

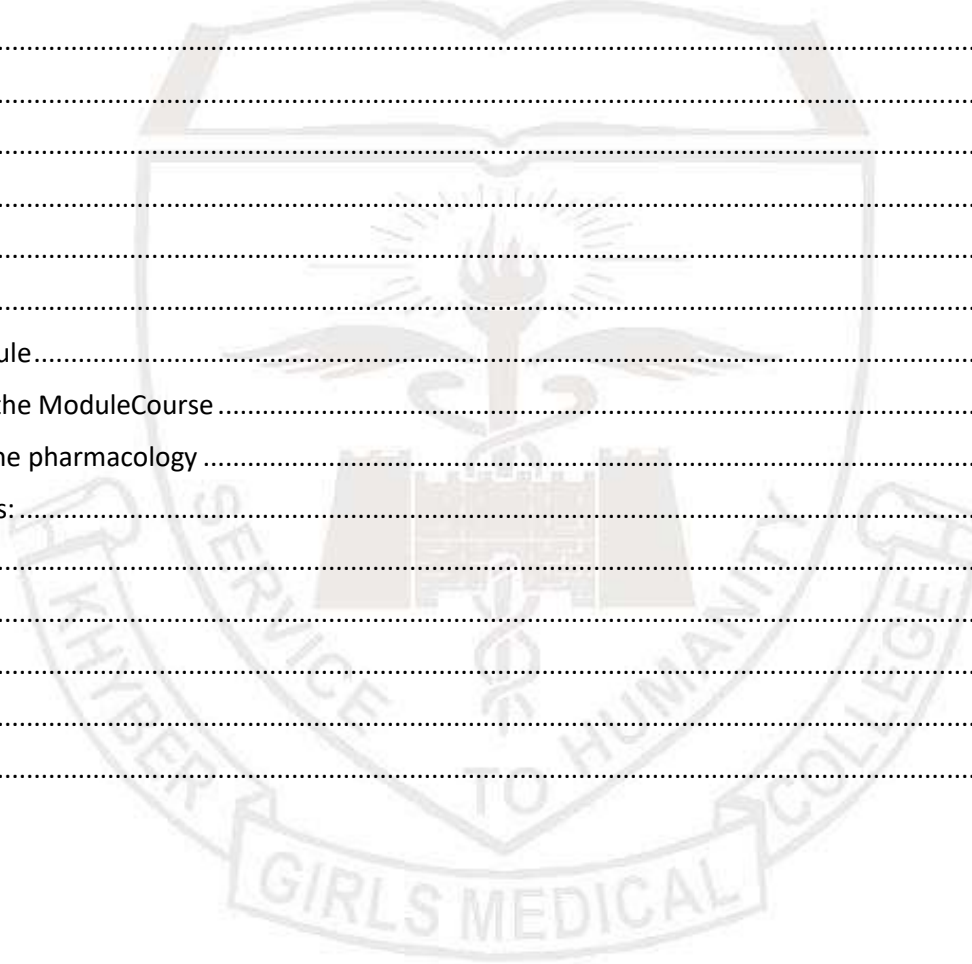


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**MUSCULOSKELETAL
MODULE
STUDY GUIDE
3RD YEAR MBBS**

Khyber Medical University: Vision.....
Khyber Girls Medical College: Vision
Khyber Girls Medical College: Mission.....
Curriculum Committee KGMC.....
Module committee.....
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 AFFECTIVE.....
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Vision and Mission of KGMC

Khyber Medical University: Vision



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

Khyber Girls Medical College: Vision



Khyber Girls Medical College will promote health care leaders that are critical thinker, ethical, research oriented, culturally and professionally competent

Khyber Girls Medical College: Mission



To develop competent health care leaders by ensuring appropriate policies, procedures which reflect ethical, cultural, community orientated and evidence based practices to achieve best possible health outcomes for society at large.

Curriculum Committee KGMC

Chair:

Professor Dr.Zahid Aman , Dean KGMC.

Vice-Chair:

Professor Dr Amir Mohammad, Vice Dean KGMC.

Clinical Sciences:

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- Dr. Bushra Rauf Department of Gynae KGMC HMC.
- Dr. Sofia Iqbal, Department of Ophthalmology KGMC HMC.
- Dr. Said Amin Department of Medicine KGMC HMC.
- Dr. Ghareeb Nawaz Department of ENT KGMCHMC.
- Dr. Jamshed Alam Department of Surgery KGMC HMC.
- Dr. Ambreen Ahmad, Department of Pediatrics KGMC HMC.
- Dr. Ain-ul-Hadi Department of Surgery KGMC HMC.
- Dr. Fawad Rahim Department of Medicine KGMC HMC.

Behavioral Sciences:

- Dr. Ameer Abbas Department of Psychiatry KGMC HMC.

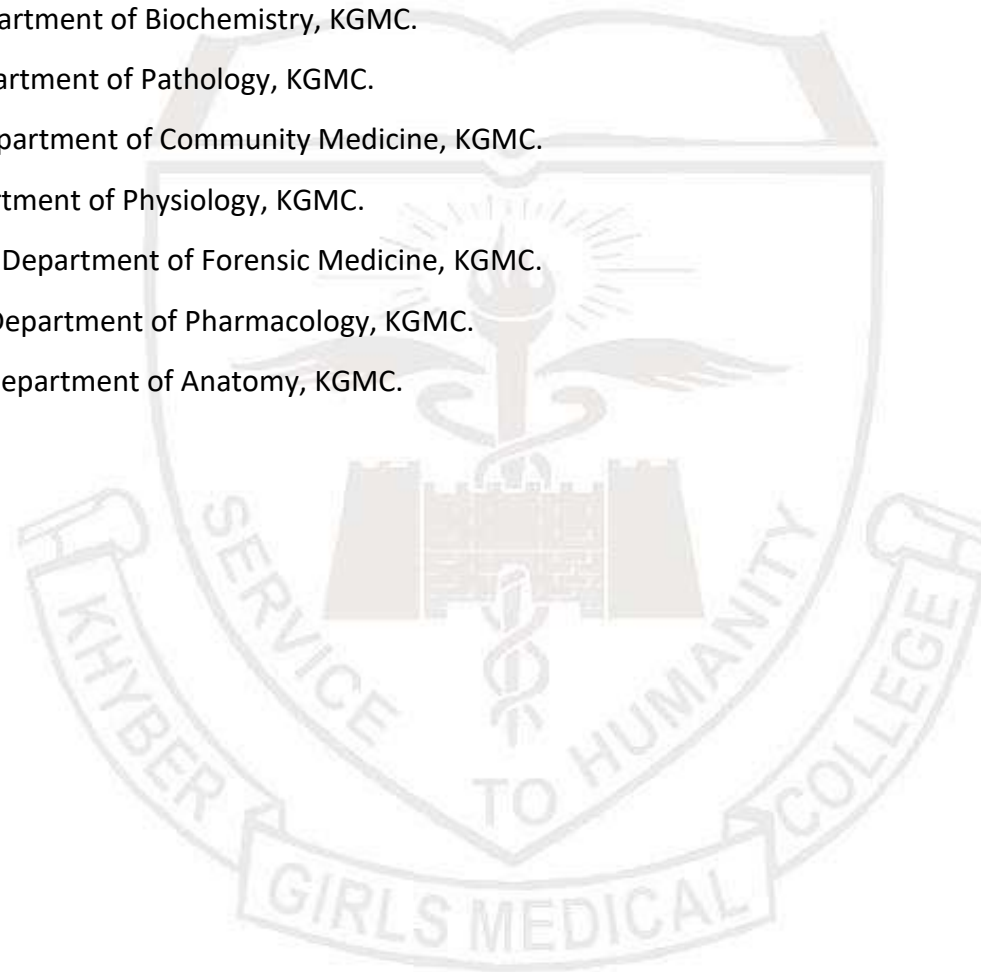
Medical Education

- Dr. Naheed Mahsood, Department of Medical Education, KGMC.
- Dr. Naveed Afzal Khan, Department of Medical Education, KGMC.

