MSK -II Module

3rd Year MBBS

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Khyber Medical University (KMU) Vision:

Khyber Medical University will be the global leader in health sciences academics and research for efficient and compassionate health care.

Khyber Medical University (KMU) Mission:

Khyber Medical University aims to promote professional competence through learning and innovation for providing comprehensive quality health care to the nation.

Institute of Health Professions Education & Research (IHPER) Mission:

To produce leaders, innovators and researchers in health professions education who can apply global knowledge to resolve local issues.

Teaching Hours Allocation

Table 1 Hours Allocation

S. No	Subject	Hours
1	Pathology	33
2	Pharmacology	18
3	Forensic medicine	22
4	Community medicine	4
5	Pediatrics	6
6	Medicine	5
7	Orthopedics	5
8	Radiology	1
9	Family medicine	1
10	Eye	1
11	ENT	1
12	PRIME/Research	1+1
	Total	**99**

Themes

S.NO	Themes	Duration 4 weeks
1	Aching Bones	2 week (1st& 2nd Week)
2	Joint Stiffness	1 week (3rd Week)
3	Muscle weakness and Trauma	1 week (4th Week)
4	Skin Rash and Itching	1 week (5th Week)

Learning Objectives

At the end of this module, students will be able to

Knowledge

Reinforcement

- Explain important anatomical and physiological characteristics of musculoskeletal system

Pathology

- Explain essential pathological concepts of diseases involving
  - Joints
  - Bones
  - Muscles
  - Cartilages
  - Soft tissues
  - Skin

Pharmacology

- Describe the clinical applications of NSAIDs in the treatment of musculoskeletal disorders
- Describe the basic and clinical pharmacology of drugs affecting bone and Mineral Homeostasis
- Describe the basic and clinical pharmacology of drugs used to treat Gout and Rheumatoid Arthritis
- Describe the basic and clinical pharmacology of skeletal muscles relaxants
- Describe the drugs used for dermatological disorders.

Community medicine

- Classify accidents and injuries, burden of RTAs, prevention and control strategies of RTAs
- Define poliomyelitis and discuss the epidemiology, prevention, and control of poliomyelitis
- Define Ergonomics, Principles of Ergonomics, Epidemiology of MSK disorders and their prevention
- Discuss burden and prevention of Osteoporosis, Osteomalacia and Rickets

Forensic medicine

- Define and classify wounds
- Describe types of hurt according to Qisas and Diyat Act
- Describe firearm and explosives injuries
- Describe RTAs, Railway and Aircraft injuries
- Describe the Medico legal aspects of wounds

Medicine

- Describe Osteoporosis and Osteomalacia and develop its management plan
- Discuss Rheumatoid Arthritis and Ankylosing Spondylitis
- Discuss Myopathies

Orthopedic

- Describe types of fracture and explain the open fractures
- Explain the emergency treatment of an injured limb.
- Identify and describe common benign and malignant bone tumours.
- Describe common ligamentous, tendon injuries and common spinal fractures

Dermatology

- Describe the pathological lesions of skin and their clinical presentation with differential diagnosis.

Radiology

- Interpret normal X-Rays and X-Rays showing structural deformities

Paeds

- Explain bone pains and aches in children
- Discuss Congenital/Hereditary Myopathies

Eye

- Describe the basic Anatomy of Eye

ENT

- Discuss anatomy of Ear, Nose, Para nasal Sinuses and Oral Cavity

Prime:

Communication Skills

- Dealing with patients

Behavioral Sciences / Professionalism

- Attributes of Professionalism

Research

- Study Designs
- Research question

Skills:

Special Pathology

- Identify morphological features of Basal cell carcinoma and Squamous cell carcinoma
- Identify morphological features of Tuberculous osteomyelitis

Pharmacology

- Writing a prescription for a patient with Rheumatoid arthritis
- Writing a prescription for a patient with Gout

