drugs for leprosy. Explain standard protocols (WHO recommendation) for management of leprosy.		Drugs used in Leprosy		

	Describe their mechanism of action and adverse effects.				
ID-Ph-005	Classify antiprotozoal drugs. Classify antimalarial drugs. Describe the mechanism of action and mechanism of resistance, clinical uses, adverse effects of Antimalarial drugs. Discuss mechanism of action, pharmacokinetics, clinical uses and adverse effects of antiprotozoal drugs used for the treatment of amoebiasis, giardiasis, Leishmaniasis, and Trypanosomiasis.		Antiprotozoal Drugs		
ID-Ph-006	Classify anti-helminthic drugs. Discuss mechanisms of action, clinical uses, adverse effects of anthelmintic drugs.		Anti-Helminthic Drugs		
ID-Ph-007	Classify antifungal drugs. Discuss drugs used for systemic mycotic infections. Discuss mechanisms of action and resistance, pharmacokinetics, clinical uses, adverse effects of antifungal drugs.	Pharmacology	Antifungal Drugs Classification	MCQs, OSPE & OSVE	LGIS
ID-Ph-008	Classify antiviral drugs. Discuss the main steps of viral replication that are targets for antiviral drugs. Describe drugs used in treatment of herpes simplex, varicella zoster, and cytomegalovirus virus infection with their pharmacological properties, mechanism of action and adverse effects. Explain the mechanism of action, pharmacodynamics and adverse effects of acyclovir, valacyclovir, and		Antiviral Agents		

	famciclovir. Classify antiretroviral agents. Discuss their mechanism of action, resistance, pharmacokinetics, clinical uses, and adverse effects. Classify drugs for treatment of Hepatitis B & C. Discuss their mechanism of action, resistance, pharmacokinetics, clinical uses, and adverse effects. Enumerate the drugs used to treat coronavirus Describe their mechanism of action and their adverse effects.				
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COMMUNITY MEDICINE					
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 06			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
ID-CM-001	Identify the risk factors of TB Analyze the local and global burden of Tuberculosis Discuss prevention and control measures for Pulmonary TB in line with WHO strategies to control TB. Explain significance of TB DOTS therapy for TB control	Community Medicine	Tuberculosis	MCQs, OSPE & OSVE	LGIS
ID-CM-002	Explain the global burden of hepatitis. Discuss the importance of awareness and screening of hepatitis. Explain effective prevention methods for each type of hepatitis. Discuss role of vaccination and public health initiatives for prevention and control of hepatitis. Describe the measures for prevention of vertical transmission (from mother to child) of Hepatitis B virus.		Hepatitis		
ID-CM-003	Describe the global polio eradication initiative.		Polio		

	Discuss the historical and current global impact of poliomyelitis vaccination efforts. Evaluate the effectiveness of different poliovirus vaccines (OPV and IPV) and outline the vaccination schedules. Discuss community health strategies for poliovirus surveillance, outbreak response, and vaccination campaigns. Describe 'end game strategy' by WHO for polio eradication.				
ID-CM-004	Discuss the global distribution of measles, mumps, rubella, and their occurrence in different population groups. Describe the mode of transmission and the highly contagious nature of measles, mumps, and rubella. Discuss the role of vaccination coverage and herd immunity in controlling outbreaks of measles, mumps, and rubella. Explain public health strategies for prevention and control of measles, mumps, and rubella including vaccination campaigns, surveillance, and outbreak response.	Community Medicine	Measles, Mumps, Rubella	MCQs, OSPE & OSVE	LGIS
ID-CM-005	Describe the goals and objectives of the Expanded Program of Immunization (EPI) in Pakistan. List the key vaccines included in the EPI schedule. Identify the strategies employed to implement the EPI in various communities. Evaluate the role of healthcare workers, community		EPI		

	leaders, and families in promoting immunization. Identify the common barriers to immunization coverage in Pakistan. Describe enhance vaccination uptake. Discuss recent developments in the EPI, Pakistan.				
ID-CM-006	Describe the role of DTP vaccination in preventing diphtheria. Identify the recommended vaccine schedule for children and adults. Analyze community-based vaccination campaigns. Analyze public awareness programs & school health initiatives to control its transmission.	Community Medicine	Diphtheria	MCQs, OSPE & OSVE	LGIS
ID-CM-007	Identify the global distribution of tetanus, including endemic areas and populations at higher risk. Describe the role of tetanus vaccination (Td or Tdap) in children and adults. Explain the importance of booster doses and timely immunization after potential exposure to contaminated wounds. Discuss the importance of seeking medical attention for injuries and educating the community about wound care.		Tetanus		

INTERNAL MEDICINE					
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 05			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
ID-M-001	Define pyrexia of unknown origin and state the diagnostic criteria. Classify the major etiological groups of PUO. Describe briefly the initial clinical approach to a patient	Medicine	Pyrexia of unknown origin	MCQs, OSPE & OSVE	LGIS

	with PUO.				
ID-M-002	Define sepsis and septic shock. Identify common causes of sepsis. Describe the key clinical signs and red flags of systemic infection. Outline basic laboratory and bedside investigations to diagnose sepsis. Plan the initial management and discuss preventive strategies.	Medicine	Sepsis	MCQs, OSPE & OSVE	LGIS
ID-M-003	Define meningitis. Identify the common signs and symptoms of meningitis. Describe the clinical importance of meningeal signs (Kernig's and Brudzinski's). 97 Outline the key investigations used in the diagnosis of meningitis.		Meningitis		
ID-M-004	Diagnose and differentiate between upper and lower respiratory tract infections based on clinical presentation. Identify common causative organisms. Identify warning signs. Outline basic investigations to establish diagnosis and plan the management.		Respiratory tract infection		

GYNAECOLOGY					
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 02			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
ID-GO-001	Describe the routes of transmission of Human Papillomavirus. Diagnose HPV infection based on clinical presentation. Explain the role of HPV vaccination, including	GYNAECOLOGY	HPV	MCQs, OSPE & OSVE	LGIS

	recommended age groups, vaccine types, and schedules. Describe preventive strategies and predict the possible outcomes of HPV infection.				
ID-GO-002	Define pelvic inflammatory disease. Identify common causative organisms and risk factors. Diagnose PID based on clinical presentation. Outline the diagnostic approach and plan the management.	GYNAECOLOGY	Pelvic inflammatory disease	MCQs, OSPE & OSVE	LGIS

PEDIATRICS MEDICINE

CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 02			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
ID-Pe-001	Define fever in children and differentiate it from hyperthermia. Identify common causes of fever in pediatric age group. Identify danger signs in a febrile child. Outline the steps of initial management and preventive measures including immunization and parental guidance.	Pediatrics	Fever in children	MCQs, OSPE & OSVE	LGIS
ID-Pe-002	Identify common infectious causes of diarrhea in children. Differentiate between mild, moderate, and severe dehydration in children based on clinical assessment findings. Outline the management plan and explain preventive measures.		Diarrhea in children		

SURGERY

CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 02			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
ID-S-001	List the common risk factors that predispose to surgical		Surgical site infections		

	site infections. Identify early clinical features suggestive of a surgical site infection. Outline steps of initial management and prevention strategies. Describe the potential outcomes of untreated or poorly managed SSI.	Surgery		MCQs, OSPE & OSVE	LGIS
ID-S-002	Define surgical antibiotic prophylaxis and its role in preventing infection. Explain the principles of timing, choice, and duration of prophylaxis. Recognize the consequences of inappropriate use. Discuss the role of prophylaxis as part of a wider infection control strategy.		Antibiotic prophylaxis		

INFECTION CONTROL

CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 08			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
ID-IC-001	Differentiate between contact, droplet, and airborne precautions for infection prevention and control. Discuss appropriate isolation and patient-care practices to prevent the spread of infectious agents. Explain the importance of adherence to transmission-based precautions in reducing healthcare-associated infections.	Community medicine	Transmission-based precautions	MCQs, OSPE & OSVE	LGIS
	Distinguish between cleaning, disinfection, and sterilization. Describe the levels of disinfection and their relevance in clinical practice. Identify commonly used sterilization methods and their indications.	Microbiology	Cleaning, disinfection, and sterilization.		

	Explain the importance of proper instrument handling to prevent hospital-acquired infections and surgical site infections. Discuss the consequences of inadequate cleaning and sterilization.				
	Define ventilator-associated pneumonia (VAP). Identify the common risk factors for VAP in critically ill and mechanically ventilated patients. Describe the typical clinical features and warning signs suggestive of VAP. Outline the basic diagnostic approach to suspected VAP. Explain the principles of prevention and discuss the potential outcomes and consequences of VAP. Identify the role of the surgical/clinical team in early recognition and prevention of VAP.	Medicine	Ventilator-associated pneumonia		
	Define hospital-acquired infections and enlist its types. Describe the major risk factors for developing HAIs in hospitalized patients. Identify the warning signs and clinical features suggestive of HAIs. Explain the principles of prevention and control of HAIs. Discuss the consequences of HAIs for patients, healthcare providers, and the healthcare system. Relate the importance of rational antibiotic use in preventing antimicrobial resistance linked to HAIs. Outline the role of the surgical team in preventing HAIs.	Community Medicine	Hospital acquired infections		

	Discuss the safe work practices that reduce the risk of infection transmission in healthcare settings. Describe the safe disposal of sharps and waste. Explain aseptic technique and safe handling of invasive devices, in infection prevention.	Medicine/ Surgery	Safe work practices in healthcare settings		
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PATIENT SAFETY					
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 05			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
ID-PS-001	Define biosafety and biosafety levels according to WHO. Describe biosafety levels. Enlist the bio risk organisms in each of biosafety levels. Discuss the safety protocols of BSL 1. Discuss the safety protocols of BSL 2. Discuss the safety protocols of BSL 3. Discuss the safety protocols of BSL 4. Define biological waste. (BRM) Categorize the biological wastes. Describe procedures for segregation, storage, treatment and disposal of biological waste. Define spill management. Discuss the steps for the management of a laboratory spill. Define personal protective equipment. Discuss the situations under which PPE should be used by the health care professionals. Discuss the SOP of transportation of biological samples. Define bio risk management.	Microbiology	Bio-Risk Management (BRM)	MCQs, OSPE & OSVE	LGIS

	Explain its relevance in healthcare and laboratory settings. Identify common biological hazards encountered in clinical, surgical, and laboratory environments. Describe key components of bio risk management. Outline the steps of proper specimen handling, safe waste disposal, and correct use of protective equipment in healthcare facilities. Explain the role of institutional policies, training, and emergency preparedness in ensuring effective bio risk management.	Microbiology	Bio-Risk Management (BRM)	MCQs, OSPE & OSVE	LGIS
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PRACTICALS					
MICROBIOLOGY					
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 10+04			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
ID-Pa-009	Identify the stained slides of Gram-positive organisms (Staphylococci, Streptococci, Streptococcus pneumoniae), Gram-negative organisms (Neisseria, Escherichia coli, Proteus), and acid-fast bacilli under microscope. (If slides are not available, photographic slides should be used).	MICROBIOLOGY	Staining	OSPE	Practical
ID-Pa-010	Interpret the culture sensitivity reports and antibiogram of gram positive and gram-negative bacteria		Laboratory reporting		
ID-Pa-011	Identify and describe the growth characteristics of organisms on common culture media: Blood agar, Chocolate agar, Nutrient agar, TCBS, MacConkey agar, LJ medium, CLED agar, TSI, Urease, Citrate, blood culture bottles, and in anaerobic jars.		Culture sensitivity		
ID-Pa-012	Identify the ova, cysts, and trophozoites of protozoans, helminths, cestodes and schistosomes under microscope. Perform the urine complete examination.		Stool & Urine examination		
ID-Pa-015	Perform and interpret the catalase test, coagulase test, and oxidase test.		Laboratory tests		
PHARMACOLOGY					
ID-Ph-009	Prepare and dispense 4 doses of APC Powder. Prepare and dispense doses of carminative mixture. Write prescription for the following clinical conditions:	Pharmacology	Prescription	OSPE	Practical

	Urinary Tract Infection, Acute Bacillary Dysentery, Malaria, Amoebiasis, Helminthic infections, Hepatitis B and C, Dengue, COVID, Typhoid fever, Community acquired pneumonia and Pulmonary Tuberculosis				
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Total Weeks	Total Hours
03	115

**Modular Integrated
Curriculum 2K23**
Volume-03

MODULE

18

**MUSCULOSKELETAL
& LOCOMOTION-II**



MODULE RATIONALE

The Musculoskeletal & Locomotion II module is designed to deepen medical students' understanding of the musculoskeletal system, integrating knowledge from multiple disciplines to enhance the management of musculoskeletal disorders and injuries. This module emphasizes the interconnectedness of various fields, including orthopedics, surgical traumatology, forensic traumatology, and rheumatology, while also incorporating essential subjects such as pathology, pharmacology, community medicine, behavioral sciences, radiology, and evidence-based medicine.