- Dr Onaiza Nasim , Department of Medical Education, KGMC

Basic Sciences:

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- Dr. Khalid Javed Department of Pathology, KGMC.
- Dr. Raheela Amin Department of Community Medicine, KGMC.
- Dr. Zubia Shah Department of Physiology, KGMC.
- Dr. Naheed Siddique Department of Forensic Medicine, KGMC.
- Dr. Shams Suleman Department of Pharmacology, KGMC.
- Dr. Shahab-ud-Din, Department of Anatomy, KGMC.



Musculoskeletal Committee

1. Dr. Shams Suleman Associate Professor Department of **Pharmacology**.....**Member**
2. Prof. Dr. Bushra Rauf Department of **Gynae**.....**Member**
3. Prof. Dr. Samia Tabassum Department of **Gynae**.....**Member**
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6. Dr. Zeeshan Assistant Professor Department of **Surgery(orthopedic)**.....**Member**
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9. Dr. Fawad Rahim Assistant Professor Department of **Medicine**.....**Member**
10. Dr. Sidra Ghafoor Lecturer Department of **Pharmacology**.....**Member**
11. Dr. Shahid Lecturer Department of **Pharmacology**.....**Member**



Integrated curriculum:

An integrated curriculum is all about making connections, whether to real life or across the disciplines, about skills or about knowledge. An integrated curriculum fuses subject areas, experiences, and real-life knowledge together to make a more fulfilling and tangible learning environment for students. Integrated teaching means that subjects are presented as a meaningful whole. Students will be able to have better understanding of basic sciences when they repeatedly learn in relation to clinical examples. Case based discussions, computer-based assignments, early exposure to clinics, wards, and skills acquisition in skills lab are characteristics of integrated teaching program.

Outcomes of the curriculum:

The outcomes of the curriculum of MBBS According to the PMDC are as follows

- Knowledgeable
- Skilful
- Community Health Promoter
- Problem-solver
- Professional
- Researcher
- Leader
- Role model

KNOWLEDGE

By the end of five year MBBS program the KGMC student should be able to;

1. Acquire a high level of clinical proficiency in history taking, physical examination, differential diagnosis, and the effective use of medicine's evolving diagnostic and procedural capabilities including therapeutic and palliative modalities
2. Manage the common prevalent diseases in community
3. Identify the common medical emergencies
4. Develop plan for prevention of common community diseases
5. Formulate a referral plan
6. Compose a prescription plan

PSYCHOMOTOR

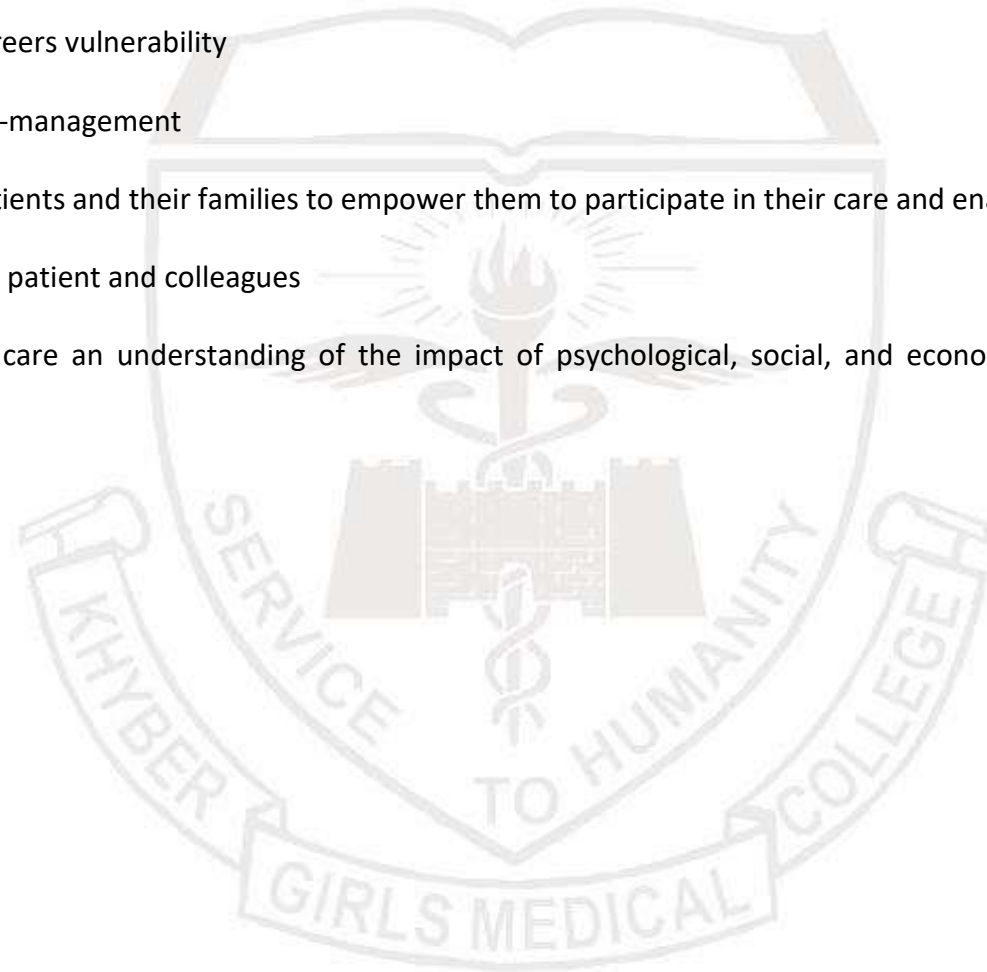
By the end of five year MBBS program the KGMC student should be able to;

1. Demonstrate the ability to perform the disease specific relevant examination
2. Respond to common medical emergencies
3. Master the skill of first aid
4. Perform BLS
5. Apply the best evidenced practices for local health problems

AFFECTIVE

By the end of five year MBBS program the KGMC student should be able to

1. Relate to patient and caregivers vulnerability
2. Demonstrate ethical self-management
3. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
4. Display compassion with patient and colleagues
5. Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease



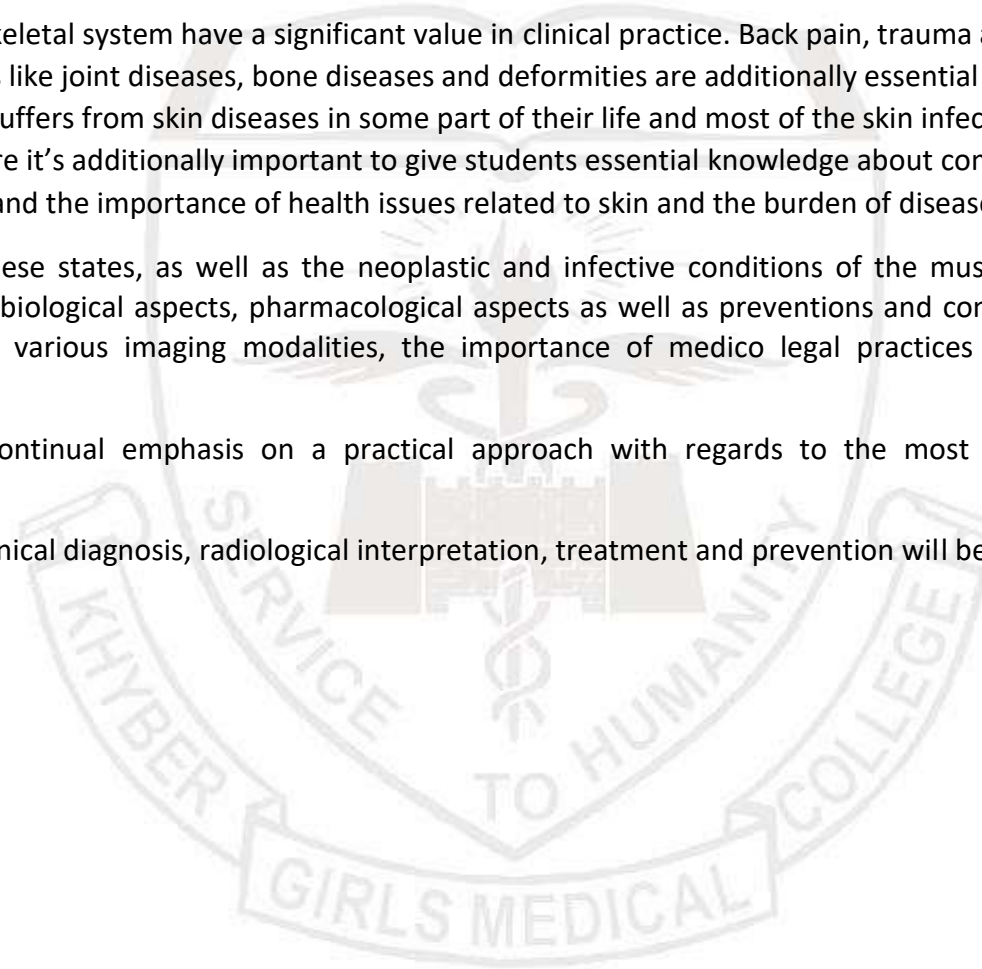
Introduction to the Musculoskeletal Module

Conditions related to musculoskeletal system have a significant value in clinical practice. Back pain, trauma and violence are presently quite common in Pakistan. Conditions like joint diseases, bone diseases and deformities are additionally essential to have a command on. Analogously 70% of the people suffers from skin diseases in some part of their life and most of the skin infections are endemic in developing countries like Pakistan. Therefore it's additionally important to give students essential knowledge about common skin lesions and explain their clinical presentation to understand the importance of health issues related to skin and the burden of disease.

Hence to better understand these states, as well as the neoplastic and infective conditions of the musculoskeletal system including skin, appropriate pathological, microbiological aspects, pharmacological aspects as well as preventions and control will be covered in this specific module. The relevance of the various imaging modalities, the importance of medico legal practices will also be put into prospective throughout.

There will be an additional continual emphasis on a practical approach with regards to the most common conditions affecting the musculoskeletal system.

The important aspects of the clinical diagnosis, radiological interpretation, treatment and prevention will be likewise emphasized.



General learning outcomes

Knowledge

By the end of this module, students should be able to:

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

Peds

- 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:

By the end of this module, it is a core objective that students should have acquired the following 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

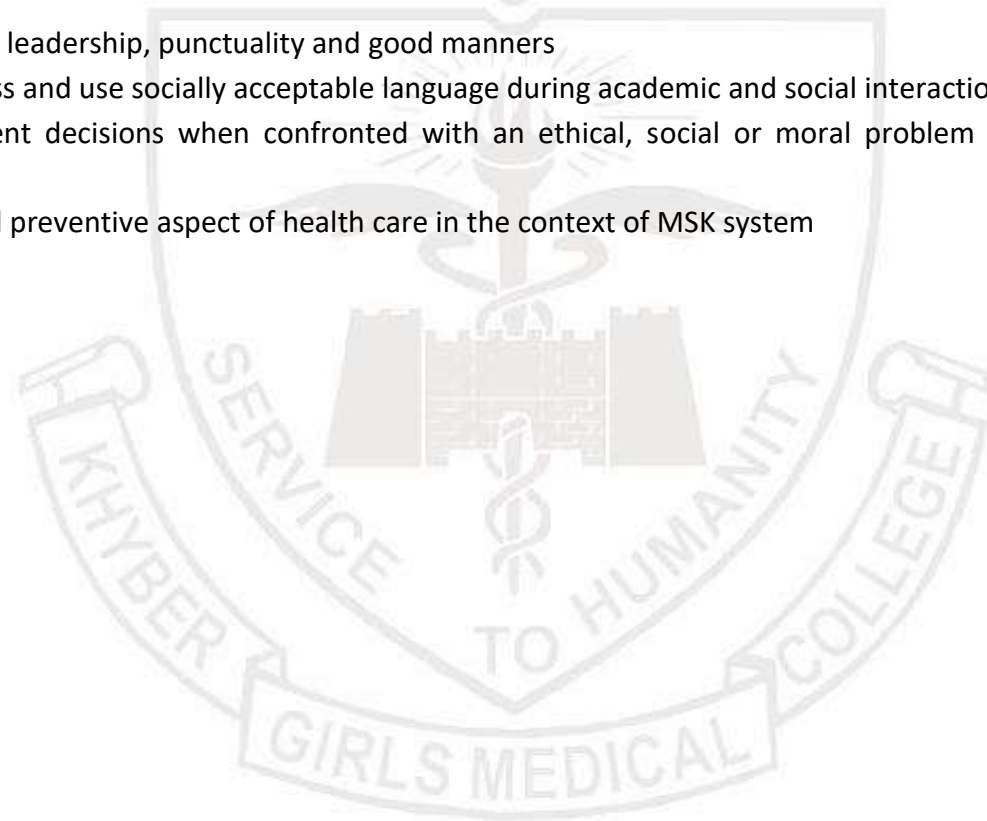
- Acquire a thorough history in relevance to MSK and take focused general examination of musculoskeletal system.
- Identify, evaluate and interpret the X-ray to diagnose fractures/musculoskeletal conditions
- Discuss the radiological characteristics of fractures and radiological characteristics of dislocations

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

Discuss ethical issues, social and preventive aspect of health care in the context of MSK system