Forensic Medicine

- Identify types of mechanical wound
- Identify the causative weapon
- Identify the manner of wound causation
- Issue a medico legal certificate for the given wound

Orthopedic/Medicine

- Acquire a thorough history in relevance to MSK and take focused general examination of musculoskeletal system.
- Identify, evaluate and interpret the X-ray to diagnose fractures/musculoskeletal conditions
- Discuss the radiological characteristics of fractures and radiological characteristics of dislocations

Attitude:

While not necessarily taught explicitly, students are expected to develop following attitudes throughout the course:

1. Demonstrate teamwork, leadership, punctuality and good manners
2. Demonstrate humbleness and use socially acceptable language during academic and social interactions with colleagues and teachers.
3. Make ethically competent decisions when confronted with an ethical, social or moral problem related to MSK in professional or personal life
4. Discuss ethical issues, social and preventive aspect of health care in the context of MSK system.

Theme I: Aching Bones			
Subject	**Topic**	**Learning Outcome**	**Hrs**
Anatomy	**Important Anatomical Characteristics of MSK**	Discuss important anatomical characteristics of musculoskeletal system	1
Physiology	**Important Physiological Characteristics of MSK**	Discuss important Physiological characteristics of musculoskeletal system	1
Pathology	**Metabolic diseases of bone**	Describe the following metabolic diseases of bone from pathological point of view: • Osteopenia and Osteoporosis • Paget Disease (Osteitis Deformans) • Osteomalacia and Rickets	1
	Fracture and Osteonecrosis	Classify fractures and describe healing process in fractures	1
		Enlist aetiologies of osteonecrosis (Avascular Necrosis)	
		Describe clinical features and morphological findings in osteonecrosis	
	Osteomyelitis	Classify osteomyelitis and delineate its etiology, pathogenesis, common clinical features, morphological findings, and complications related to osteomyelitis	1
	Bone Tumors	Classify bone tumors	1
		Describe the frequency of different bone tumors in general population	
		Enlist common clinical features found in common types of bone tumors.	
		Enlist key morphological features of Osteosarcoma, Osteoid osteoma and Osteoblastoma	
	Cartilage-Forming Tumors	Discuss the frequency of different cartilaginous tumors in general population	1

		Enlist common clinical features of common cartilaginous tumors	
	Tumors of Unknown Origin	Describe etiology, pathogenesis, and key clinico-morphological features of Ewing's Sarcoma and Giant Cell Tumor	1
	Lesions Simulating Primary Neoplasms	Describe key clinico-morphological features and essential points in the pathogenesis of Fibroma	1
Pharmacology	**NSAIDs**	Describe the clinical applications of NSAIDs in the treatment of musculoskeletal disorders	1
	Drug affecting Bone & Mineral Homeostasis	Classify drugs used in metabolic bone disorders	2
		Enlist calcium preparations	
		Describe clinical uses of calcium salts	
		Enlist vitamin D preparations	
		Describe actions of vitamin D on intestine, Kidney and Bone	
		Describe clinical uses of vitamin D	
		Describe the mechanism of action, clinical uses and adverse effects of Bisphosphonates	
		Describe the mechanism of action, clinical uses and adverse effects of calcitonin	
		Classify drugs used to treat osteoporosis	
		Explain the mechanism of action of SERM (Raloxifene) and RANK ligand (Denosumab)	
Forensic Medicine	**Mechanism of production of wound**	Define and classify wound	1
		Describe mechanism of action of wound production associated factors, appearance and complications.	
	Abrasion	Define and classify abrasion	
		Explain types of abrasion and mechanism of wound production associated factors, appearance, and complication.	
		Differentiate between antemortem & postmortem abrasion.	