Integrated Learning: This module promotes an integrated approach to understanding the musculoskeletal system. By combining orthopedics, surgical traumatology, forensic traumatology, and rheumatology, students will gain a holistic perspective on diagnosis and treatment, preparing them for the complexities of clinical practice. Pathology and

Pharmacology: Understanding the underlying pathology of musculoskeletal disorders is essential for effective management. This module emphasizes the importance of pathology and pharmacology, equipping students with the knowledge to identify disease mechanisms and select appropriate pharmacological interventions for pain management and inflammation control.

Community Medicine and Behavioral Sciences: Musculoskeletal disorders significantly impact community health and patient well-being. The module includes community medicine to address the epidemiology, prevention, and health promotion aspects of musculoskeletal conditions. Additionally, behavioral sciences will be integrated to enhance understanding of patient behavior, adherence to treatment, and the psychosocial factors affecting recovery.

Radiology and Evidence-Based Medicine: Proficiency in interpreting radiological findings is crucial for diagnosing musculoskeletal conditions. The module will cover radiological techniques relevant to orthopedics and traumatology, allowing students to correlate imaging results with clinical findings. Furthermore, an emphasis on evidence-based medicine will teach students how to critically appraise research and apply findings to clinical decision-making, ensuring the delivery of high-quality patient care.

Real-World Applications: By focusing on both common and complex musculoskeletal disorders, including those requiring surgical intervention, students will develop the skills necessary to assess and manage a wide range of conditions. This prepares them for future roles in various healthcare settings, from primary care to specialized practices.

Multidisciplinary Collaboration: The management of musculoskeletal disorders often requires a team approach, involving collaboration with specialists in orthopedics, rheumatology, radiology, and rehabilitation. This module fosters an appreciation for interdisciplinary teamwork and the importance of effective communication in providing optimal patient care.

MODULE OUTCOMES

- Explain the pathology and underlying mechanisms of common musculoskeletal disorders and injuries, including septic arthritis, osteomyelitis, fractures, and degenerative conditions (PLO-1, PLO-6)
- Identify key features of various musculoskeletal disorders, including their clinical presentations, epidemiology, and impact on community health (PLO-1, PLO-5, PLO-6)
- Perform thorough musculoskeletal examinations to assess joint mobility, strength, and functional capabilities (PLO-1, PLO-7)
- Interpret relevant imaging studies (e.g., X-rays, MRI, CT scans) to aid in the diagnosis and management of musculoskeletal conditions (PLO-1, PLO-6)
- Apply appropriate first aid measures for common musculoskeletal injuries, including immobilization techniques and pain management strategies (PLO-1, PLO-2)
- Integrate knowledge from orthopedics, surgical traumatology, forensic traumatology, and rheumatology to develop comprehensive management plans for patients with musculoskeletal conditions (PLO-1, PLO-2, PLO-6)
- Collaborate effectively with healthcare professionals from diverse specialties, including pathology, pharmacology, community medicine, behavioral sciences, and radiology, to enhance patient care (PLO-7, PLO-3)
- Critically evaluate and apply current evidence-based guidelines and research findings to inform clinical decision-making in the management of musculoskeletal disorders (PLO-4, PLO-8)
- Formulate treatment plans that incorporate pharmacological and non-pharmacological interventions based on best practices and individual patient needs (PLO-1, PLO-8)
- Demonstrate empathy and effective communication skills when interacting with patients suffering from musculoskeletal disorders, ensuring a patient-centered approach to care (PLO-3, PLO-7)
- Educate patients about their conditions, treatment options, and the importance of adherence to management plans for optimal outcomes (PLO-5, PLO-7)
- Recognize the ethical considerations and challenges in the management of musculoskeletal disorders, including issues related to informed consent, patient autonomy, and resource allocation (PLO-3)
- Exhibit professionalism in all interactions with patients, families, and healthcare team members, promoting a culture of respect and trust (PLO-3, PLO-7)

SUBJECTS INTEGRATED IN THE MODULE

1. Orthopedics
2. Rheumatology
3. Surgery/ Traumatology
4. Forensic Traumatology
5. Pathology
6. Pharmacology
7. Community Medicine
8. Behavioral Sciences
9. Radiology
10. Evidence-Based Medicine

IMPLEMENTATION TORs

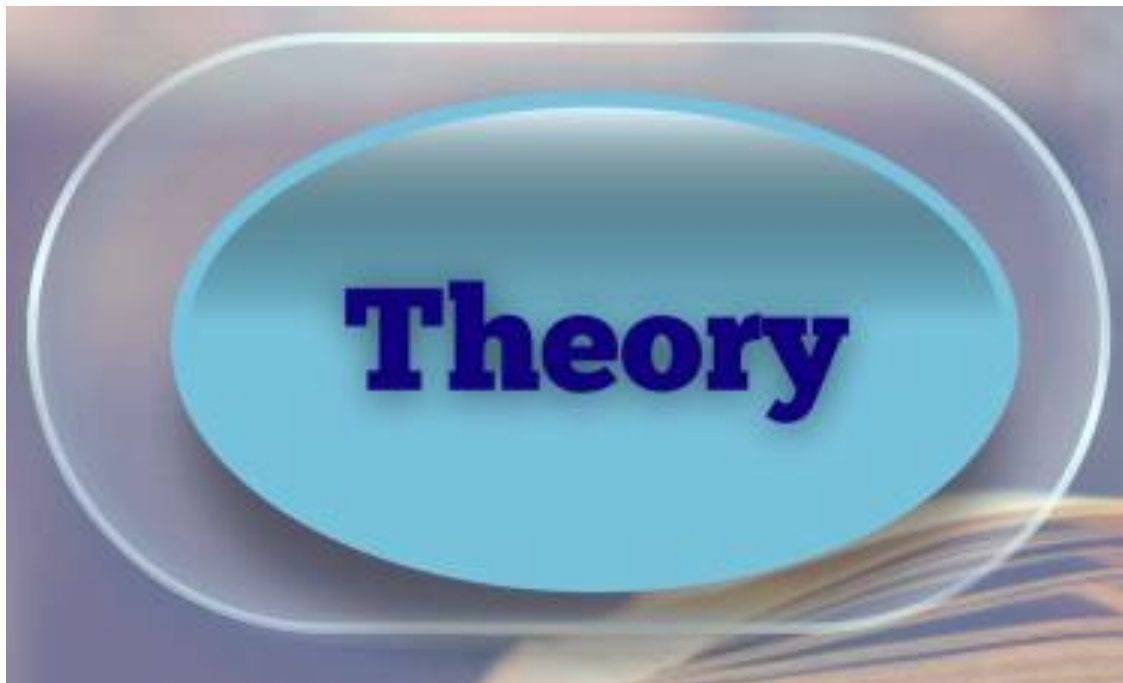
The time calculation for completion of modules and blocks is based on 35 hours per week. Total hours of teaching, learning and formative/summative internal assessment to be completed in a year are 1200.

The hours mentioned within each module are the mandatory minimum required. The rest of the hours are left to the discretion of the institution that can be used in teaching, learning and assessment as per decision of the institutional academic council.

The content and the intended learning outcomes written are mandatory, to be taught, at the level required, as the end year assessment will be based on these.

However, the level of cognition can be kept at a higher level by the institution.

The Table of Specifications provided will be used for the three papers of the first professional examination. The same table of specifications should be used for the respective three block exams for internal assessment



RHEUMATOLOGY					
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 17			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
MS2-Rh-001	Explain the immunopathogenesis and underlying mechanisms leading to Rheumatoid Arthritis (RA). Diagnose RA based on characteristic clinical features. Differentiate RA from other causes of polyarthritis based on clinical and laboratory findings. Interpret relevant investigations. Discuss the diagnostic criteria for confirming RA. Outline the management plan.	Rheumatology/ Medicine	Rheumatoid Arthritis	MCQs, OSPE & OSVE	LGIS
MS2-Rh-002	Identify risk factors for contributing to the development and progression of osteoarthritis. Describe the clinical features and typical pattern of joint involvement in OA. Differentiate OA from other types of arthritis based on clinical presentation and investigation. Interpret relevant diagnostic investigations. Outline management plan. Identify the complications and functional limitations associated with OA.		Osteoarthritis		
MS2-Rh-003	Define crystal arthritis. Differentiate between gout and pseudogout. Describe the pathophysiology of monosodium urate and calcium pyrophosphate crystal deposition in joints. Identify risk factors and precipitating causes		Crystal Arthritis (Gout/Pseudo gout)		

	associated with gout and pseudogout. Describe clinical features and stages of gout. Interpret relevant laboratory and imaging findings. Discuss management strategies. Identify potential complications.				
MS2-Rh-004	Define systemic inflammatory vasculitis and classify its major types. Describe the pathophysiological mechanisms underlying systemic vasculitis. Identify common etiological factors and associations of systemic vasculitis. Identify the characteristic clinical features and organ involvement in different types of vasculitis. Discuss the diagnostic approach including relevant laboratory tests, imaging, and biopsy findings. Differentiate between major types of vasculitis on the basis of clinical and diagnostic features. Outline principles of management including pharmacological and supportive therapies. Discuss potential complications and long-term outcomes of systemic inflammatory vasculitis.	Rheumatology/ Medicine	Systemic Inflammatory Vasculitis	MCQs, OSPE & OSVE	LGIS
MS2-Rh-005	Describe the genetic predisposition and immunopathogenesis of ankylosing spondylitis. Identify the cardinal clinical features of ankylosing spondylitis.		Ankylosing spondylitis.		