Musculoskeletal Module

Year-3

Khyber Medical College Peshawar

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

Theme 1 Aching Bones

Subject	Topic	S.No	Learning Outcome	MIT	ASSESSMENT
Anatomy	Important Anatomical Characteristics of MSK	1.	Discuss important anatomical characteristics of musculoskeletal system	SGD	MCQ
Physiology	Important Physiological Characteristics of MSK	2.	Discuss important Physiological characteristics of musculoskeletal system	LGF	MCQ
Pathology	Metabolic diseases of bone	3.	Describe the following metabolic diseases of bone from pathological point of view: <ul style="list-style-type: none"> • Osteopenia and Osteoporosis • Paget Disease (Osteitis Deformans) • Osteomalacia and Rickets 	LGF	MCQ
	Fracture and Osteonecrosis	4.	Classify fractures and describe healing process in fractures	LGF	MCQ
		5.	Enlist aetiologies of osteonecrosis (Avascular Necrosis)		
		6.	Describe clinical features and morphological findings in osteonecrosis		
Osteomyelitis	7.	Classify osteomyelitis and delineate its etiology, pathogenesis, common clinical features, morphological findings, and	LGF	MCQ	

			complications related to osteomyelitis		
Bone Tumors	8.	Classify bone tumors	LGF	MCQ	
	9.	Describe the frequency of different bone tumors in general population			
	10.	Enlist common clinical features found in common types of bone tumors.			
	11.	Enlist key morphological features of Osteosarcoma, Osteoid osteoma and Osteoblastoma			
Cartilage-Forming Tumors	12.	Discuss the frequency of different cartilaginous tumors in general population	LGF	MCQ	
	13.	Enlist common clinical features of common cartilaginous tumors			
Tumors of Unknown Origin	14.	Describe etiology, pathogenesis, and key clinico-morphological features of Ewing's Sarcoma and Giant Cell Tumor	LGF	MCQ	
Lesions Simulating Primary Neoplasms	15.	Describe key clinico-morphological features and essential points in the pathogenesis of Fibroma	LGF	MCQ	
Pharmacology	NSAIDs	16.	Describe the clinical applications of NSAIDs in the treatment of	LGF	MCQ

			musculoskeletal disorders		
	Drug affecting Bone & Mineral Homeostasis	17.	Classify drugs used in metabolic bone disorders	LGF	MCQ
		18.	Enlist calcium preparations		
		19.	Describe clinical uses of calcium salts		
		20.	Enlist vitamin D preparations		
		21.	Describe actions of vitamin D on intestine, Kidney and Bone		
		22.	Describe clinical uses of vitamin D		
		23.	Describe the mechanism of action, clinical uses and adverse effects of Bisphosphonates		
		24.	Describe the mechanism of action, clinical uses and adverse effects of calcitonin		
		25.	Classify drugs used to treat osteoporosis		
		26.	Explain the mechanism of action of SERM (Raloxifene) and RANK ligand (Denosumab)		

Forensic Medicine	Mechanism of production of wound	27.	Define and classify wound	SGD	MCQ		
		28.	Describe mechanism of action of wound production associated factors, appearance and complications.				
	Abrasion	29.	Define and classify abrasion				
		30.	Explain types of abrasion and mechanism of wound production associated factors, appearance, and complication.				
		31.	Differentiate between antemortem & postmortem abrasion.				
		32.	Describe the medico legal aspects of abrasion				
	Bruise	33.	Define and classify bruise			LGF	MCQ
		34.	Describe types of bruise and mechanism of wound production associated factors, appearance, and complication.				
35.		Differentiate between ante mortem & postmortem Bruise.					
36.		Describe the medico legal aspects of Bruise					

Lacerated wound	37.	Define and Classify lacerated wound	LGF	MCQ
	38.	Describe types of lacerated wound and Mechanism of wound production associated factors, appearance and complication.		
	39.	Difference between ante mortem & postmortem Laceration.		
	40.	Describe the medico legal aspects of Lacerated wound		
Incised Wound	41.	Define and classify incised wound	SGD	MCQ
	42.	Describe types of incised wound and mechanism of wound production associated factors, appearance, and complication.		
	43.	Difference between ante mortem & postmortem Incised Wound		
	44.	Differentiate between incised & lacerated wound.		
	45.	Describe the medico legal aspects of Incised wound		
Stab wounds	46.	Define and classify Stab wound		

		47.	Describe types of Stab wound and mechanism of wound production associated factors, appearance, and complication.		
		48.	Difference between ante mortem & postmortem stab wound		
		49.	Describe the medico legal aspects of stab wound		
Community Medicine	Ergonomics	50.	Describe Ergonomics	LGF	MCQ
		51.	Describe the principles & importance of Ergonomics at work place		
		52.	Explain the epidemiology of musculoskeletal disorders		
		53.	Discuss prevention and control strategies for Musculoskeletal disorders		
	Osteoporosis, Osteomalacia and Rickets	54.	Discuss epidemiology and prevention of Osteoporosis, Osteomalacia and Rickets	LGF	MCQ
Medicine	Osteoporosis and Osteomalacia	55.	Describe Osteoporosis and Osteomalacia	LGF	MCQ
		56.	List common causes and risk factors of Osteoporosis and Osteomalacia		

		57.	Discuss clinical features, differential diagnosis and management plan of Osteoporosis and Osteomalacia		
		58.	Enlist the Investigations for patient presenting with Osteoporosis and Osteomalacia		
Orthopedics	Fractures	59.	Describe and illustrate types of fracture, fracture patterns, displacement and angulation of fractures in children and adults.	LGF	MCQ
		60.	Explain open fractures Discuss the basic principles of wound debridement.		
	Bone Tumours	61.	To recognize, investigate and describe the radiological features of common benign and malignant Bone Tumours.	LGF	MCQ
Radiology	X-Ray Interpretation	62.	Identify and interpret different types of fractures	LGF	MCQ
Eye	Anatomy of Eye	63.	Describe anatomy of Orbit	LGF	MCQ
		64.	Describe anatomy of Eye Ball		
ENT	Ear	65.	Explain anatomy of ear	LGF	MCQ

Paeds	Bone pains and aches in children	66.	Common causes of bones aches and pains including Growing pains in children	LGF	MCQ
		67.	Discuss nutritional Rickets causation, clinical presentation, Lab and Radiological findings and prevention		
	Skeletal dysplasia's	68.	Discuss clinical feature and differential diagnosis of the following <ul style="list-style-type: none"> • Achondroplasia • Osteopetrosis • Osteogenesis Imperfecta 	LGF	MCQ
Research	Qualitative and quantitative study designs	69.	List and explain different study designs that can be used in quantitative and qualitative research studies	LGF	MCQ
Behavioral Sciences	Attributes of prof	70.	Discriminate empathy and sympathy	LGF	MCQ
			Demonstrate empathy in patient-health professional interaction		

Theme 2 Joint Stiffness

Pathology	Osteoarthritis	71.	Describe aetiology and pathogenesis of osteoarthritis	LGF	MCQ
		72.	Discuss clinical and morphological features of osteoarthritis		
		73.	Enumerate complications of osteoarthritis		
	Rheumatoid Arthritis	74.	Describe aetiology and pathogenesis of Rheumatoid Arthritis	LGF	MCQ
		75.	Discuss clinical and morphological features of Rheumatoid Arthritis		
		76.	Enumerate complications of Rheumatoid Arthritis		
	Seronegative Spondyloarthropathies	77.	Classify and explain Spondyloarthropathies	LGF	MCQ
		78.	Discuss pathogenesis and clinical features of Ankylosing Spondylitis		
		79.	Discuss pathogenesis and clinical features of Reactive Arthritis		
		80.	Discuss pathogenesis and clinical features of Psoriatic Arthritis		