		Describe the medico legal aspects of abrasion	
	Bruise	Define and classify bruise	1
		Describe types of bruise and mechanism of wound production associated factors, appearance, and complication.	
		Differentiate between ante mortem & postmortem Bruise.	
		Describe the medico legal aspects of Bruise	
	Lacerated wound	Define and Classify lacerated wound	1
		Describe types of lacerated wound and Mechanism of wound production associated factors, appearance and complication.	
		Difference between ante mortem & postmortem Laceration.	
		Describe the medico legal aspects of Lacerated wound	
	Incised Wound	Define and classify incised wound	1
		Describe types of incised wound and mechanism of wound production associated factors, appearance, and complication.	
		Difference between ante mortem & postmortem Incised Wound	
		Differentiate between incised & lacerated wound.	
		Describe the medico legal aspects of Incised wound	
	Stab wounds	Define and classify Stab wound	
		Describe types of Stab wound and mechanism of wound production associated factors, appearance, and complication.	
		Difference between ante mortem & postmortem stab wound	
		Describe the medico legal aspects of stab wound	
	Battered baby syndrome	Explain the salient features of diagnosing Battered baby syndrome	1
Community Medicine	**Ergonomics**	Describe Ergonomics	1
		Describe the principles & importance of Ergonomics at work place	

		Explain the epidemiology of musculoskeletal disorders	
		Discuss prevention and control strategies for Musculoskeletal disorders	
	Public health aspects of disability limitations: (Osteoporosis, Osteomalacia and Rickets)	• Explain the types of rehabilitation and public health issues faced by the disabled person, and measures to be taken for rehabilitation • Discuss epidemiology and prevention of Osteoporosis, Osteomalacia and Rickets	1
Medicine	**Osteoporosis and Osteomalacia**	Describe Osteoporosis and Osteomalacia	1
		List common causes and risk factors of Osteoporosis and Osteomalacia	
		Discuss clinical features , differential diagnosis of Osteoporosis and Osteomalacia	
		Enlist the Investigations for patient presenting with Osteoporosis and Osteomalacia	
Orthopedics	**Fractures**	Describe and illustrate types of fracture, fracture patterns, displacement and angulation of fractures in children and adults.	1
		Explain open fractures Discuss the basic principles of wound debridement.	
	Bone Tumours	To recognize, investigate and describe the radiological features of common benign and malignant Bone Tumours.	1
Radiology	**X-Ray Interpretation**	Identify and interpret different types of fractures	1
Eye	**Anatomy of Eye**	Describe anatomy of Orbit	1
		Describe anatomy of Eye Ball	
ENT	**Ear**	Explain anatomy of ear	1
Paeds	**Bone pains and aches in children**	Common causes of bones aches and pains including Growing pains in children	1

		Discuss nutritional Rickets causation, clinical presentation, Lab and Radiological findings and prevention	
	Skeletal dysplasia's	Discuss clinical feature and differential diagnosis of the following • Achondroplasia • Osteopetrosis • Osteogenesis Imperfecta	1
PRIME/Research	**Proposal writing**	Write a proposal for research project using KMU or CPSP guidelines or any other standard guidelines	3
PRIME/MEDICAL EDUCATION	**Attributes of professionalism-Empathy**	Discriminate empathy and sympathy	1
		Demonstrate empathy in patient-health professional interaction	

Theme II: Joint Stiffness

Subjects	Topics	Los	Hours
Pathology	Osteoarthritis	Describe aetiology and pathogenesis of osteoarthritis	1
		Discuss clinical and morphological features of osteoarthritis	
		Enumerate complications of osteoarthritis	
	Rheumatoid Arthritis	Describe aetiology and pathogenesis of Rheumatoid Arthritis	1
		Discuss clinical and morphological features of Rheumatoid Arthritis	
		Enumerate complications of Rheumatoid Arthritis	
	Seronegative Spondyloarthropathies	Classify and explain Spondyloarthropathies	1
		Discuss pathogenesis and clinical features of Ankylosing Spondylitis	
		Discuss pathogenesis and clinical features of Reactive Arthritis	
		Discuss pathogenesis and clinical features of Psoriatic Arthritis	
	Infectious Arthritis	Describe etiology and pathogenesis of Suppurative Arthritis	1
		Discuss clinical featuresand morphological features of Suppurative arthritis.	