	Interpret the diagnostic criteria and characteristic radiological findings. Differentiate ankylosing spondylitis from mechanical back pain and other spondyloarthropathies. Outline treatment principles including pharmacological, physical therapy, and lifestyle modifications. Describe its complications, disability risks, and long-term prognosis.				
MS2-Rh-006	Define SLE and describe its immunopathogenesis. List common risk factors and triggers (genetic, environmental, hormonal). Identify the clinical manifestations involving skin, joints, kidneys, hematological and nervous systems. Describe diagnostic criteria and relevant laboratory investigations. Outline the principles of management including pharmacological and supportive measures.	Rheumatology/ Medicine	Systemic Lupus Erythematosus (SLE)	MCQs, OSPE & OSVE	LGIS
MS2-Rh-007	Define systemic sclerosis and classify its major types. Describe the pathophysiological changes in it. Identify the key clinical features including skin thickening, Raynaud's phenomenon, and internal organ involvement. Identify diagnostic tests and autoantibodies associated with systemic sclerosis. Outline the management strategies including symptomatic treatment and prevention of complications.		Systemic sclerosis		

MS2-Rh-008	Define polymyositis and dermatomyositis, highlighting their autoimmune basis. Identify characteristic clinical features. Discuss laboratory and diagnostic investigations. Outline the management approach including immunosuppressive therapy and physiotherapy.	Rheumatology/ Medicine	Polymyositis and dermatomyositis	MCQs, OSPE & OSVE	LGIS
MS2-Rh-009	Define Sjögren's syndrome and differentiate between primary and secondary forms. Describe the pathophysiology involving lymphocytic infiltration of exocrine glands. Recognize typical clinical features including xerostomia, keratoconjunctivitis sicca, and systemic manifestations. Discuss relevant diagnostic investigations (Schirmer's test, salivary gland biopsy, autoantibodies). Outline management strategies including symptomatic relief and immunosuppression when indicated.		Sjögren's syndrome		

ORTHOPEDICS & TRAUMA

CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 14+12			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
MS2-Orth-001	Explain the classification of fractures using the AO system. Describe principles of fracture healing. Differentiate between complete and incomplete fractures.	Orthopedics	Fracture Classification and Healing	MCQs, OSPE & OSVE	LGIS
MS2-Orth-002	Discuss pediatric fractures and their management. Explain Salter-Harris classification for growth plate		Pediatric Fractures		

	injuries.				
MS2-Orth-003	Define osteoporotic fractures and their clinical features. Identify common sites of osteoporotic fractures. Discuss risk factors for osteoporosis.		Osteoporotic Fractures		
MS2-Orth-004	Define pathological fractures and differentiate from traumatic fractures. Identify causes of pathological fractures. Describe diagnostic approaches for pathological fractures. Explain management options for pathological fractures.		Pathological Fractures		
MS2-Orth-005	Classify sports injuries and their management. Describe common sports injuries in upper and lower limbs. Discuss pathophysiology of muscle strains and ligament sprains. Explain biomechanics of gait and malalignment injuries. Outline injury prevention strategies in sports. Analyze rehabilitation processes for sports injuries. Discuss use of assistive devices in rehabilitation. Explain psychological impact of sports injuries. Describe nutritional roles in recovery from sports injuries. Outline surgical intervention in severe sports injuries.	Orthopedics	Sports Injuries	MCQs, OSPE & OSVE	LGIS
MS2-Orth-006	Define achondroplasia as the most common skeletal dysplasia and describe its effect on bone growth. Identify the characteristic skeletal features. Identify musculoskeletal complications due to achondroplasia.		Achondroplasia		

	Interpret characteristic radiographic findings relevant to diagnosis and follow-up. Outline management principles. Discuss the role of surgical and non-surgical interventions in improving function and quality of life.				
MS2-Orth-007	Define scoliosis and its types. Identify clinical features and screening methods for scoliosis. Discuss treatment options for scoliosis. Describe multidisciplinary approach in managing scoliosis		Scoliosis		
MS2-Orth-008	Define osteogenesis imperfecta and describe its genetic basis and abnormal collagen formation. Identify the key skeletal manifestations. Identify associated musculoskeletal complication. Interpret characteristic radiological features of OI used for diagnosis and monitoring. Discuss the principles of management.		Osteogenesis Imperfecta		
MS2-Orth-009	Define Marfan syndrome and describe its genetic basis. Identify the characteristic skeletal features. Identify orthopedic complications. Interpret relevant clinical and radiological findings used in diagnosing skeletal involvement. Outline principles of management.		Marfan syndrome		
MS2-Orth-010	Define septic arthritis and identify its etiological agent. Explain the pathogenesis of joint infection and		Septic Arthritis		
		Orthopedics		MCQs, OSPE & OSVE	LGIS

	subsequent cartilage destruction. Identify the clinical features of acute septic arthritis in children and adults. Identify key diagnostic investigations. Outline the management plan. Discuss its potential complications.				
MS2-Orth-011	Define clubfoot and describe its anatomical deformities. Explain the embryological and etiological basis of clubfoot. Describe the clinical presentation and methods of clinical assessment. Outline the principles of management with emphasis on non-surgical correction. Describe indications for surgical intervention and explain operative correction. Discuss prognosis and importance of early detection and compliance with treatment	Orthopedics	Clubfoot (Congenital Talipes Equinovarus – CTEV)	MCQs, OSPE & OSVE	LGIS.
MS2-Orth-012	Differentiate acute, subacute, and chronic forms of osteomyelitis. Identify its risk factors and describe its pathophysiology. Describe radiological features of osteomyelitis. Identify typical clinical features of osteomyelitis. Outline management strategies and discuss complications.		Osteomyelitis		
MS2-Orth-013	Define severe trauma and recognize its impact on morbidity and mortality. Describe the concept of the “golden hour” and its relevance in trauma care. Apply the principles of primary survey (ABCDE) for rapid assessment and stabilization.		Early Assessment and Management of Severe Trauma		

	Identify immediate life-threatening conditions requiring urgent intervention. Outline the steps of secondary survey for detailed evaluation after initial stabilization. Discuss the role of resuscitation, monitoring, and adjunct investigations in trauma management. List the indications for urgent surgical referral and definitive management.				
MS2-Orth-014	Define traumatic brain injury and classify it by severity and type. Describe the pathophysiology of primary and secondary brain injury. Identify the clinical features of TBI, including altered consciousness, focal neurological deficits, and signs of raised intracranial pressure. Apply the principles of initial assessment using ATLS framework with emphasis on Glasgow Coma Scale. Identify red flag signs that indicate urgent neurosurgical referral. Discuss the role of imaging in diagnosis and follow-up. Outline plan for acute management and identify potential complications.	Orthopedics	Traumatic Brain Injury	MCQs, OSPE & OSVE	LGIS
MS2-Orth-015	Classify spinal and cervical spine trauma injuries by mechanism and level. Describe the pathophysiology of spinal cord injury, including primary and secondary injury processes. Identify the clinical features of cervical and thoracolumbar spine trauma.		Neck and spine trauma		

	Apply the principles of initial assessment and stabilization. Identify key radiological investigations for diagnosis and assessment of stability. Plan initial management and enumerate complications of spine trauma. Identify indications for surgical versus conservative management of spinal injuries.				
MS2-Orth-016	Classify common facial fractures. Describe key clinical features and complications, including airway compromise. Explain initial assessment and stabilization in facial injuries. Identify appropriate diagnostic investigations, especially imaging. Outline plan for definitive management and multidisciplinary care.	Orthopedics	Maxillofacial trauma	MCQs, OSPE & OSVE	LGIS
MS2-Orth-017	Define thoracic trauma and classify it into blunt and penetrating types. Describe life-threatening chest injuries including tension pneumothorax, massive hemothorax, flail chest, cardiac tamponade. Apply the principles of initial assessment and stabilization using the ATLS approach. Identify key diagnostic tools for evaluation. Outline principles of acute management		Thoracic trauma		
MS2-Orth-018	Classify abdominal trauma based on mechanism and organ involvement. Identify the clinical presentation and red flag signs indicating severe intra-abdominal injury.		Abdominal trauma		

	Discuss the role of bedside and imaging investigations in diagnosis. Outline the early surgical and supportive management plan to prevent morbidity and mortality.	Orthopedics		MCQs, OSPE & OSVE	LGIS
MS2-Orth-019	Describe the common types and mechanisms of extremity trauma. Identify life- and limb-threatening conditions. Apply principles of initial assessment and stabilization. Outline indications for urgent referral to orthopedic/trauma specialists. Educate patients and attendants regarding basic care, need for follow-up, and complications.		Extremity trauma		

PATHOLOGY, PHARMACOLOGY, COMMUNITY MEDICINE					
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 02+04+02			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
MS2-Pa-001	Describe the morphological features of acute and chronic osteomyelitis. Discuss the etiology, pathophysiology, morphology, clinical manifestations and diagnostic criteria of Rheumatoid Arthritis (RA) Discuss the etiology, pathophysiology, morphology, clinical manifestations and diagnostic criteria of Osteoarthritis (OA) Discuss the etiology, pathophysiology, morphology, clinical manifestations and diagnostic criteria of Crystal Arthritis (Gout/Pseudogout).	Pathology	MSK Diseases & Tumors	MCQs, OSPE & OSVE	LGIS

	Describe the pathophysiology and morphology of Paget disease Classify bone, cartilaginous and soft tumors. Discuss the etiology, pathophysiology, morphology, clinical manifestations and radiological findings of bone, cartilaginous and soft tumors.				
MS2-Ph-001	Classify the drugs used in acute and chronic gout. Describe key pharmacokinetic parameters of commonly used anti-gout drugs. Explain the mechanism of action, clinical uses, and important adverse effects of NSAIDs, colchicine, corticosteroids, xanthine oxidase inhibitors, uricosurics, and uricase in the management of acute and chronic gout. Recognize major toxicities and contraindications of anti-gout drugs	Pharmacology	Anti-gout drugs	MCQs, OSPE & OSVE	LGIS
MS2-Ph-002	Classify the drugs used in RA (NSAIDs, corticosteroids, DMARDs, biologics, targeted therapies, opioids) Describe key pharmacokinetic aspects of major drug groups. Explain the mechanism of action of NSAIDs, corticosteroids, conventional DMARDs, biologics, and JAK inhibitors in context of Rheumatoid arthritis. Discuss the clinical role of major drug categories in the management of rheumatoid arthritis and other rheumatologic disorders. Identify important adverse effects, major toxicities,	Pharmacology	Drugs for Rheumatoid arthritis		

	precautions, and contraindications of RA drugs			MCQs, OSPE & OSVE	LGIS
MS2-CM-001	Define ergonomics and explain its relevance in the school environment. Identify common ergonomic risk factors in schools. Recognize health problems associated with poor school ergonomics. Explain methods to assess ergonomic hazards in the school setting. Propose preventive strategies and ergonomic interventions.	Community Medicine	School Ergonomics and Student Health		



PRACTICALS					
PATHOLOGY, PHARMACOLOGY AND RADIOLOGY					
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 09			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
MS2-Pa-002	Interpret various investigations related to joint diseases including: i. Complete Blood Count (CBC) ii. Erythrocyte Sedimentation rate (ESR) iii. C-reactive protein (CRP) iv. Creatine Kinase (CK) v. Rheumatoid factor (RF) vi. Antinuclear antibody (ANA) vii. Anti-Neutrophil Cytoplasmic Antibodies (ANCA) viii. Serum uric acid level	Pathology	Test Interpretation	OSPE	Practical
	Identify morphological features of Osteomyelitis (Pictorial/slide).				
	Identify morphological features of Osteogenic sarcoma (Pictorial/slide). Identify morphological features of lipoma and hemangioma.				
	Interpret related cultures for diagnosis for infections				
MS2-Ra-001	Interpret imaging tests to evaluate various musculoskeletal disorders including: i. X-rays ii. Computed tomography (CT) Scans iii. Ultrasound Scans iv. Bone Scans	Radiology	Test Interpretation		
MS2-Ph-003	Analyze and interpret different drugs (Neuromuscular blockers) on animals through online videos / simulations / graphs / practical performance. Analyze and interpret different concentrations of	Pharmacology	MSK & locomotion		

	drugs (atracurium or skeletal muscle relaxant) on Frog's rectus muscle through online videos / simulations / graphs / practical performance. Prescription writing for the following clinical conditions: Rheumatoid Arthritis, Gout (acute and chronic), Osteoarthritis				
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Total Weeks	Total Hours
02	00

MODULE-19
**Forensic Medicine
& Toxicology-II**

MODULE RATIONALE

This module trains the 3rd year MBBS student to handle social issues like violence, and sexual exploitation, they can identify injuries and give an inference on their cause. It equips them with skills to provide accurate medical evaluation and contribute to justice.