Infectious Arthritis	81.	Describe etiology and pathogenesis of Suppurative Arthritis	LGF	MCQ
	82.	Discuss clinical features and morphological features of Suppurative arthritis.		
	83.	Enumerate complications of Suppurative arthritis		
	84.	Describe etiology and pathogenesis of Mycobacterial Arthritis		
	85.	Discuss clinical features and morphological features of Mycobacterial Arthritis		
	86.	Enumerate complications of Mycobacterial Arthritis		
Rheumatic Fever	87.	Describe key structural features, virulence factors, modes of pathogenesis and diagnosis of Streptococcus pyogenes	LGF	MCQ
	88.	Explain etiology, pathogenesis, clinical features, diagnosis, and complications of Rheumatic Fever.		
Crystal-Induced Arthritis	89.	Enlist different types of crystal-Induced arthritis	LGF	MCQ

		90.	Describe key points of aetiology, pathogenesis, clinical features, morphological features, and complications of: <ul style="list-style-type: none"> • Gout • Calcium Pyrophosphate Crystal deposition Disease (Pseudo-Gout) 		
Pharmacology	Pharmacotherapy of Gout	91.	Classify drugs used to treat gout	LGF	
		92.	Describe the role of NSAIDs in the treatment of gout		
		93.	Describe the role of Glucocorticoids in the treatment of gout		
		94.	Describe the mechanism of action of various drugs (Colchicine, Probenecid, Allopurinol, Febuxostat) used in the treatment of Gout		
		95.	Discuss the adverse effects of anti-gout drugs		
		96.	Describe the drug interactions of Allopurinol and Probenecid		
		97.	Enlist the drugs causing hyperuricemia		
		98.	Discuss the mechanism by which drugs causes hyperuricemia		

	Pharmacotherapy of Rheumatoid Arthritis	99.	Classify drugs used in Rheumatoid arthritis	LGF	
		100.	Discuss the role of NSAIDs in Rheumatoid Arthritis		
		101.	Discuss the role of Glucocorticoids in Rheumatoid Arthritis		
		102.	Define and classify DMARDs		
		103.	Enlist biological and non-biological agents used to treat rheumatoid arthritis		
		104.	Describe pharmacokinetics mechanism of action, clinical uses and adverse effects of methotrexate.		
		105.	Enlist adverse effects and therapeutic uses of DMARDs		
Forensic Medicine	Age of Wound & Complication	106.	Describe events associated with wound healing	LGF	
		107.	Differentiate between old and fresh wound		
		108.	Describe injury zone on the basis of histo-chemical changes and Biochemical events taking place.		

	Qisas & Diyat	109.	Define hurt, Wound & injury	SGD	
		110.	Classify hurt according to International law		
		111.	Types of hurt according to Qisas & Diyat Act		
		112.	Explain Punishments (tazir), compensation and Fine (Diyat)		
Medicine	Rheumatoid Arthritis	113.	Describe Rheumatoid Arthritis with its clinical presentation, differential diagnosis and management plan.		
	Ankylosing Spondylitis	114.	Describe Ankylosing Spondylitis with its clinical presentation, differential diagnosis and management plan.		
Orthopedics	Bone and Joint Infections	115.	Descirbe the aetiology, pathology, clinical presentation and investigations of Bone and Joint infections	LGF	MCQ
			Discuss the management plan of multiple bone and joint infections.		
ENT	Nose, Para Nasal Sinuses & Oral Cavity	116.	Discuss anatomy of Nose, Para nasal sinuses & oral cavity		
Paeds	Juvenile Idiopathic arthritis	117.	Discuss criteria for classification of JIA	LGF	MCQ

	(JIA)		Discuss its clinical features ,differential diagnosis and its management plan.		
Research	Qualitative and quantitative study designs	118.	Discuss and select the appropriate study design/approach for the research question	SGD	MCQ
Communication Skills	Dealing with Patients	119.	Explain importance of answering questions and giving explanation and/or instructions	SGD	MCQ



Theme 3 Muscle weakness and Trauma					
Pathology	Tumors of adipose tissue	120.	Classify soft tissue tumors and provide a brief description of their salient clinical features	LGF	MCQ
		121.	Enlist key morphological features of lipoma and liposarcoma		
	Fibrous Tumors	122.	Describe important clinico-pathological and morphological features of: <ul style="list-style-type: none"> • Nodular Fasciitis • Fibromatoses 	LGF	MCQ
	Muscle tumors	123.	Classify muscle tumors	LGF	MCQ
		124.	Describe etiology, clinico-morphological features, and complications of Rhabdomyosarcoma		
		125.	Describe etiology, clinico-morphological features, and complications of Leiomyoma		
		126.	Describe etiology, clinico-morphological features, and complications of Leiomyosarcoma		
127.		Describe etiology, clinico-morphological features, and complications of Fibrosarcoma			

	Skeletal muscle atrophy and myopathies	128.	Describe pathological features of Skeletal Muscle Atrophy	LGF	MCQ
		129.	Describe pathological features of Neurogenic and Myopathic changes in Skeletal Muscle		
		130.	Describe pathological features of Inflammatory Myopathies		
		131.	Describe pathological features of Dermatomyositis		
		132.	Describe pathological features of Polymyositis		
		133.	Describe pathological features of Inclusion Body Myositis		
		134.	Describe pathological features of Toxic Myopathies		
	Inherited Diseases of Skeletal Muscle	135.	Describe genetic abnormality, morphology and clinical features of Muscular Dystrophies	LGF	MCQ
Pharmacology	Skeletal muscle relaxants	136.	Classify skeletal muscle relaxants.	LGF	MCQ

		137.	Describe the mechanism of action of Non depolarizing and depolarizing neuromuscular blockers.		
		138.	Discuss the differences between depolarizing and non depolarizing skeletal muscle relaxants		
		139.	Describe the therapeutic uses and adverse effects of skeletal muscle relaxants		
		140.	Describe centrally acting skeletal muscle relaxants (Spasmolytics)		
		141.	Name drugs causing malignant hyperthermia		
		142.	Discuss the rationale for use of Dantrolene in the treatment of malignant hyperthermia		
		143.	Discuss succinylcholine apnea and its management		
Forensic Medicine	Transportation Accidents	144.	Discuss injuries to the driver & front seat occupant and rare seat occupant.	SGD	
		145.	Discuss spinal injuries including Whiplash injury and railway spine		

		146.	Explain Railway injuries with medico legal significance		
		147.	Discuss Air crash accidents.		
	Firearm Injuries	148.	Describe wound ballistics and its types.	LGF	
		149.	Describe terms /Definition used in firearm injuries, types of bullets.		
		150.	Explain basic mechanism of firearm.		
		151.	Explain ranges of fire in firearm injuries, beveling phenomenon, wound production mechanism.		
		152.	Identify types of gun powders and ammunition used.		
		153.	Interpret findings of injuries produced by different weapons.		
		154.	Explain pattern of identification of entry and exit wound.		
		155.	Explain information inferred from examination of firearm entry wound.		
	Injuries By Explosives	156.	Describe mechanism of production of injuries by bomb blast.	LGF	
		157.	Explain different causes of death in		

			blast injuries.		
		158.	Interpret Autopsy findings in explosion fatalities.		
	Thermal Injuries	159.	Describe Thermal Injuries	LGF	
		160.	Describe their classifications		
		161.	Describe Burns and Scalds		
	Electrical Injuries	162.	Explain electrocution	SGD	
		163.	Types of electrical injuries		
		164.	Describe PM findings		
		165.	Explain Lightning		
Community Medicine	Poliomyelitis	166.	Define Poliomyelitis	LGF	MCQ
		167.	Describe the Epidemiology, determinants & distribution of poliomyelitis		
		168.	Describe the prevention and control measures of Poliomyelitis		
	Road Traffic Accidents	169.	Describe Road Traffic Accidents?	LGF	MCQ
		170.	Classify different types of road traffic accidents and injuries?		