		Enumerate complications of Suppurative arthritis	
		Describe etiology and pathogenesis of Mycobacterial Arthritis	
		Discuss clinical features and morphological features of Mycobacterial Arthritis	
		Enumerate complications of Mycobacterial Arthritis	
	Rheumatic Fever	Describe key structural features, virulence factors, modes of pathogenesis and diagnosis of Streptococcus pyogenes	1
		Explain etiology, pathogenesis, clinical features, diagnosis, and complications of Rheumatic Fever.	
	Crystal-Induced Arthritis	Enlist different types of crystal-Induced arthritis	1
		Describe key points of aetiology, pathogenesis, clinical features, morphological features, and complications of: • Gout • Calcium Pyrophosphate Crystal deposition Disease (Pseudo-Gout)	
Pharmacology	Pharmacotherapy of Gout	Classify drugs used to treat gout	2
		Describe the role of NSAIDs in the treatment of gout	
		Describe the role of Glucocorticoids in the treatment of gout	
		Describe the mechanism of action of various drugs (Colchicine, Probenecid, Allopurinol, Febuxostat) used in the treatment of Gout	
		Discuss the adverse effects of anti-gout drugs	
		Describe the drug interactions of Allopurinol and Probenecid	
		Enlist the drugs causing hyperuricemia	
		Discuss the mechanism by which drugs causes hyperuricemia	
	Pharmacotherapy of Rheumatoid Arthritis	Classify drugs used in Rheumatoid arthritis	3
		Discuss the role of NSAIDs in Rheumatoid Arthritis	

		Discuss the role of Glucocorticoids in Rheumatoid Arthritis	
		Define and classify DMARDs	
		Enlist biological and non-biological agents used to treat rheumatoid arthritis	
		Describe pharmacokinetics mechanism of action, clinical uses and adverse effects of methotrexate.	
		Enlist adverse effects and therapeutic uses of DMARDs	
Forensic Medicine	Age of Wound & Complication	Describe events associated with wound healing	1
		Differentiate between old and fresh wound	
		Describe injury zone on the basis of histo-chemical changes and Biochemical events taking place.	
	Qisas & Diyat	Define hurt, Wound & injury	1
		Classify hurt according to International law	
		Types of hurt according to Qisas & Diyat Act	
		Explain Punishments (tazir), compensation and Fine (Diyat)	
	Injured person medical aid act	Describe the salient features of injured person medical aid act	1
	Work-men compensation laws	Describe the salient features of Work-men compensation laws	
Medicine	Rheumatoid Arthritis	Describe Rheumatoid Arthritis with its clinical presentation and differential diagnosis.	1
	Ankylosing Spondylitis	Describe Ankylosing Spondylitis with its clinical presentation and differential diagnosis.	
Orthopedics	Bone and Joint Infections	Descirbe the aetiology, pathology, clinical presentation and investigations of Bone and Joint infections	1
ENT	Nose, Para Nasal Sinuses & Oral Cavity	Discuss anatomy of Nose, Para nasal sinuses & oral cavity	1
Paeds	Juvenile Idiopathic arthritis (JIA)	Discuss criteria for classification of JIA	1
		Discuss its clinical features and differential diagnosis.	