MODULE OUTCOMES

- Explain the biomechanics of wound production (PLO-1, PLO-6)
- Determine the manner of injury (PLO-1, PLO-6)
- Describe the pathophysiology of injuries and their effects on the body (PLO-1, PLO-2, PLO-6)
- Define and explain puberty, impotence in males, frigidity in females, sterility, and their medico-legal importance (PLO-3, PLO-6, PLO-7)
- Reproduce different sections of law relevant to sexual offenses (PLO-3, PLO-6)

SUBJECTS INTEGRATED IN THE MODULE

1. Pathology
2. Surgery
3. Gynae / Obs.

IMPLEMENTATION TORs

The time calculation for completion of modules and blocks is based on 35 hours per week. Total hours of teaching, learning and formative/summative internal assessment to be completed in a year are 1200.

The hours mentioned within each module are the mandatory minimum required. The rest of the hours are left to the discretion of the institution that can be used in teaching, learning and assessment as per decision of the institutional academic council.

The content and the intended learning outcomes written are mandatory, to be taught, at the level required, as the end year assessment will be based on these.

However, the level of cognition can be kept at a higher level by the institution.

The Table of Specifications provided will be used for the three papers of the first professional examination. The same table of specifications should be used for the respective three block exams for internal assessment

Syllabus



Theory

THEORY (FORENSIC MEDICINE)					
TRAUMATOLOGY					
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 03+12+05			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
For2-Tr-001	Define injury, wound and hurt. Classify injuries on the basis of causative weapons. Classify injuries as per Qisas and Diyyat Act.	Forensic Medicine	Injury	MCQs, OSPE & OSVE	LGIS
For2-Tr-002	Explain mechanism of wound production with reference to subject, object and contact.		Wound production		
For2-Tr-003	Define and classify abrasions. Describe mechanism of production of abrasions. Differentiate between different types of abrasions. Explain medicolegal importance of abrasions.		Abrasion		
For2-Tr-004	Define and classify bruises. Explain pathophysiology of color changes in the bruise. Assess the age of wound from color changes of wound. Distinguish between bruise, artificial bruise and hypostasis. Explain medico legal importance of bruises.		Bruise		
For2-Tr-005	Define and classify lacerated wound. Differentiate between a lacerated wound and incised wound on gross examination. Explain its medico legal importance.		Laceration		
For2-Tr-006	Describe different types of fractures of bones. Interpret the age of fractures from radiological findings. Illustrate stages of healing of fractures of bones. Interpret and document the nature of the fracture in the		Fractures		

	injury certificate as per Qisas and Diyat act. Explain medico-legal importance of fracture of bone/tooth.				
For2-Tr-007	Differentiate between ligature marks due to hanging and strangulation. Describe nonspecific and specific autopsy findings of hanging. Explain the process to remove and preserve the ligature material used.		Strangulation / Hanging		
For2-Tr-008	Define throttling. Identify external and internal autopsy findings of death due to throttling. Determine the position of assailant and victim from external marks on neck.	Forensic Medicine	Throttling	MCQs, OSPE & OSVE	LGIS
For2-Tr-009	Define smothering, gagging, choking, and traumatic asphyxia. Explain the mechanisms and sequence of events leading to death due to asphyxia. Enumerate common causes and situations where asphyxia occur. Identify characteristic external findings and typical internal autopsy findings. Differentiate between smothering, gagging, choking, and other forms of mechanical asphyxia based on postmortem findings.		Asphyxia		
SPECIAL TRAUMATOLOGY					
For2-Tr-010	Describe the pathophysiology of injuries. Explain effects of injuries on the body.	Forensic Medicine	Pathophysiology of injuries	MCQs, OSPE & OSVE	LGIS
For2-Tr-011	Describe methods to determine age of wound.		Timing of injury / ante mortem, post		

	Describe different methods of determination of ante mortem/ post mortem nature (vital reaction) of a wound	Forensic Medicine	mortem nature of wound	MCQs, OSPE & OSVE	LGIS
For2-Tr-012	Link sequelae of trauma to its original cause and search for the relationship of sequelae to pre-existing disease.		Ewing's postulates		
For2-Tr-013	Explain battered baby or Caffey syndrome from a medicolegal point of view. Diagnose a case of a battered baby on the basis of different injuries sustained.		Battered baby syndrome		
For2-Tr-014	Define torture. Explain reasons, types and complications of torture. Describe medicolegal aspects of torture.		Torture		
For2-Tr-015	Examine and prepare medico-legal report of an injured person with different etiologies in a simulated/supervised environment.		Medicolegal Certification of injury		
For2-Tr-016	Define fire arms and ballistics. Classify fire arm. Explain different parts of fire arm weapons. Describe ammunition used in firearms. Explain chain of events of firing.		internal ballistics		
For2-Tr-017	Explain the factors affecting the trajectory of bullet after its exit from the muzzle end.		External Ballistics		
For2-Tr-018	Interpret wound complex produced by a rifled and non-rifled weapons at different ranges. Calculate the distance of fire from the wound examination. Differentiate between entry and exit wounds of fire		Terminal Ballistics		

	arms. Explain medicolegal importance of fire arm injuries.	Forensic Medicine		MCQs, OSPE & OSVE	LGIS
For2-Tr-019	Identify gun powders and ammunition used through different methods.		Gun powders		
For2-Tr-020	Describe mechanics of blast injuries. Explain effects of blast injuries on human body. Describe medicolegal aspects of blast injuries.		Blast injuries		
For2-Tr-021	Explain mechanism of injuries to soft and bony tissues of head, neck, chest, abdomen and limbs. Describe effects of injuries to head, neck, chest, abdomen and limbs. Describe medicolegal aspects of regional injuries.		Regional Injuries		
For2-Tr-022	Classify transport accidents. Describe different factors involved in the causation of RTA. Classify and describe different patterns of injuries sustained by pedestrians and occupants of the vehicles. Explain medicolegal significance and prevention of RTA.		Transportation Injuries		
For2-Tr-023	Define thermal injuries. Classify thermal injuries- flame burns and scalds. Describe degree of burns according to different classifications. Calculate percentage of burnt surface area and their effects on the body. Describe management of the burnt patient clinically. Appraise causes of death due to burn. Determine age of burn and ante-mortem/post mortem nature of burn.		Thermal Injuries / Burn		

	Describe autopsy findings and medico legal importance of burns.				
For2-Tr-024	Classify electrical injuries injuries-low voltage and high voltage. Explain factors affecting electrocution. Describe mechanism and causes of death in electrocution. Interpret different patterns of electrical injuries due to low and high voltage current and lightening. Describe autopsy findings and medico legal importance of electrocution	Forensic Medicine	Electrocution Lightening	MCQs, OSPE & OSVE	LGIS
For2-Tr-025	Explain deaths from exposure to high environmental temperature like heat stroke, heat cramps and heat exhaustion. Explain deaths from exposure to low environmental temperature like frost bite, trench foot, immersion foot. Describe their mechanism of development, autopsy findings and medicolegal importance. Interpret starvation, causes, clinical findings, autopsy findings and medicolegal importance		Hyper / Hypothermia/ Starvation		
For2-Tr-026	Describe chemical burns. Explain mechanism of development of chemical burns. Describe autopsy findings. Summarize the chemical buns as per qisas and diyat act. Describe medicolegal importance of chemical burns.		Chemical Burns		
For2-Tr-027	Define and classify drowning.	Forensic	Drowning		

	Explain mechanism of death in wet and dry drowning. Describe external and internal autopsy findings in wet and dry drowning. Interpret biochemical and diatom tests. Emphasize medicolegal importance of drowning.	Medicine		MCQs, OSPE & OSVE	LGIS
MEDICOLEGAL ASPECTS OF SEXUAL OFFENCES					
For2-Se-001	Define terms: impotency, frigidity in females, and sterility. Explain their causes. Describe their medico legal importance.	Forensic Medicine	Impotency frigidity and sterility	MCQs, OSPE & OSVE	LGIS
For2-Se-002	Explain signs of virginity and defloration. Interpret medico legal importance.		Virginity and defloration		
For2-Se-003	Describe presumptive, probable and sure signs of pregnancy in living and dead.		Pregnancy		
For2-Se-004	Explain recent and old signs of delivery in living and dead.		Delivery		
For2-Se-005	Define and classify abortions. Explain motives for criminal abortions. Reproduce different methods of inducing criminal abortion. Outline complications and causes of death due to abortion. Describe findings in living and dead after abortion. Examine the aborted material to assess the age and viability. Apply sections of Qisas and Diyat act relevant to abortion.		Abortion/Miscarriage		
For2-Se-006	Classify sexual offenses and explain their medico legal		Sexual Offences		

	importance. Describe sexual perversions and identify the traits. Explain different sections of law relevant to sexual offenses. Write a report on medico-legal examination of a victim of sexual assault. Describe the medico-legal examination in unnatural sexual offence. Outline collection, preservation and dispatch of specimens in cases of sexual assaults to chemical examiner. Interpret psycho-pathology of assailant. Interpret Psycho-pathology of victim. Plan initial management & referral of victim.	Forensic Medicine		MCQs, OSPE & OSVE	LGIS
For2-Se-007	Define infanticide. Describe status of infants-still born/dead born/live born. Describe autopsy findings to determine whether live born or not, cause of death, age of new born and others.		Infanticide		



PRACTICALS					
FORENSIC MEDICINE					
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 09+06			
		INTEGRATING DISCIPLINE	TOPIC	ASSESSMENT TOOLS	TEACHING/ LEARNING
For2-Tr-028	Identify common conventional blunt objects, sharp objects, firearms, electrical instruments and chemicals and their medico- legal aspects. (lathi, knife, axe, gandas, sickle, dagger, razor & stick, fire arms)	FORENSIC MEDICINE	Mechanical injuries	OSPE	Practical
For2-Tr-029	Differentiate between different types of abrasions.		Abrasion		
For2-Tr-030	Assess the age of a bruise on the basis of color changes. Differentiate between a bruise and post mortem staining.		Bruise		
For2-Tr-031	Differentiate between a lacerated and incised wound on naked eye examination.		Wound		
For2-Tr-032	Identify the type of fracture on X-rays. Apply different sections of Qisas and Diyat Act from examination of fractures on X-rays.		Fracture		
For2-Tr-033	Identify hurt and apply relevant section of Qisas and Diyat Act for: i. Itlaf-udw ii. Itlaf -slahiat-udw iii. Shajja iv. Jurh		Hurt / Qisas N Diyat Act		
For2-Tr-034	Examine an injured person. Issue certificate of injury in a simulated/supervised environment.		Certification of injury		

For2-Tr-035	Identify different types and parts of fire arm weapons. Identify different parts of ammunition. Determine the type of fire arm weapon from the Firearm examination of fire arm wound complex. Calculate the firing range of the weapon from appearance of wound. Identify characteristics of entry and exit fire arm wounds.		Firearm	OSPE	Practical
For2-Tr-036	Differentiate between dry burn and wet burn. Calculate burnt surface area. Determine age and nature of burn on naked eye examination.		Burn		
For2-Tr-037	Identify between entry and exit wounds of electric currents on body. Describe different pathways of electric currents through human body. Identify different patterns of electrical injuries.		Electrocuted injury		
For2-Tr-038	Identify different patterns of effects of high/low environmental temperature on the body. Identify the autopsy findings of death due to starvation.		Hypo / Hypothermia / starvation		
For2-Tr-039	Identify different patterns of chemical burns over body. Apply relevant sections of Qisas And Diyat Act		Chemical Burns		
SEXOLOGY					
For2-Se-008	Demonstrate Medico-legal examination of the alleged accused of rape and issue report. Perform collection, preservation and dispatch of specimens in cases of sexual assaults to chemical examiner.	Forensic medicine	Sexual assault	OSPE	Practical