		171.	Describe and compare the burden of road traffic accidents in a developed country with a developing country like Pakistan		
		172.	List and Explain the risk factors of road traffic accidents		
		173.	Explain effective public health strategies used at individual and national level to prevent for road traffic accidents		
Medicine	Myopathies	174.	Define Myopathy	LGF	MCQ
		175.	Enlist Myopathies (Hereditary & Acquired Myopathies)		
		176.	Describe the etiology and clinical features of Myopathies		
		177.	Plan investigations for Myopathies		
Orthopedic	Application of Cast	178.	Explain the emergency treatment of an injured limb.	LGF	MCQ
		179.	Explain emergency immobilization techniques of the Neck, Spinal column and limbs.		

		180.	Describe and discuss the basic principles pertaining to application of a cast, the complications of cast application.		
		181.	Discuss the principles of a three-point pressure system in a cast.		
	Soft Tissue Injuries, Spinal Injuries	182.	Describe the common ligamentous and tendon injuries and advise appropriate management	LGF	MCQ
			Recognize common Spinal fractures, and provide appropriate initial management		
Paeds	Congenital/Hereditary Myopathies	183.	Discuss common congenital and hereditary myopathies, their genetics, causation, clinical presentation and diagnosis.	LGF	MCQ
			Discuss the most appropriate management plan for Congenital Myopathies.		
	Duchene Muscular dystrophy (DMD)	184.	Describe DMD, its clinical presentation and differential diagnosis.	LGF	MCQ

Theme 4 Skin Rash and Itching					
Pathology	Important pathological terms	185.	<p>Define the following skin lesions and describe these with respect to their etiologies and gross morphological features.</p> <ul style="list-style-type: none"> • Macule • Papule • Nodule • Plaque • Vesicle • Bulla • Blister • Pustule • Scale • Lichenification • Excoriation • Hyperkeratosis • Parakeratosis • Acanthosis • Dyskeratosis • Acantholysis • Papillomatosis • Lentiginouspongiosis • Urticaria • Pemphigus • Bullous pemphigoid • Warts 	LGF	MCQ
	Eczematous dermatitis	186.	Classify eczematous dermatitis	LGF	MCQ

		187.	Describe the morphological and clinical features of acute eczematous dermatitis		
		188.	Describe the etiology and pathogenesis of <ul style="list-style-type: none"> • Contact dermatitis • Atopic dermatitis • Drug related eczematous dermatitis • Photoeczematus eruption • Primary irritant dermatitis 		
	Erythema multiforme	189.	List the conditions which are associated with erythema multiforme and describe its clinical features	LGF	MCQ
	Psoriasis	190.	Describe the etiopathogenesis, morphological and clinical features of psoriasis	LGF	MCQ
	Pre-malignant epithelial lesions	191.	List the pre-malignant epithelial lesions (Epidermal) <ul style="list-style-type: none"> • 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 	LGF	MCQ
	Nevocellular Nevi and Malignant Melanoma	192.	List types of Nevocellular Nevi (Congenital Nevus, blue nevus, Spitz's Nevus, halo nevus dysplastic nevus)	LGF	MCQ

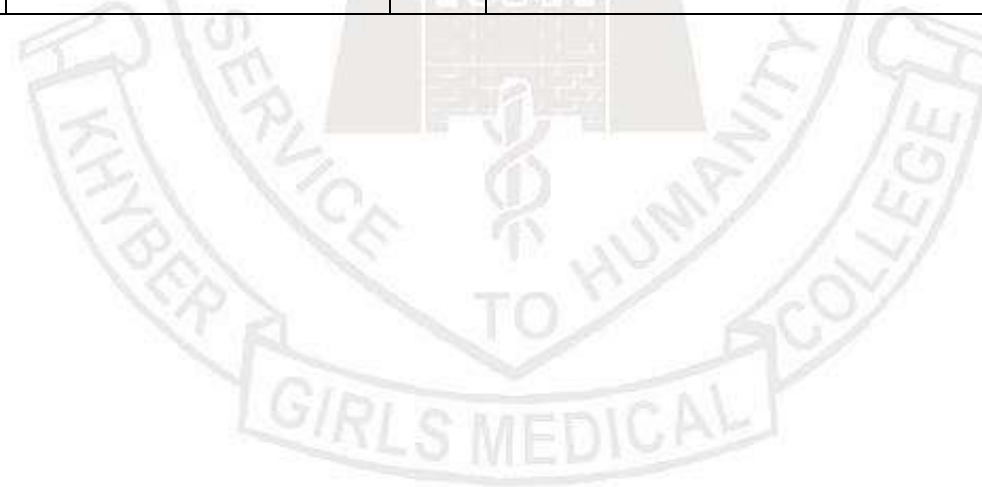
			<p>along with their clinical significance. (Dermal)</p> <ul style="list-style-type: none"> • Describe the clinical and morphological features of dysplastic nevi • Describe malignant melanoma with respect to frequent site of origin, clinical and morphological features. 		
	Viral skin infections	193.	<p>Describe the following viral skin infections in context of etiopathogenesis:</p> <ul style="list-style-type: none"> • Herpes simplex virus • Herpes zoster virus 	LGF	MCQ
	Fungal skin infections	194.	<p>Classify and describe the following fungal skin infections in context of etiopathogenesis:</p> <ul style="list-style-type: none"> • Tinea • Candida 	LGF	MCQ
	Skin and soft tissue infections	195.	<p>Describe the following skin lesions in context of etiopathogenesis and diagnosis</p> <ul style="list-style-type: none"> • Impetigo • Cellulitis / Erysipelas • Folliculitis • Skin Abscess (Furuncle & Carbuncle) • Necrotizing Soft Tissue Infections 	LGF	MCQ
Pharmacology	Drugs used for	196.	Classify dermatological preparations	SGD	

dermatological disorders	197.	Enlist topical antibacterial, antifungal & antiviral preparations.		
	198.	Describe clinical uses and adverse effects of topical antibacterial, antifungal and antiviral drugs.		
	199.	Discuss oral treatment of candidiasis dermatophytosis and onychomycosis.		
	200.	Describe various acne preparations and antibiotics used to treat acne.		
	201.	Enlist clinical uses of immunomodulators (Imiquimod, Tacrolimus) related to skin diseases.		
	202.	Enlist ectoparasiticides		
	203.	Enlist clinical uses and adverse effects of Permethen.		
	204.	Discuss drug treatment of Scabies & Pediculosis.		
	205.	Describe the mechanism of action and adverse effects of various agents used		

			for pigmentation disorders		
		206.	Describe the clinical uses and adverse effects of drugs used for the treatment of psoriasis.		
		207.	Describe clinical uses and adverse effects of topical corticosteroids		
		208.	Enlist dermatological disorders responsive to topical corticosteroids ranked in order of sensitivity.		
		209.	Discuss keratolytic agents, antipruritic agents, trichogenic and antitrichogenic agents and use of antineoplastic agents in topical conditions		
Medicine	Important pathological terms with Clinical presentations	210.	<p>Enlist and explain the clinical presentation of the following skin Lesions:</p> <ul style="list-style-type: none"> • Macule • Papule • Nodule • Plaque • Vesicle • Bulla • Blister • Pustule 	LGF	MCQ