PRIME/MEDICAL EDUCATION	Communication Skills: Dealing with Patients	Explain importance of answering questions and giving explanation and/or instructions	1
Theme III: Muscle weakness and Trauma			
Subjects	**Topics**	**Los**	**Hours**
Pathology	Tumors of adipose tissue	Classify soft tissue tumors and provide a brief description of their salient clinical features	1
		Enlist key morphological features of lipoma and liposarcoma	
	Fibrous Tumors	Describe important clinico-pathological and morphological features of: • Nodular Fasciitis • Fibromatoses	1
	Muscle tumors	Classify muscle tumors	1
		Describe etiology, clinico-morphological features, and complications of Rhabdomyosarcoma	
		Describe etiology, clinico-morphological features, and complications of Leiomyoma	
		Describe etiology, clinico-morphological features, and complications of Leiomyosarcoma	
		Describe etiology, clinico-morphological features, and complications of Fibrosarcoma	
	Skeletal muscle atrophy and myopathies	Describe pathological features of Skeletal Muscle Atrophy	1
		Describe pathological features of Neurogenic and Myopathic changes in Skeletal Muscle	
		Describe pathological features of Inflammatory Myopathies	
		Describe pathological features of Dermatomyositis	
		Describe pathological features of Polymyositis	
		Describe pathological features of Inclusion Body Myositis	

		Describe pathological features of Toxic Myopathies	
	Inherited Diseases of Skeletal Muscle	Describe genetic abnormality, morphology and clinical features of Muscular Dystrophies	1
Pharmacology	Skeletal muscle relaxants	Classify skeletal muscle relaxants.	3
		Describe the mechanism of action of Non-depolarizing and depolarizing neuromuscular blockers.	
		Discuss the differences between depolarizing and non-depolarizing skeletal muscle relaxants	
		Describe the therapeutic uses and adverse effects of skeletal muscle relaxants	
		Describe centrally acting skeletal muscle relaxants (Spasmolytics)	
		Name drugs causing malignant hyperthermia	
		Discuss the rationale for use of Dantrolene in the treatment of malignant hyperthermia	
		Discuss succinylcholine apnea and its management	
Forensic Medicine	Transportation Accidents	Discuss injuries to the driver & front seat occupant and rare seat occupant.	2
		Discuss spinal injuries including Whiplash injury and railway spine	
		Explain Railway injuries with medico legal significance	
		Discuss Air crash accidents.	
	Firearm Injuries	Describe wound ballistics and its types.	3
		Describe terms /Definition used in firearm injuries, types of bullets.	
		Explain basic mechanism of firearm.	
		Explain ranges of fire in firearm injuries, beveling phenomenon, wound production mechanism.	
		Identify types of gun powders and ammunition used.	
		Interpret findings of injuries produced by different weapons.	
		Explain pattern of identification of entry and exit wound.	

		Explain information inferred from examination of firearm entry wound.	
	Injuries By Explosives	Describe mechanism of production of injuries by bomb blast.	1
		Explain different causes of death in blast injuries.	
		Interpret Autopsy findings in explosion fatalities.	
	Thermal Injuries	Describe Thermal Injuries	1
		Describe their classifications	
		Describe Burns and Scalds	
	Electrical Injuries	Explain electrocution	1
		Types of electrical injuries	
		Describe PM findings	
		Explain Lightning	
Community Medicine	Rehabilitation of disabilities: Poliomyelitis	Define disabilities and its types, and concepts, and distinguish between impairment, disability and handicapped, and significance of DALYs and QALYs.	1
		Describe the Epidemiology, determinants & distribution of poliomyelitis	
		Describe the prevention and control measures and rehabilitation of Poliomyelitis	
	Accidents and its prevention	Describe of types of accidents and their mechanisms and their prevention (Haddon`s model)	
		Describe Road Traffic Accidents	1
		Classify different types of road traffic accidents and injuries?	
		Describe and compare the burden of road traffic accidents in a developed country with a developing country like Pakistan	
		List and Explain the risk factors of road traffic accidents	
		Explain effective public health strategies used at individual and national level to prevent for road traffic accidents	
Medicine	Myopathies	Define Myopathy	1