Total Weeks	Total Hours
01	35

Time Table for Block 8



ISLAM MEDICAL COLLEGE, SIALKOT Block 8 Training Program 3rd Year MBBS



3 rd year MBBS 2024-2025									
WEEK- 01/11									
Day	8:00-8:50	8:50-9:40	9:40-10:40	10:40-12:10		12:10-1:10	1:10-1:40	1:40-2:20	2:20-3:00
Monday 23/6/2025							B R E A K		
Tuesday 24/6/2025									
Wednesday 25/6/2025									
Thursday 26/6/2025	Pathology LGIS Definition & Nomenclature of tumour Dr Faiz Ahmed Faiz	Pharmacology LGIS Introduction to anticancer drugs Prof shah murad	Clinical Ward	10:20-11:15	11:15-12:20	12:20-1:10		Medicine LGIS Basics of radiology Dr Zara	Surgery LGIS Dr Farwa Inayat
				Pharmacology DSL	Forensic Medicine Qissas and diyat act Dr alvina raja	Pathology LGIS Morphological features, Pathogenesis & lab diagnosis of staphylococci Dr Qamar Aziz			
Friday 27/6/2025	Orthopedic LGIS Introduction to orthopedics Dr Waqar	Pathology LGIS Difference between benign & malignant tumour Dr Faiz Ahmed Faiz	Clinical Ward	10:40-11:30	11:30-12:15	12:15-1:00	Friday 1:00-1:40	Medicine LGIS Malignancy Dr Zara	Expository
				Community medicine LGIS Cancer Screening Dr Arooj	Pearls RESEARCH DR SHAHNEEL	Surgery LGIS	B R E A K		

Module Lead _____ HoD Medical Education _____ HoD Students Affair _____ Principal IMC _____



ISLAM MEDICAL COLLEGE, SIALKOT Block 8 Training Program 3rd Year MBBS



3 rd year MBBS 2024-2025									
WEEK- 02/11									
Day	8:00-8:50	8:50-9:40	9:40-10:40	10:40-12:10		12:10-1:10	1:10-1:40	1:40-2:20	2:20-3:00
Monday 14/7/2025	Pearls Adapting to physicians role Dr shahnee	Biosafety Dr alvina raja	Clinical Ward	Practical Pharmacology A Pathology B Forensic Medicine C		SGD Pharmacology A Pathology B Forensic Medicine C	B R E A K	Pharmacology LGIS PK & PD of cell cycle specific anticancer drugs Dr shah murad	Pathology LGIS Epidemiology of cancer Dr faiz
Tuesday 15/7/2025	Pharmacology LGIS PK & PD of cell cycle non-specific anticancer drugs Dr. Muhammad Usman	Pathology LGIS Diff btw carcinoma and sarcoma Dr faiz	Clinical Ward	Practical Pharmacology B Pathology C Forensic Medicine A		SGD Pharmacology B Pathology C Forensic Medicine A		Forensic Medicine LGIS Mechanism of wound production Dr alvina	Medicine LGIS Hypercalcemia of malignancy Dr zara
Wednesday 16/7/2025	Forensic Medicine LGIS Lacerated incised & stab wound Dr alvina	Pathology LGIS Molecular basis of cancer I Dr faiz	Clinical Ward	Practical Pharmacology C Pathology A Forensic Medicine B		SGD Pharmacology C Pathology A Forensic Medicine B		Pharmacology LGIS Role of Glucocorticoids in cancer therapy Dr. Muhammad Usman	Pathology LGIS Staphylococci ii Dr qamar
Thursday 17/7/2025	Pathology LGIS Molecular basis of cancer II Dr faiz	Pharmacology LGIS PK & PD of β -lactam antibiotics Dr shah murad	Clinical Ward	10:40-12:20 DSL Pharmacology (Formative Assessment)		12:20-1:10 Pathology LGIS Strptococci I Dr qamar		Medicine LGIS Pulmonary embolism Dr zara	Surgery LGIS Principal of imaging Dr farwa mudassir
Friday 18/7/2025	Community Medicine LGIS Major risk factors for cancer. Preventive and control measures Dr Arooj	Pathology LGIS Strptococci ii Dr qamar	Clinical Ward	10:40-11:30 Orthopedic LGIS Fracture classification and healing DR Waqar	11:30-12:15 Pearls Dr shehneel	12:15-1:00 Surgery LGIS Principal of minimal access surgery Dr farwa mudassir	Friday 1:00-1:40	Medicine LGIS + Paraneoplastic syndrome Dr Zara	Expository

Module Lead _____ HoD Medical Education _____ HoD Students Affair _____ Principal IMC _____



ISLAM MEDICAL COLLEGE, SIALKOT
Block 8 Training Program
3rd Year MBBS



3 rd year MBBS 2024-2025								
WEEK- 02/11								
Day	8:00-8:50	8:50-9:40	9:40-10:40	10:40-12:10	12:10-1:10	1:10-1:40	1:40-2:20	2:20-3:00
Monday 21/7/2025	Weekly Assessment -1	Biosafety Dr alvina	Clinical Ward	Practical Pharmacology A Pathology B Forensic Medicine C	SGD Pharmacology A Pathology B Forensic Medicine C	B R E A K	Pharmacology LGIS PK & PD of B-lactam Dr shah murad	Pathology LGIS Cell cycle dysregulation, apoptosis, ev asion Dr faiz
Tuesday 22/7/2025	Pharmacology PK & PD of B-lactam antibiotics Dr shah murad	Pathology LGIS Angiogenesis in tumor progression & metastasis Dr faiz	Clinical Ward	Practical Pharmacology B Pathology C Forensic Medicine A	SGD Pharmacology B Pathology C Forensic Medicine A		Forensic Medicine LGIS Stab wound pathophysiology Dr alvina	Medicine LGIS Dr zara
Wednesday 23/7/2025	Forensic Medicine LGIS Timing of injury & antemortum Dr alvina	Pathology LGIS Clostridium & bacillus Dr qamar	Clinical Ward	Practical Pharmacology C Pathology A Forensic Medicine B	SGD Pharmacology C Pathology A Forensic Medicine B		Pharmacology LGIS PK & PD of Vancomycin, Teicoplanin, Telavancin, Delbavancin, Oritavancin Dr. Usman	Pathology LGIS Wucherera, medinensis, loa loa Dr Rana M Asad
Thursday 24/7/2025	Pathology LGIS Listeria & gardenella Dr qamar	Pharmacology LGIS PK & PD of carbapenems & monobactams Dr Usman	Clinical Ward	10:40-12:20 DSL Pharmacology (Formative Assessment)	12:20-1:10 Pathology LGIS t.saginata & solium Dr Rana M Asad		Medicine LGIS Dr zara	Surgery LGIS Principal of oncology Dr farwa mudassir
Friday 25/7/2025	Community Medicine LGIS Dr Arooj	Pathology LGIS N goneerhea & meningitis Dr qamar	Clinical Ward	10:40-11:30 Orthopedic LGIS Pediatric fractures DR Waqar	11:30-12:15 Pearls Dr shehneel	12:15-1:00 Surgery LGIS Surgical audits & ethics Dr farwa mudassir	Medicine LGIS Dr Zara	Expository

Module Lead _____ HoD Medical Education _____ HoD Students Affair _____ Principal IMC _____



ISLAM MEDICAL COLLEGE, SIALKOT
Block 8 Training Program
3rd Year MBBS



3 rd year MBBS 2024-2025								
WEEK- 04/11								
Day	8:00-8:50	8:50-9:40	9:40-10:40	10:40-12:10	12:10-1:10	1:10-1:40	1:40-2:20	2:20-3:00
Monday 28/7/2025	Pharmacology LGIS PK & PD of membrane active antibiotics Dr M. Usman	Pathology LGIS h. nana Dr Rana M Asad	Clinical Ward	Practical Pharmacology A Pathology B Forensic Medicine C	SGD Pharmacology A Pathology B Forensic Medicine C	B R E A K	Weekly Assessment -2	
Tuesday 29/7/2025	Pharmacology PK & PD of Tetracyclines+ milk alkali syndrome Dr shah murad	Pathology LGIS Invasion & metastasis Dr faiz	Clinical Ward	Practical Pharmacology B Pathology C Forensic Medicine A	SGD Pharmacology B Pathology C Forensic Medicine A		Forensic Medicine LGIS Firearm injury Dr alvina-	Medicine LGIS Dr zara
Wednesday 30/7/2025	Forensic Medicine LGIS Infanticide Dr gul maria	Pathology LGIS corynebacterium Dr Qamar	Clinical Ward	Practical Pharmacology C Pathology A Forensic Medicine B	SGD Pharmacology C Pathology A Forensic Medicine B		Pharmacology LGIS Features of Glycylcyline(board- spectrum Tetracyclines) Dr. Shah Murad	Pathology LGIS Echinococcus granulosus Dr Rana M Asad
Thursday 31/7/2025	Pathology LGIS Lymphoreticular neoplasm Dr faiz	Pharmacology LGIS PK & PD of Macrolides Dr Azan	Clinical Ward	10:40-11:30 DSL Pharmacology (Formative Assessment)	11:30-12:20 Paeds LGIS Neonatal meningitis Dr Fatima		Medicine LGIS Dr zara	Surgery LGIS
Friday 01/8/2025	Community Medicine LGIS Dr Arooj	Pathology LGIS salmonella Dr qamar	Clinical Ward	10:40-11:30 Orthopedic LGIS DR Waqar	11:30-12:15 Pearls Integrated with community medicine Dr arooj	12:15-1:00 Surgery LGIS	Medicine LGIS Dr Zara	Biosafety

Module Lead _____ HoD Medical Education _____ HoD Students Affair _____ Principal IMC _____



ISLAM MEDICAL COLLEGE, SIALKOT
Block 8 Training Program
3rd Year MBBS



3 rd year MBBS 2024-2025									
WEEK- 05/11									
Day	8:00-8:50	8:50-9:40	9:40-10:40	10:40-12:10		12:10-1:10	1:10-1:40	1:40-2:20	2:20-3:00
Monday 04/8/2025	Pathology LGIS Grading & staging of tumor Dr faiz	Pharmacology LGIS PK & PD of clindamycin Dr shah murad	Clinical Ward	Practical Pharmacology A Pathology B Forensic Medicine C		SGD Pharmacology A Pathology B Forensic Medicine C	B R E A K	Weekly Assessment -2	
Tuesday 05/8/2025	Pharmacology PK & PD of chloramphenicol Dr shah murad	Pathology LGIS Giardia & entameoba Dr Rana M Asad	Clinical Ward	Practical Pharmacology B Pathology C Forensic Medicine A		SGD Pharmacology B Pathology C Forensic Medicine A		Forensic Medicine LGIS Infanticide 2 Dr gul maria	Medicine LGIS Dr zara
Wednesday 06/8/2025	Forensic Medicine LGIS Firearm injury 2 Dr alvina	Pathology LGIS Proteus,pseudo,vibr io,shigella Dr Qamar	Clinical Ward	Practical Pharmacology C Pathology A Forensic Medicine B		SGD Pharmacology C Pathology A Forensic Medicine B		Pharmacology LGIS PK & PD of aminoglycosides Dr. M usman	Pathology LGIS Plasmodium,leishmania,cr yosporosoma Dr Rana M Asad
Thursday 07/8/2025	Pathology LGIS Lab diagnosis of tumor Dr faiz	Pharmacology LGIS PK & PD of streptogramins Dr. M usman	Clinical Ward	10:40-11:30 DSL Pharmacology (Formative Assessment)	11:30-12:20 Paeds LGIS Childhood RTI & diarrhea Dr Fatima	12:20-1:10 Pathology LGIS Actinomyces,h.pyl ori,c.jejuni dr qamar		Medicine LGIS Dr zara	Surgery LGIS
Friday 08/8/2025	Community Medicine LGIS Dr Arooj	Pathology LGIS Mycobacteria, spirochetes Dr qamar	Clinical Ward	10:40-11:30 Orthopedic LGIS DR Waqar	11:30-12:15 Pearls integrated with BS Dr rubab	12:15-1:00 Surgery LGIS		Medicine LGIS Dr zara	Biosafety
Friday 1:00-1:40									