			<ul style="list-style-type: none"> • Scale • Lichenification • Excoriation • Hyperkeratosis • Parakeratosis • Acanthosis • Dyskeratosis • Acantholysis • Papillomatosis • Lentiginousspongiosis • Urticaria • Pemphigus • Bullous pemphigoid • Warts 		
	Pre-malignant skin conditions	211.	<p>Enlist the pre-malignant skin conditions</p> <p>Explain their differential diagnosis on the basis of clinical presentations</p> <p>Enlist the relevant investigations and give appropriate management plan</p>	LGF	MCQ
	Malignant conditions of skin	212.	<p>Enlist the malignant conditions of skin (squamous and basal cell carcinoma)</p> <p>Explain their differential diagnosis on the basis of clinical presentations</p> <p>Enlist the relevant investigations and provide appropriate management plan</p>		

	Nevocellular Nevi	213.	List the types of Nevocellular Nevi and discuss their differential diagnosis on the basis of their clinical presentations.		
			Enlist the relevant investigations and explain its management.		
Paeds	Juvenile Dermatomyocytis (JDM)	214.	Discuss diagnostic criteria of JDM	LGF	MCQ
			Discuss its clinical features differential diagnosis		
Research	Qualitative and quantitative study 3	215.	Write a proposal for research project using KMU or CPSP guidelines or any other standard guidelines	SGD	MCQ



Pathology Practical			
Week	Topic	Practical	Assessment
Week 1	Tuberculous osteomyelitis	Identify gross and microscopic morphological features of tuberculous osteomyelitis	MCQ,OSCE
Week 2	Osteogenic sarcoma, Osteoclastoma and chondrosarcoma	Identify gross and microscopic morphologic features of osteogenic sarcoma, osteoclastoma and chondrosarcoma	MCQ,OSCE
Week 3	ASO (Anti Streptolysin O) test	Perform ASO (Anti Streptolysin O) test by latex agglutination technique	MCQ,OSCE
Week 4	Tumors of Skin	Identify gross and microscopic features of <ul style="list-style-type: none"> • Squamous cell carcinoma • Basal cell carcinoma 	MCQ,OSCE
Pharmacology Practical			
Week	Topic	Practical	Assessment
Week 1	Gout	Write prescription for Gout	MCQ,OSCE
Week 2	Rheumatoid Arthritis	Write prescription for Rheumatoid Arthritis	MCQ,OSCE

Week 4	Drugs used to treat Dermatological Disorders	Write down prescription for scabies. Write down prescription for Psoriasis	MCQ,OSCE
Forensic Practical			
Week	Topic	Practical	Assessment
Week 1	Examination of wound and weapon	<ul style="list-style-type: none"> • Abrasion • Bruise • Laceration • Incised wound • Qisas and Diyat models/ • Dura prints of injuries 	MCQ,OSCE
Week 2	Examination of wound and weapon	<ul style="list-style-type: none"> • Stab wound • Fracture • Displacement • Qisas and Diyat models of injuries/ multimedia slides remaining 	MCQ,OSCE
Week 3	Examination of wound and weapon	Firearm injuries / Weapons Identification of bullets	MCQ,OSCE
Week 4	Writing a medico legal certificate	Medicolegal report writing in case of firearm Injuries	MCQ,OSCE

Learning Sites

Teaching and learning strategies:

The following teaching learning methods are used to promote better understanding:

- Interactive Lectures
- Hospital Clinic visits
- Small Group Discussion
- Skills session
- Self-Directed Study

Interactive lectures:

An interactive lecture is an easy way for instructors to intellectually engage and involve students as active participants in a lecture-based class of any size. Interactive lectures are classes in which the instructor breaks the lecture at least once per class to have students participate in an activity that lets them work directly with the material.

- The instructor might begin the interactive segment with an engagement trigger that captures and maintains student attention.

- Then the instructor incorporates an activity that allows students to apply what they have learned or give them a context for upcoming lecture material.
- As the instructor feels more comfortable using interactive techniques he or she might begin to call upon a blend of various interactive techniques all in one class period.

Hospital Clinic visits:

In small groups, students observe patients with signs and symptoms in hospital or clinical settings. This helps students to relate knowledge of basic and clinical sciences of the relevant module.

Small group discussion (SGD):

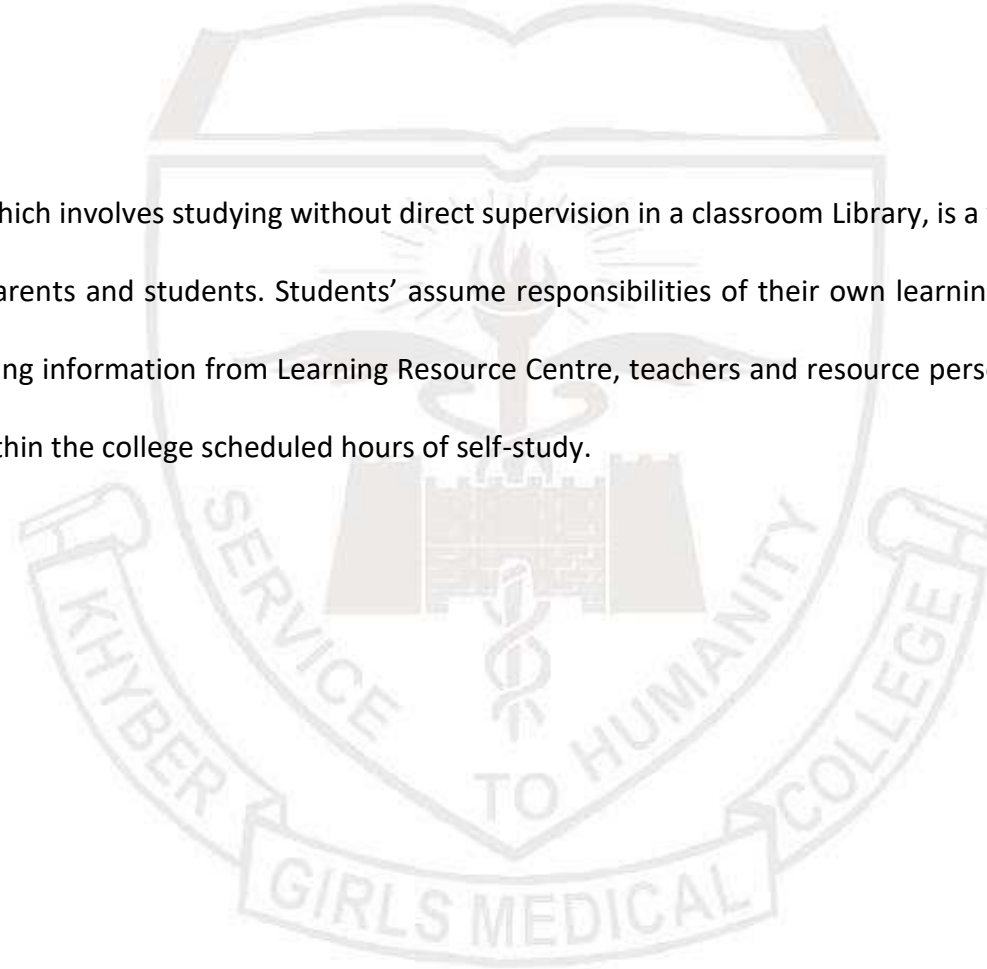
The shy and less articulate are more able to contribute. Students learn from each other. Everyone gets more practice at expressing their ideas. A two way discussion is almost always more creative than individual thoughts. Social skills are practiced in a 'safe' environment e.g. tolerance, cooperation. This format helps students to clarify concepts acquire skills or attitudes. Students exchange opinions and apply knowledge gained from lectures, tutorials and self-study. The facilitator role is to ask probing questions, summarize, or rephrase to help clarify concepts.