		Enlist Myopathies (Hereditary & Acquired Myopathies)	
		Describe the etiology and clinical features of Myopathies	
		Plan investigations for Myopathies	
Orthopedic	Application of Cast	Explain the emergency treatment of an injured limb.	1
		Explain emergency immobilization techniques of the Neck, Spinal column and limbs.	
		Describe and discuss the basic principles pertaining to application of a cast, the complications of cast application.	
		Discuss the principles of a three-point pressure system in a cast.	
	Soft Tissue Injuries, Spinal Injuries	Describe the common ligamentous and tendon injuries and advise appropriate management	1
		Recognize common Spinal fractures, and provide appropriate initial management	
Paeds	Congenital/Hereditary Myopathies	Discuss common congenital and hereditary myopathies, their genetics, causation, clinical presentation, diagnosis.	1
	Duchene Muscular dystrophy (DMD)	Describe DMD, its clinical presentation and differential diagnosis.	1

Theme IV: Skin Rash and Itching

Subjects	Topics	Los	Hours
Pathology	Important pathological terms	Define the following skin lesions and describe these with respect to their etiologies and gross morphological features. • Macule • Papule • Nodule • Plaque • Vesicle • Bulla • Blister • Pustule • Scale • Lichenification • Excoriation	1

		• Hyperkeratosis • Parakeratosis • Acanthosis • Dyskeratosis • Acantholysis • Papillomatosis • Lentiginousspongiosis • Urticaria • Pemphigus • Bullous pemphigoid • Warts	
	Eczematous dermatitis	Classify eczematous dermatitis	1
		Describe the morphological and clinical features of acute eczematous dermatitis	
		Describe the etiology and pathogenesis of • Contact dermatitis • Atopic dermatitis • Drug related eczematous dermatitis • Photoeczematus eruption • Primary irritant dermatitis	
	Erythema multiforme	List the conditions which are associated with erythema multiforme and describe its clinical features	1
	Psoriasis	Describe the etiopathogenesis, morphological and clinical features of psoriasis	1
	Pre-malignant epithelial lesions	List the pre-malignant epithelial lesions (Epidermal) • List the predisposing factors for squamous cell carcinoma of skin • Differentiate squamous cell carcinoma from basal cell carcinoma on the basis of morphology and clinical features	1
	Nevocellular Nevi and Malignant Melanoma	List types of Nevocellular Nevi (Congenital Nevus, blue nevus, Spitz's Nevus, halo nevus dysplastic nevus) along with their clinical significance. (Dermal) • Describe the clinical and morphological features of dysplastic nevi • Describe malignant melanoma with respect to frequent site of	1

		origin, clinical and morphological features.	
	Viral skin infections	Describe the following viral skin infections in context of etiopathogenesis: • Herpes simplex virus • Herpes zoster virus	1
	Fungal skin infections	Classify and describe the following fungal skin infections in context of etiopathogenesis: • Tinea • Candida	1
	Skin and soft tissue infections	Describe the following skin lesions in context of ethiopathogenesis and diagnosis • Impetigo • Cellulitis / Erysipelas • Folliculitis • Skin Abscess (Furuncle & Carbuncle) • Necrotizing Soft Tissue Infections	1
Pharmacology	Drugs used for dermatological disorders	Classify dermatological preparations	2
		Enlist topical antibacterial, antifungal &antiviral preparations.	
		Describe clinical uses and adverse effects of topical antibacterial, antifungal and antiviral drugs.	
		Discuss oral treatment of candidiasis dermatophytosis and onychomychosis.	
		Describe various acne preparations and antibiotics used to treat acne.	
		Enlist clinical uses of immunomodulators (Imiquimod, Tacrolimus) related to skin diseases.	
		Enlist ectoparasiticides	
		Enlist clinical uses and adverse effects of Permethen.	
		Discuss drug treatment of Scabies & Pediculosis.	
		Describe the mechanism of action and adverse effects of various agents used for pigmentation disorders	