Module Lead

HoD Medical Education

HoD Students Affairs

Principal IMC



ISLAM MEDICAL COLLEGE, SIALKOT
Block 8 Training Program
3rd Year MBBS

3rd year MBBS 2024-2025



3 rd year MBBS 2024-2025									
WEEK- 06/11									
Day	8:00-8:50	8:50-9:40	9:40-10:40	10:40-12:10		12:10-1:10	1:10-1:40 B R E A K Friday 1:00-1:40	1:40-2:20	2:20-3:00
Monday 18/8/2025	Pathology Lab Diagnosis of Tumor Dr faiz	Pharmacology Drug Treatment of TB 1 Dr Musman	Clinical Ward	Practical Pharmacology A Pathology B Forensic Medicine C		SGD Pharmacology A Pathology B Forensic Medicine C		DSL forensic	Gynaecology LGIS Dr soha
Tuesday 19/8/2025	Pharmacology Drug Treatment of TB 2 Dr. M Usman	Pathology Histoplasma Copsulatum Dr Rana M Asad	Clinical Ward	Practical Pharmacology B Pathology C Forensic Medicine A		SGD Pharmacology B Pathology C Forensic Medicine A		Forensic Medicine Regional Injuries 2 Dr Alvina	Medicine LGIS Dr Momin
Wednesday 20/8/2025	Forensic Medicine RTA 1 Dr Alvina	Pathology DNA Non-Enveloped Viruses Dr Qamar	Clinical Ward	Practical Pharmacology C Pathology A Forensic Medicine B		SGD Pharmacology C Pathology A Forensic Medicine B		Pharmacology Drug Treatment of Leprosy Dr. M usman	Pathology Coccidioides, Blastomyces Dr Rana M Asad
Thursday 21/8/2025	Pathology DNA enveloped Viruses Dr Qamar	Pharmacology Anti-Protozoal Drugs, Malaria, Amoebiasis, Giardiasis Prof. Shah murad	Clinical Ward	10:40-11:30	11:30-12:20	12:20-1:10		Medicine LGIS Dr Momin	Surgery LGIS
				DSL Pharmacology (Formative Assessment)	DSL Pharmacology (Formative Assessment)	Pathology Bacteria Causing Food poisoning and diarrhea Dr Rana M Asad			
Friday 22/8/2025	Community Medicine LGIS Dr Arooj	Pathology RNA non-enveloped Viruses Dr qamar	Clinical Ward	10:40-11:30 Orthopedic LGIS DR Waqar	11:30-12:15 Perls integrated with Community Medicine Dr Arooj	12:15-1:00 Surgery LGIS	Medicine LGIS Dr Momin	Biosafety	

Module Lead

HoD Medical Education

HoD Students Affairs

Principal IMC

ISLAM MEDICAL COLLEGE, SIALKOT
Block 8 Training Program
3rd Year MBBS

3rd year MBBS 2024-2025

WEEK- 10								
Day	8:00-8:50	8:50-9:40	9:40-10:40	10:40-12:10		12:10-1:10	1:10-1:40	1:40-2:20
Monday 22/9/2025	Pharmacology PK & PD of NSAIDs Dr. Azan	Pathology LGIS Bone tumours Dr. faiz	Clinical Ward	Practical Pharmacology A Pathology B Forensic Medicine C		SGD Pharmacology A Pathology B Forensic Medicine C	B R E A K	Assessment 7
Tuesday 23/9/2025	Pharmacology PK & PD of DMARDs Dr. Azan	Forensic Medicine LGIS Abortion Dr Gul Maria	Clinical Ward	Practical Pharmacology B Pathology C Forensic Medicine A		SGD Pharmacology B Pathology C Forensic Medicine A		Pathology LGIS Malassaize, spoorthi Dr Kana M Asad
Wednesday 24/9/2025	Forensic Medicine Drowning Dr Gul Maria	Pathology LGIS Bone tumours II Dr. faiz	Clinical Ward	Practical Pharmacology C Pathology A Forensic Medicine B		SGD Pharmacology C Pathology A Forensic Medicine B		Pathology LGIS RNA Viruses Dr Qamar
Thursday 25/9/2025	Pathology LGIS RNA Viruses Ili Dr Qamar	Pharmacology LGIS PK & PD of Opioids used in pain Dr. Shah Murad	Clinical Ward	10:40-11:30 DSL Pharmacology (Formative Assessment)	11:30-12:20 DSL Pharmacology (Formative Assessment)	12:20-1:10 Pharmacology LGIS	Friday 1:00-1:40	Expository
Friday 26/9/2025	Community Medicine LGIS Dr Arooj	Pathology	Clinical Ward	10:40-11:30 Orthopedic LGIS DR Waqar	11:30-12:15 PERLS integrated with Community Medicine Dr Arooj	12:15-1:00 Surgery LGIS		Biosafety
								Medicine LGIS Dr Momin

Block Lead _____ HoD Medical Education _____ Students Affair _____ Principal IMC _____

ASSESSMENT TOOLS

Students will be assessed by the following methods:

1. **Weekly Assessments**

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

2. **Assignments/CBLs:**

Assignments/CBLs will be given monthly.

3. **End of Module Exam:**

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

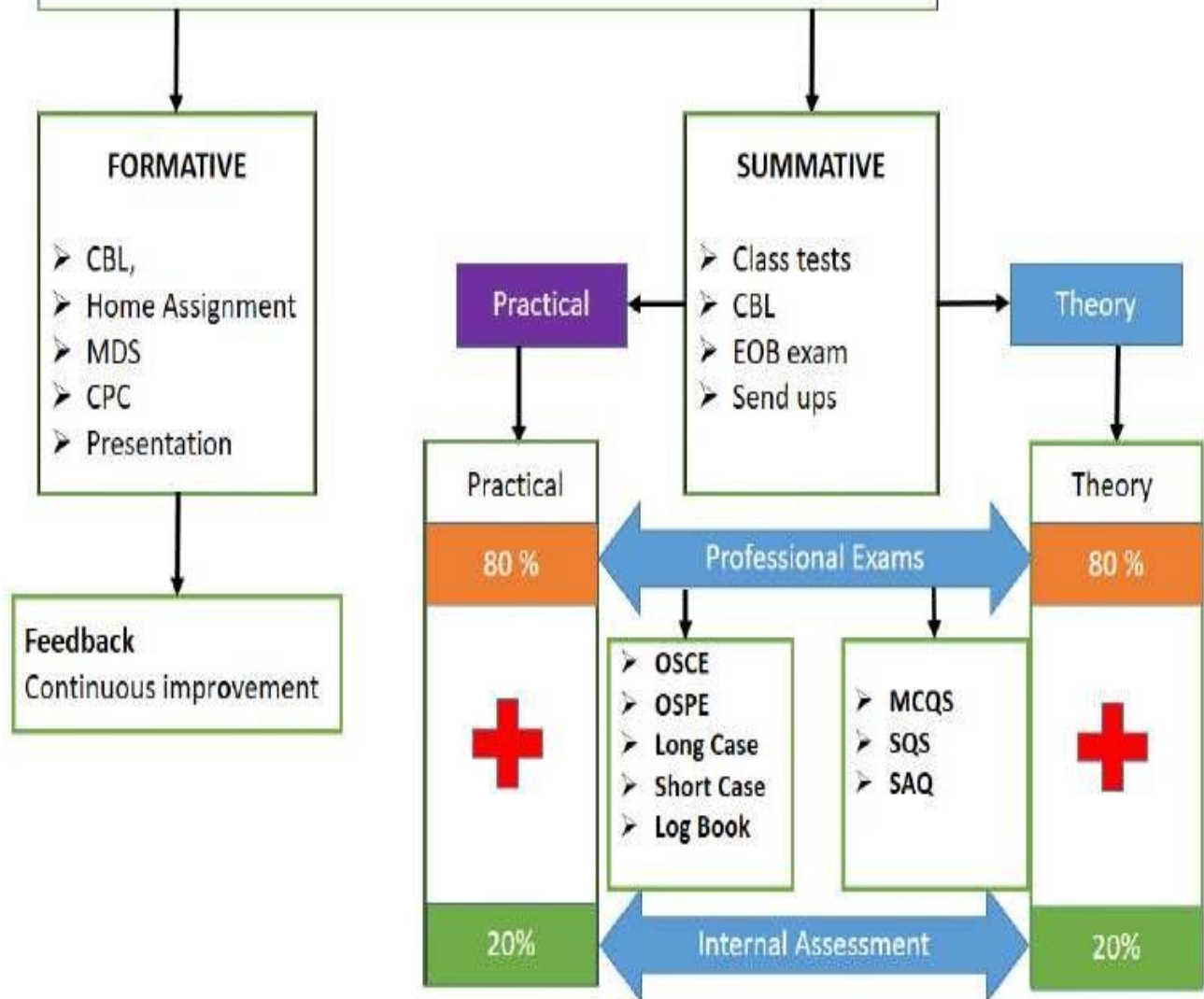
4. **Block Exam:**

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

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

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

Assessment





MBBS 3rd Professional

Block-8

Subject	Written Exam		Oral/Practical/Clinical Exam			
	MCQ (1 mark)	Marks	OSPE /OSCE (8 marks each observed)	OSCE (10 marks each observed)	OSVE (14 marks each observed)	Marks
Pharmacology	22	22	03	-	01	38
Pathology	55	55	04	-	02	60
Community Medicine	04	04	-	-	-	-
Surgery	20	20	01	-	-	08
Medicine	20	20	01	-	-	08
Forensic	15	15	01	-	-	08
Behavioral	02	02	-	-	-	-
Patient Safety	02	02	-	-	-	-
CFRC	-	-	01	-	-	08
PERLs + Expository	-	-	-	01	-	10
Total	140	140	11 stations x 08 = 88	01 stations x 10 = 10	03 stations x 14=42	140

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

- Vinay 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 Mitchell, Vinay Kumar, Abul K. Abbas and Nelson Fausto Robbins and Cotran, Pocket Companion to Pathologic basis of diseases, Saunders 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.