Skills Practical session:

Skills relevant to respective module are observed and practiced where applicable in skills laboratory or Laboratories of various departments.

Self-Directed learning (SDL):

Self-directed learning, which involves studying without direct supervision in a classroom Library, is a valuable way to learn and is quickly growing in popularity among parents and students. Students' assume responsibilities of their own learning through individual study, sharing and discussing with peers, seeking information from Learning Resource Centre, teachers and resource persons within and outside the college. Students can utilize the time within the college scheduled hours of self-study.



Time table:

The timetables for the module will be shared via Edmodo and the notice boards in advance.

Assessment tools:

Theoretical knowledge is tested by a written examination system constituted by multiple choice questions (MCQs). The assessment of practical knowledge involves oral, spot, or objective structured practical examinations (OSPE).

Multiple Choice Questions (MCQs):

- Multiple choice questions (MCQs) are a form of assessment for which students are asked to select the best choice from a list of answers.
- MCQ consists of a stem and a set of options. The stem is usually the first part of the assessment that presents the question as a problem to be solved; the question can be an incomplete statement which requires to be completed and can include a graph, a picture or any other relevant information. The options are the possible answers that the student can choose from, with the correct answer called the key and the incorrect answers called distractors.
- Correct answer carries one mark, and incorrect 'zero mark'. There is NO negative marking.
- Students mark their responses on specified computer-based sheet designed for the college.
- The block exam will comprise of 120 MCQs and will be compiled according to the shared blueprint.

Objective Structured Practical Examination (OSPE)

- The content may assess application of knowledge, or practical skills.
- Student will complete task in define time at one given station.
- All the students are assessed on the same content by the same examiner in the same allocated time.
- A structured examination will have observed, unobserved, interactive and rest stations.
- Observed and interactive stations will be assessed by internal or external examiners.
- Unobserved will be static stations in which students will have to answer the questions related to the given pictures, models or specimens the provided response sheet.
- Rest station is a station where there is no task given, and in this time student can organize their thoughts.
- The Block OSPE will be comprise of 20 examined station and 5 rest stations. The stations will be assigned according to the shred blueprint. There will be 8 stations for viva of core subjects like Pathology, Pharmacology, Forensic Medicine and Community Medicine (2 station for viva of each core subject) and 2 clinical station and rest of 10 out of 20 stations will be assigned according to shared blue prints.
-

Internal Evaluation:

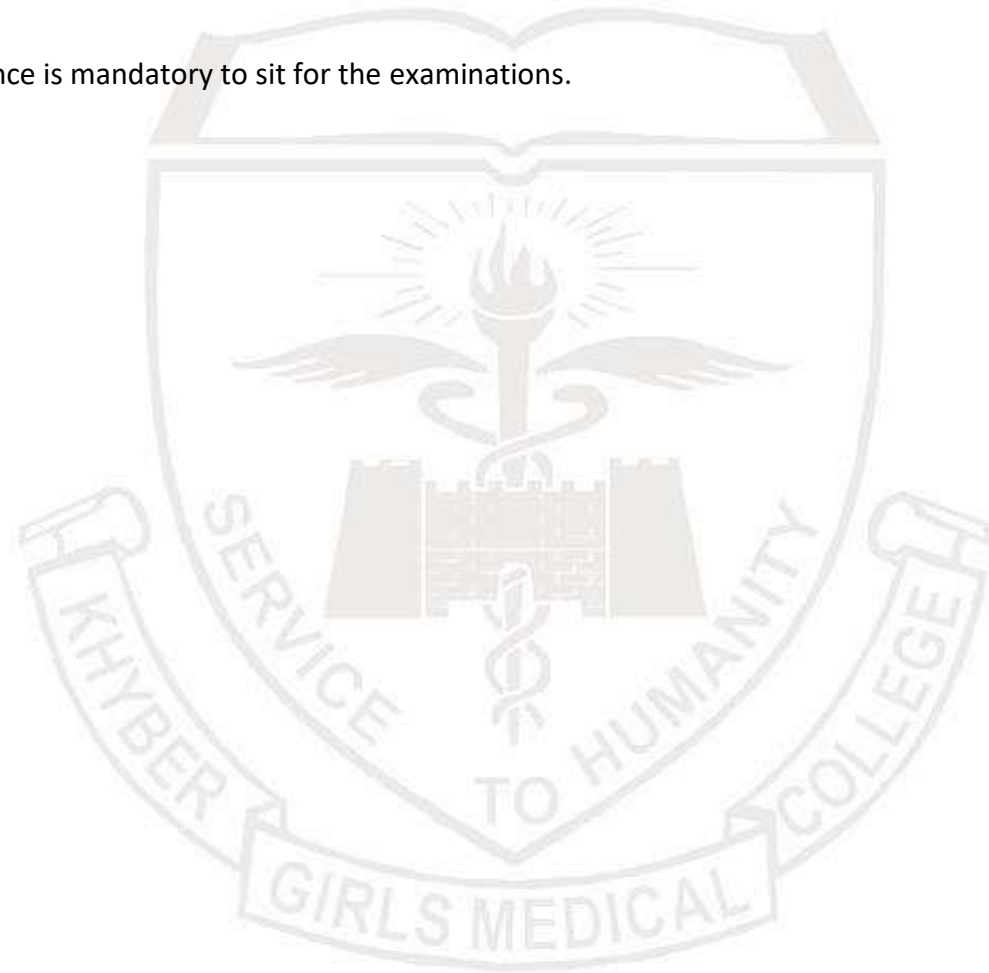
Internal evaluation is a process of quality review undertaken within an institution for its own ends. 10% marks of internal evaluation will be added to final marks. This 10% will be based on

Marks obtained	14 out of total 40 marks of internal assessment in block H Paper

Marks obtained	14 out of total 40 marks of internal assessment in Block H OSPE

Attendance Requirement:

More than 75% attendance is mandatory to sit for the examinations.



Learning Sites

- 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

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

Pathology

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

6. Muir's Textbook of Pathology

Textbook for Microbiology

1. Jawetz, Melnick&Adelberg's "Medical Microbiology"
2. Levinson's "Medical Microbiology & Immunology"
3. Sherris Medical Microbiology
4. Lippincott's Illustrated Reviews: Microbiology

Forensic Medicine

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

Community Medicine:

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

Ophthalmology

1. Parsons' Disease of the EYE
2. Short Kanski
3. Clinical Ophthalmology Shafi M Jatoi

Community Medicine

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

Medicine

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

Surgery

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

ENT

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

Paediatrics

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