		Describe the clinical uses and adverse effects of drugs used for the treatment of psoriasis.	
		Describe clinical uses and adverse effects of topical corticosteroids	
		Enlist dermatological disorders responsive to topical corticosteroids ranked in order of sensitivity.	
		Discuss keratoytic agents, antipruritic agents, trichogenic and antitrichogenic agents and use of antineoplastic agents in topical conditions	
Medicine/Dermatology	Important pathological terms with Clinical presentations	Enlist and explain the clinical presentation of the following skin Lesions: • Macule • Papule • Nodule • Plaque • Vesicle • Bulla • Blister • Pustule • Scale • Lichenification • Excoriation • Hyperkeratosis • Parakeratosis • Acanthosis • Dyskeratosis • Acantholysis • Papillomatosis • Lentiginousspongiosis • Urticaria • Pemphigus • Bullous pemphigoid • Warts	1
	Pre-malignant skin conditions	Enlist the pre-malignant skin conditions Explain their differential diagnosis on the basis of clinical presentations Enlist the relevant investigations	1
	Malignant conditions of skin	Enlist the malignant conditions of skin (squamous and basal cell carcinoma) Explain their differential diagnosis on the basis of clinical presentations	

		Enlist the relevant investigations	
	Nevocellular Nevi	List the types of Nevocellular Nevi and discuss their differential diagnosis on the basis of their clinical presentations. Enlist the relevant investigations	
Family medicine	Leishmaniasis	Explain the clinical features and management of cutaneous Leishmaniasis in primary healthcare	
Paeds	Juvenile Dermatomyocytis (JDM)	Discuss diagnostic criteria of JDM	1
		Discuss its clinical features differential diagnosis	
PRIME/Research	Qualitative and quantitative study 3	Write a proposal for research project using KMU or CPSP guidelines or any other standard guidelines	7

Pathology Practicals

Week	Topic	Practical
Week 1	Tuberculous osteomyelitis	Identify gross and microscopic morphological features of tuberculous osteomyelitis
Week 2	Osteogenic sarcoma, Osteoclastoma and chondrosarcoma	Identify gross and microscopic morphologic features of osteogenic sarcoma, osteoclastoma and chondrosarcoma
Week 3	ASO (Anti Streptolysin O) test	Perform ASO (Anti Streptolysin O) test by latex agglutination technique
Week 4	Tumors of Skin	Identify gross and microscopic features of • Squamous cell carcinoma • Basal cell carcinoma

Pharmacology Practicals

Week	Topic	Practical
Week 1	Gout	Write prescription for Gout
Week 2	Rheumatoid Arthritis	Write prescription for Rheumatoid Arthritis
Week 4	Drugs used to treat Dermatological Disorders	Write down prescription for scabies.

		Write down prescription for Psoriasis
Forensic Practicals		
Week	**Topic**	**Practical**
Week 1	Examination of wound and weapon	• Abrasion • Bruise • Laceration • Incised wound • Qisas and Diyat models/ • Dura prints of injuries
Week 2	Examination of wound and weapon	• Stab wound • Fracture • Displacement • Qisas and Diyat models of injuries/ multimedia slides remaining
Week 3	Examination of wound and weapon	Firearm injuries / Weapons Identification of bullets
Week 4	Writing a medico legal certificate	Medicolegal report writing in case of firearm Injuries

Learning Resources

- Digital library
- Virtual Learning Environment (VLE)
- Ambulatory care settings which may be outside the hospital
- Accident and Emergency/Casualty departments
- Clinical Skills Laboratory
- Community Settings
- Electives in own and other Institutions
- Experimental Laboratories
- Hospital Wards
- Out Patient Departments
- Medical College setting

List of reference books

Recommended books

Pharmacology

Text Books

1. Basic and Clinical Pharmacology by Katzung BG, Masters SB, Trevor AJ, 14th Edition.
2. Lippincott's Illustrated Reviews: Pharmacology, Clark MA, Finkel R, Rey JA, Whalen K, 7th Edition.