- 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. De Maio
- Knight B. Simpson's Forensic Medicine.
- Knight and Pekka. Principles of Forensic Medicine

Forensic Pathology

- Forensic pathology 2nd edition by V.J. De Maio 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 pediatrics medicine

Islamiyat

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

Block-8 Coordinators

PHARMACOLOGY

Dr. Azan Hassan (Block Lead)

Assistant Professor Pharmacology Office: AP Office Pharmacology, Academic block2, First Floor Office Hours: Monday to Friday from 0800 Hours till 1500Hours

PATHALOGY

Dr. Rana Muhammad Asad

Senior Lecturer Pathology Office: Pathology, Academic block2, Ground Floor Office Hours: Monday to Friday from 0800 Hours till 1500Hours

FORENSIC MEDICINE

Prof. Alvina Raja

HOD & Professor of Forensic Medicine Office: Forensic Medicine Department Academic block 1, First Floor Office Hours: Monday to Friday from 0800Hours till 1500Hours

ANATOMY

Prof. Noreen Waseem

Professor of Anatomy Office: Anatomy Department Academic block 1, First Floor Office Hours: Monday to Friday from 0800Hours till 1500Hours

PHYSIOLOGY

Dr. Maimoona Shafiq

HOD/Professor of Physiology Office: HOD Office Physiology, Academic block 1, Ground Floor Office Hours: Monday to Friday from 0800 Hours till 1500Hours

BIOCHEMISTRY

Dr. Muhammad Usman Karim

Demonstrator Biochemistry Office: Biochemistry Department Academic block 1, First Floor Office Hours: Monday to Friday from 0800 Hours till 1500Hours

COMMUNITY MEDICINE

Dr. Arooj Lecturer Community Medicine Office: Community Medicine, Academic block1, First Floor Office Hours: Monday to Friday from 0800 Hours till 1500 Hours

BEHAVIOUR SCIENCES Dr. Rubab Waseem

Senior Lecturer Behavioral Sciences Office Hours: Monday to Friday from 0800 Hours till 1500Hours

CFRC

Dr. Mobeen

Office: Department of Medicine,

Office Hours: Monday to Friday from 0800 Hours till 1500Hours

PERLs

Dr. Shahneel

Lecturer Medical Education

Office: Department of Medical Education,

Office Hours: Monday to Friday from 0800 Hours till 1500Hours

MEDICINE..... Dr. Momin/Dr. Zara

SUGERY.....Dr. Shafaq

GYNAECOLOGY..... Dr. Anoos Butt

PAEDIATRICS.....Dr. Ghanwa

IMPORTANT NOTE

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

VOLUME:03

C-FRC

**CLINICAL-FOUNDATION
ROTATION CLERKSHIPS**



Clerkships

Rotation

Foundation

Clinical Skills -FRC



**Modular Integrated
Curriculum 2K23**



YEAR-03



GUIDELINES FOR DEVELOPING CFRC 3rd YEAR

University of Health Sciences has designed a very detailed and comprehensive CFRC- Logbook document which provides a proper guideline for all the institutions to design and implement the logbooks for Clinical rotations as these log books will be assessed in Annual Examination. For reference “Modular Integrated Curriculum 2K23 Final Version, Volume: 1 & Volume: 2” at UHS official website: Downloads/Syllabus MBBS /BDS (<https://www.uhs.edu.pk/Downloadslink.php>).

C-FRC IMPLEMENTATION

C-FRC is a spiral which ensures the psychomotor skill development. The framework provides as a basis for skill development relevant to different study modules and ward rotations. All the psychomotor and affective skill development has also been mentioned in the module’s sections of the Curriculum 2K23 version 3.0.

Considering the institutional diversity in terms of the student strength, resources and clinical rotation schedules, the C-FRC module and logbook can be adopted and implemented by every affiliated institution with an adaptive approach.

The logbook of C-FRC has been categorized in sections to establish relevance with the modules as well as the ward rotations independent of the module. This division can provide diverse learning opportunities for the students.

Comprehensiveness of training based on the provided framework will be enhanced by the respective institutional learning opportunities, ward rotation plans, tangible resources, timetables, skill labs, manikins, laboratory setups and virtual learning platforms.

The spiral of the C-FRC has the core concept that the student’s skill acquisition should be aligned for better outcomes as they proceed to the clerkship year. The utilization of the allotted hours by PMDC and UHS should be utilized in an effective manner, maximizing the utility of the available resources. It is suggested that the Academic Council along with the Department of Medical Education should discuss and document the following:

Institutional ‘Clinics rotation plan’.

Community rotations schedule

Family Medicine rotations

EOR-assessment (‘end-of-rotation assessment’) framework with block wise vs batch wise details.

EOR-assessment methodologies (as mentioned in the following section) to be adopted.

Planner for timely internal assessment submission

Based on the decisions made by the college academic council, the Departments of Medical Institution can develop their own respective rotation plans keeping in view the sections and coding. The Principal/DMEs will ensure the following principles while developing the rotational plans:

Third year students will have laboratory, community and clinical rotations to maximize all the learning content mentioned in the main Curriculum 2K23 version 3.0 as well as the C-FRC logbook.

At least one third of the logbook entries must be completed for each block to secure marks in the internal assessment.

DMEs will manage, monitor and document clinical assessments conducted as EOR-assessment (‘end-of-rotation assessment’).

The EOR-assessments can comprise of at least two of the following workplace-based methods.

- o OSCE
- o Case-based discussion
- o Clinical Viva
- o Clinical encounter cards

The EOR-assessment plan will be developed and submitted to the examination department

UHS with the students' scores as part of the internal assessment.

The Prescription Inference Cards will be a part of the log-book entries.

At least two Prescription Inference Cards per block will be a part of the log entries

The marks obtained by the students will be based on the log-book entries, and the Prescription Inference Cards

Principal/DME will ensure that in addition to securing marks in the internal assessment the ward assessments are a college's internal criteria for proceeding to the block examination.

Principal/DME will ensure that all the sections have been filled out before final submission to the University for the professional Examination.

Before signing the log book entry, the DME/HOD will ensure that the skill/task has been achieved by the student.



BLOCK-08	
CFRC Code	Task/Skill
CFRC3-023	Oncological History Taking Take history from patients with suspected or confirmed malignancy, including presenting complaints, duration, and associated symptoms (e.g., weight loss, fatigue, bleeding).
CFRC3-024	Self-Examination of Breast Perform and demonstrate personal self examination of Breast as primary screening and prevention.
CFRC3-026	Breast examination Perform a systematic breast examination by inspecting for asymmetry, skin dimpling, nipple retraction, discharge, ulceration, or peau d'orange.
CFRC3-027	Examination of lump Inspect and palpate a lump, and describe its characteristics based on parameters: site, size, shape, surface, margin, consistency, tenderness, mobility, temperature, transillumination, fluctuation, pulsatility, and regional lymphadenopathy.
CFRC3-028	Lymph node palpation Palpate and describe lymph nodes; cervical, axillary, epitrochlear, and inguinal for site, size, shape, consistency, tenderness, mobility, and matting.
CFRC3-029	Biopsy procedure Observe the steps of biopsy procedure for cancer diagnosis. Identify indications and precautions.
CFRC3-030	Chemotherapy and Palliative Care Identify common chemotherapy-related adverse effects and initial management. Observe and assist in palliative and comfort care, including pain relief, nutritional support, and psychological care for terminal patients.
CFRC3-031	Breaking bad news Observe a clinician delivering bad news to a patient diagnosed with malignancy, noting communication techniques and emotional handling. Practice the communication skill of breaking bad news to a patient diagnosed with malignancy.
CFRC3-032	Effective counselling techniques Demonstrate empathy and effective communication when counseling oncology patients and their families.
CFRC3-033	Examination of hip joint Perform hip joint examination, including Trendelenburg test.

CFRC3-034	Examination of knee joint Examine knee joint using ligament stability tests, meniscal tests, patellar tap, and bulge sign.
CFRC3-035	Examination of foot Examine ankle and foot using Thompson test for Achilles tendon rupture.
CFRC3-036	Examination of hand Inspect patients' hands to identify and describe common deformities such as swan neck, boutonnière, and claw hand.
CFRC3-037	Lumbar spine examination Demonstrate lumbar spine examination, including straight leg raise (SLR) and femoral stretch tests. Inspect and palpate for spinal deformities such as kyphosis, scoliosis, and lordosis
CFRC3-038	Application/removal of plaster slab Apply and remove a plaster slab or back slab under supervision.
CFRC3-039	Splint application Demonstrate proper technique for splint application and limb immobilization.
CFRC3-040	Steroid injection administration Observe and assist in joint aspiration or local steroid injection under aseptic conditions.
CFRC3-041	X-ray interpretation of bones and joints Interpret X-rays of long bones, joints, and spine to identify common fractures or dislocations.
CFRC3-042	Personal Protective Equipment (PPE) Demonstrate donning and doffing personal protective equipment (PPE) while managing infectious disease patients.
CFRC3-043	Sputum Collection for TB Culture and Sensitivity Observe and narrate the procedure for collection, labeling, transport, and storage of sputum specimens for tuberculosis culture and sensitivity, highlighting aseptic technique and biosafety measures. (see annexure 2)
CFRC3-044	Interpretation of vital signs Measure and interpret vital signs (temperature, pulse, respiratory rate) in patients with acute febrile illness.

CFRC3-045	Post-Exposure Prophylaxis Observe post-exposure management steps for needle-stick injuries or other occupational exposures.
CFRC3-046	Protocol for Pus specimen collection Collection, Transport and Storage of Pus Specimen for Culture & Sensitivity

Note: Before signing the logbook entry, the DME/HOD will ensure that the skill/task has been achieved by the student.

Annexure II

Collection, Transport and Storage of Sputum Specimen for TB Culture & Sensitivity

Learning Outcomes

The students will be able to:

1. Describe why the accurate sputum collection, transport, and storage are essential for reliable TB culture and drug sensitivity testing (DST).
2. Describe how to prepare and instruct patients for proper sputum (not saliva) collection.
3. Describe the characteristics of an ideal sputum specimen (volume, appearance, timing).
4. Describe the time limits and temperature conditions for transporting sputum specimens to the laboratory.
5. Understand and describe the triple packaging system used for specimen safety and infection control during transport.
6. Specify the optimal storage temperature and maximum duration for sputum before processing
7. Recognize biosafety measures (e.g., PPE, sealed containers) during sputum handling.
8. Understand the importance of correct labeling and documentation to accompany the sample to the lab.
9. Explain how proper specimen management supports early and accurate diagnosis, especially in detecting MDR-TB/XDR-TB

Collection of Sputum Specimen:

Give the patient a clean (need not be sterile), dry, wide-necked, leak-proof container, and request him or her to cough deeply to produce a sputum specimen. The best time for collection of sputum specimen is early morning.

Instructions for the Patient:

Use a wide-mouthed, sterile, leak-proof plastic container with a tight-fitting screw cap.

Volume: At least 3–5 mL of sputum (not saliva)

1. Instruct the Patient to his/her their mouth with water (not any mouthwash) to reduce contamination.
2. Take a deep breath
3. Cough deeply from the chest (not saliva)
4. Expectorate sputum into the container
5. Avoid saliva or nasal discharge
6. Tighten the cap of the container to avoid contamination and spillage
7. For accurate and reliable detection of Mycobacterium Tuberculosis, three consecutive specimens on three consecutive days should be collected.

Transport of sputum Specimen to Microbiology laboratory:

1. Transport the specimen to the Microbiology laboratory within 1-2 hours
2. If delay is expected, the specimen can be stored at 2–8°C for up to 48–72 hours
3. Do not Freeze the specimen
4. The sputum specimen for TB culture should be transported in triple packaging system

Sealed Sputum container with sputum specimen

Specimen should be sealed in Biohazard Zipper bag

The biohazard zipper bag should be placed in a Biohazard transport box

The specimen should be properly labelled with patient name, unique ID, date and time of collection

ANNEXURE III

(Collection, Transport and Storage of Pus Specimen for Culture & Sensitivity)

Learning Outcomes

The students will be able to:

1. Understand the importance of proper Pus collection techniques in an aseptic manner to avoid contamination
2. Describe the steps involved in collecting PUS, including patient preparation, site preparation and sample handling.
3. Select the appropriate tubes/containers for Pus collection and transport media and understand the importance of viability of organisms in the specimen
4. Understand the importance of proper labelling and documentation to ensure patient safety and sample tracking
5. Understand the importance of timely transport of specimen to the Microbiology laboratory to ensure timely analysis.

6. Understand how factors like sample handling, storage and transportation can affect test results

Collection and Transport of Pus Specimen Pus specimen should be collected by a medical officer or an experienced nurse. Pus from an abscess is best collected at the time, the abscess is incised and drained, or after it has ruptured naturally. When collecting pus from abscesses, wounds, or other sites, special care should be taken to avoid contaminating the specimen with commensal organisms from the skin. As far as possible, a specimen from a wound should be collected before an antiseptic dressing is applied.

1. Using a sterile technique, aspirate or collect from a drainage tube up to 5 ml of pus. Transfer to a leak-proof sterile container.
2. When pus is not being discharged, use a sterile cotton-wool swab to collect a sample from the infected site. Immerse the swab in a container of Amies transport medium. Label the specimen and as soon as possible deliver it with a completed request form to the laboratory. Do not transport the Pus swab without transport medium
3. When mycetoma is suspected, obtain a specimen from a draining sinus tract using a sterile hypodermic needle to lift up the crusty surface over the sinus opening. This method of specimen collection has the advantage that the pus obtained is usually free from secondary organisms and the draining granules can usually be seen clearly and removed for microscopical examination. Transfer the pus to a sterile container.
4. When tuberculosis is suspected: Aspirate a sample of the pus and transfer it to a sterile container. The container should be packed into a biohazard bag to prevent its transmission to others.
5. When the tissue is deeply ulcerated and necrotic (full of dead cells) aspirate a sample of infected material from the side wall of the ulcer using a sterile needle and syringe. Transfer to a sterile container.
6. Fluid from pustules, buboes, and blisters: Aspirate a specimen using a sterile needle and syringe. Transfer to a sterile container.
7. Serous fluid from skin ulcers, papillomas, or papules, that may contain treponemes collect a drop of the exudate directly on a clean cover glass and invert it on a clean slide. Immediately deliver the specimen to the laboratory for examination by dark-field microscopy.

Transport of Pus Specimen to Microbiology Laboratory

1. Collect the specimen using a sterile cotton wool swab. Insert it in a container of Amies transport medium
2. When the material is aspirated fluid from a pustule, transfer the fluid to a sterile, leak-proof container.

3. Send the specimens with a completed request form to reach the microbiology laboratory within 6 hours (Amies transport Medium). The Aspirated Pus should be transported to the Microbiology laboratory within 1 hour of collection.



University of Health
Sciences Lahore

**Modular Integrated
Curriculum 2K23**
MBBS Year-03

YEAR-3



PERLS

IMPLEMENTATION PLAN
This section includes the implementation strategy for the PERL Module. It is advised that the DME and facilitators from respective colleges involved in implementing PERLS should read this section carefully before initiating related instructional activities in respective colleges.
PORTFOLIO TEMPLATE
A portfolio template is hereby given with proposed activities for the colleges to use /modify as per their resources. Please note that Portfolio can be hard-bound or e-portfolio depending on the individual college's decision.



NEOPLASIA

*Proposed Sequence of Topics Mentioned below. Medical Colleges are at liberty to manage according to their resources. Topics can switch within each Block				Total Hours = 1.5
Research (R) in the PERL curriculum will be delivered by the Department of Community Medicine as a longitudinal component from the first to the fourth year of the MBBS program. At the end of the fourth year, students' research projects will be assessed through a dedicated PERL station.				
Code	Domain	Topic	Specific Learning Objectives	Proposed Portfolio Entry
PERLs-3-015	Ethics	Cultural/religious views on Do Not Resuscitate	Explore the diverse cultural and religious perspectives on Do Not Resuscitate (DNR) orders and understand how these views influence end-of-life decisions in the context of neoplasia care.	Submit your hospital Protocol for Do-Not-Resuscitate.
PERLs-3-017	Research	Sample Selection	Describe the principles of population selection in medical research. ☐ Calculate sample size in medical research. ☐ Evaluate how population and sample size affect validity and generalizability.	

INFECTIOUS DISEASES				
*Proposed Sequence of Topics Mentioned below. Medical Colleges are at liberty to manage according to their resources. Topics can switch within each Block				Total Hours = 06
Research (R) in the PERL curriculum will be delivered by the Department of Community Medicine as a longitudinal component from the first to the fourth year of the MBBS program. At the end of the fourth year, students' research projects will be assessed through a dedicated PERL station.				
Code	Domain	Topic	Specific Learning Objectives	Proposed Portfolio Entry
PERLs-3-018	Professionalism	Professional Responsibility in Public Health	Recognize the professional duty of healthcare workers to protect vulnerable patients, colleagues, and the community by adhering to infection control protocols and promoting public health measures. Effectively communicate the risks and management strategies related to contagious diseases to patients and their families (i.e Tuberculosis) balancing public health concerns with individual patient rights and privacy.	Make a public awareness poster on infection control.
PERLs-3-019	Ethics	End-of-life decisions, ventilator use	Explore the ethical considerations involved in end-of-life decisions, including using ventilators, balancing patient autonomy, family wishes, and medical judgment in m	Write a case analysis on end-of-life decisions, particularly regarding ventilator use, and propose an ethically sound approach to decision-making.
PERLs-3-020	Research	Developing Research Hypotheses and Questions	Understand the process of formulating research hypotheses and developing research questions, with a focus on creating clear, testable, and relevant questions using PICO	Evidence of submitted research hypothesis/question to assigned Research Mentor.

			Formulate a research question and corresponding hypothesis based on a gap identified in the existing literature related to the research problem identified previously. Submit a research proposal with a problem statement supported by a brief literature review, a well-defined research question and a hypothesis	
PERLs-3-021	Research	Research Design	Classify various study designs with examples. Explain the strengths and limitations of common study designs in medical research. Evaluate and select an appropriate study design based on the research question.	

MUSCULOSKELETAL AND LOCOMOTION-II				
*Proposed Sequence of Topics Mentioned below. Medical Colleges are at liberty to manage according to their resources. Topics can switch within each Block				Total Hours = 06
Research (R) in the PERL curriculum will be delivered by the Department of Community Medicine as a longitudinal component from the first to the fourth year of the MBBS program. At the end of the fourth year, students' research projects will be assessed through a dedicated PERL station.				
Code	Domain	Topic	Specific Learning Objectives	Proposed Portfolio Entry
PERLs-3-022	Research	Research approaches	Differentiate between qualitative, quantitative, and mixed-methods research approaches.	
PERLs-3-023	Professionalism	Adapting to the Physician's Role	Appreciate the skills to adapt to the physician's role, including managing stress, handling uncertainty, and making clinical decisions, while demonstrating professionalism in diverse clinical settings.(skills include emotional resilience, critical thinking, communication, and time management)	Submit a reflective essay on a clinical experience where you applied these skills to manage stress, handle uncertainty, and make clinical decisions, proposing strategies to develop your adaptability further.
PERLs-3-024	Ethics	Autonomy in rehabilitation, Informed consent	Discuss the process of obtaining informed consent, ensuring patients are fully aware of their treatment options, risks, and potential outcomes. ☐ Ensure the patient's autonomy is respected throughout the decision-making process.	Develop an Informed consent Sheet for patients undergoing rehabilitation after trauma.
PERLs-3-025	Leadership	Entrepreneurship in Healthcare	principles of entrepreneurship in healthcare, including identifying gaps in healthcare services, understanding	Propose an innovative solution that could address the gap or improve

			innovation, and exploring how entrepreneurial thinking can improve patient care and healthcare delivery. ☐ Identify a gap or unmet need in the healthcare system (e.g., a service or technology that could improve patient outcomes) and suggest an innovative solution or approach.	patient care, with a focus on how entrepreneurial thinking can be applied.
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**Modular Integrated
Curriculum 2K23
MBBS Year-03**

A stylized, three-dimensional logo resembling a lowercase 'i' or a caduceus is positioned behind the word 'EXPOS'. It has a blue and purple gradient and a circular dot at the top.

EXPOS

ORY

Volume: 03

Modular Integrated
Curriculum 2K23



Module Rationale

To integrate Expository Writing with an Introduction to Information Technology (IT) course for undergraduate medical students, we can align the IT skills taught each year with the writing tasks and objectives. The aim is to enhance students' digital literacy and writing skills, which is crucial for modern medical practice.

This integrated spiral of Expository Writing and IT ensures that as students advance in their medical education, they also develop digital literacy skills. These skills complement their writing abilities and prepare them for modern medical practice, where digital communication, research, and data management are essential. By the end of the 4-year program, students will be proficient in writing and using technology to support their work as healthcare professionals.

Year 3: Expository Writing III Research writing, data handling, and presentation skills			
THEORY			
Code	Subject: Expository writing & IT		Total Hours =10
	Specific Learning Outcome	Integrating Disciplines	Topics
EXP-03	Expository Writing Focus: 1. To use Advanced grammar for, sentence structure, and writing persuasive essays and case reports with medical evidence. 2. To write full-length review articles and case studies. IT Integration: IT Skills: 3. To use Excel& SPSS for Making tables, graphs, pie chats of medical data 4. To use AI Tools for creating professional presentations. Writing Application: 5. Learn to use tools (e.g., Excel) & SPSS for making managing patient data. 6. To create clear, visually appealing presentations for research projects using AI tools.	PERLS, Pharmacology Community Medicine, Pathology Forensic Medicine	Writing essays and case reports with differential diagnosis Introduction to Excel & SPSS for making tables, graphs, pie chats of medical data Making Presentations with AI tools.

Volume-03



STUDENT PORTFOLIO

YEAR-03





Curriculum 2K23 (MBBS Year-3)



MODULE: MUSCULOSKELETAL & LOCOMOTION-II

DATE FROM: _____

DATE TO: _____

CHECKED BY: _____

Roll No:	
Assignment Topic:	
Date:	
Evidence of submitted Research Problem to assigned Research Mentor.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Submit a reflective essay on a clinical experience where you applied these skills to manage stress, handle uncertainty, and make clinical decisions, proposing strategies to develop your adaptability further.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Develop an Informed consent Sheet for patients undergoing rehabilitation after trauma.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Propose an innovative solution that could address the gap or improve patient care, with a focus on how entrepreneurial thinking can be applied.	
Facilitator Remarks:	



Curriculum 2K23 (MBBS Year-3)



MODULE: INFECTIOUS DISEASES

DATE FROM: _____

DATE TO: _____

CHECKED BY: _____

Roll No:	
Assignment Topic:	
Date:	
Make a public awareness poster on infection control.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Write a case analysis on end-of-life decisions, particularly regarding ventilator use, and propose an ethically sound approach to decision-making.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Submit a summary of your progress from your last mentoring session, including feedback, areas identified for improvement, and the action plan you developed with your mentor to enhance your professional growth. Submit a brief reflection on an infection control practice you observed during your	
Facilitator Remarks:	



Curriculum 2K23 (MBBS Year-3)



MODULE: NEOPLASIA

DATE FROM: _____

DATE TO: _____

CHECKED BY: _____

Roll No:	
Assignment Topic:	
Date:	
Submit your hospital Protocol for Do-Not-Resuscitate.	
Facilitator Remarks:	



SKILL ACQUISITION WORKSHOPS



Workshop Schedule for MBBS students

The Following Life Saving Workshops are included in the "Modular Integrated Curriculum 2K23"¹¹ final version:

Sr. No.	Course Name	Academic Year	Duration
1.	Cardiac First Response (CFR) / Basic Life Support (BLS)	1 st Year	2 days
2.	Immediate Care Cardiac (ICC) / Advanced Life Support Cardiac (ALSC)	2 nd Year	1 day
3.	Immediate Care Trauma (ICT) / Advanced Life Support Trauma (ALST)	3 rd Year	1 day
4.	Emergency Triage and Assessment (ETAT)	4 th Year	1 day
5.	Emergency Neonatal Care (ENC)/ Neonatal Resuscitation (NR)	5 th Year	1 day
6.	Emergency Obstetrics and Neonatal Care (EMONC)	5 th Year	1 day