Reference Books:

1. Goodman & Gilman's The Pharmacological Basis of Therapeutics, Brunton LL 12th Edition.

Pathology

Text Books

1. Robbins Pathologic Basis of Disease

Reference Books:

1. Walter& Israel's General Pathology"
2. Harsh Mohan's "Textbook of Pathology".
3. Pathology Illustrated
4. Stefan Silbernagl's "Color Atlas of Pathophysiology"
5. Muir's Textbook of Pathology

Textbook for Microbiology

1. Jawetz, Melnick&Adelberg's "Medical Microbiology"

Reference Books:

1. Levinson's "Medical Microbiology & Immunology"
2. Sherris Medical Microbiology
3. Lippincott's Illustrated Reviews: Microbiology

Forensic Medicine

Textbooks:

1. CK Parikh new edition

Reference Books:

1. Nasib R Awan
2. KrishanVij
3. Smart series (SSS) Forensic MCQs with explanation
4. Gazette Pakistan Penal Code (PPC)
5. VV Pillay and Rajesh Bardale

Community Medicine

Textbooks:

1. Public Health & Community Medicine by Shah Ilyas Ansari; 8th Edition
2. Parks Textbook of Prevention & Social Medicine by K.Park; 24th Edition

Ophthalmology

Textbooks:

1. Parsons' Disease of the EYE

Reference Books:

2. Short Kanski
3. Clinical Ophthalmology Shafi M Jatoi

Research and Biostatistics

1. A synopsis of epidemiology and basic statistics (Ali Muhammad Mir)
2. Statisstics at square one (TDVS winscow)
3. Essentials of research design and methodology. (GeoferryMarczyk)
4. The essentials of clinical epidemiology (Robert H)

Medicine & Allied

1. Kumar and Clark for Medicine 8th edition 2012
2. Davidson

Surgery & Allied

1. Bailey and Love. Short Practice of Surgery 25th edition 2008
2. Current Surgical Diagnosis and Treatment 13th edition 2009

Otorhinolaryngology

1. PL Dhingra 7th edition
2. Cuming standards, ENT

Paediatric Medicine

1. Text book of paediatrics, Pakistan paediatrics association
2. Essentials of paediatrics, Nelson, Eight edition
3. Basis of paediatrics, Pervez akbar khan, Ninth edition

Assessment Plan – 3rd Year MBBS

The year-3 will be assessed in 3 blocks

1) Block-1 (Foundation 2 and Infection and Inflammation modules) will be assessed in paper-G
2) Block-2 (Multisystem, blood and MSK modules) will be assessed in paper-H
3) Block-3 (CVS and Respiratory module) will be assessed in paper-I
4) Each written paper consists of 120 MCQs and
5) Internal assessment will be added to final marks in KMU as shown in below table.

In OSPE, each station will be allotted 6 marks, and a total of 120 (+10% marks of internal assessment) marks are allocated for each OSPE/OSCE examination

Year 3 Professional Exam in System-based Curriculum

Theory paper	Modules	Theory marks	Internal assessment theory (10%)	OSPE/OSPE	Internal assessment OSPE/OSPE (10%)	TOTAL MARKS
Paper G	Foundation-II Inf.&Inflamm.	120	14	120	14	268
Paper H	Multisystem Blood MSK-II	120	13	120	14	267
Paper I	CVS-II Respiratory-II	120	13	120	12	265
TOTAL MARKS		360	40	360	40	800

*Research viva of 20 marks will be conducted in paper-L. However, the rest of 15 marks will be decided by the concerned department internally for the contribution of the students in research project/thesis.

Assessment Blueprints

Table 2 Paper-H (Multisystem, Blood and MSK)

Subjects	Total MCQs
MSK	44
Multisystem I	41
Blood and Immunology	35
Total	**120**

Table 3 OSCEs

Subjects	Total OSCEs
MSK	10
Multisystem I	0
Blood and Immunology	10
Total	**20**

A minimum of 20 stations will be used in final exams. Total marks will be 120 (6 marks for each station).