



Course Specification of Musculoskeletal system

Faculty : Medicine and health sciences
Department: Basic Sciences
Program : Bachelor of Medicine and Surgery

I. General information about the course instructor:							
Name	More than 5 teachers	Office Hours(3 Hours Weekly)					
Location & phone number		Sat	Sun	Mon	Tue	Wed	Thu
Email							

II. General information about the course							
1.	Course Title :	Musculoskeletal system					
2.	Course Code and Number :	BMD20					
3.	Credit Hours :	Credit Hours					Total
		Theoretical	Seminar/ Tutorial	Practical	Clinical	Training	
		5	-	2	-	-	7
4.	Level and Semester:	2nd year/ 2nd semester					
5.	Pre-requisites:	Introductory blocks of the first and the second year					
6.	Co-requisites :	None					
7.	Program in which the course is offered:	Bachelor of Medicine and Surgery					
8.	Teaching Language:	English					
9.	Instruction location:	University of Science and Technology, Sana'a					

III. Course Description

The overall goal of the Musculoskeletal Block is to provide the medical student with comprehensive knowledge about bones, joints muscles, tendons, ligaments, skin, breast and associated soft tissues with their common clinical disorders. This integrated module contains basic biomedical sciences of anatomy, biochemistry, microbiology, histology ,pathology, pharmacology, and physiology correlated with the clinical and practical disciplines of this system..

The structure of this system consists of bones, muscles and joints nourished by blood vessels and controlled by nerves. The disturbances of this system may lead to serious disability this is why the student should have a sound basic knowledge of the structure and function of this system to understand the disturbances and changes that may occur, so that he/her can be able to treat them and to prevent them. Lecture, practical sessions, problem solving session and seminars are various teaching strategies for this block.

IV. Course Aims:

- 1 . To provide the students with basic medical Knowledge about the components of the musculoskeletal system.
- 2- To acquaint the students with the pathological conditions altering normal structure, function, biochemistry, and physiology of the musculoskeletal system.
- 3- To learn the students the characteristics and pathophysiology of common diseases of skin and musculoskeletal systems.
- 4-To enable the students to acquire clinical skills necessary to evaluate a patient with injury or disease of the musculoskeletal system.
- 5-To enable the students to apply his/ her knowledge and skills to diagnose and manage of patients with musculoskeletal pathology.

V. Course Intended Learning Outcomes (CILOs) :

- 1) Describe the anatomical components of the musculoskeletal system and understand their functions, important relationships, and associated common clinical problems using common clinical imaging modalities.
 - 2) Identify the aetiology of common musculoskeletal problems and recognize the diagnostic features, complications, and principles of prevention and treatment of common disorders of bones, and joints.
 - 3) Correlate the clinical features of musculoskeletal diseases with the underlying pathological processes to reach diagnosis.
 - 4). Perform an accurate medical history and clinical examination of a patient with a musculoskeletal disorder to reach a diagnosis..
 - 5) Apply the principles in biomedical and physiology in the clinical context for diagnosis and treatment of musculoskeletal problems.
 - 6). Perform under supervision (or observe) some routine diagnostic and therapeutic procedures in the daily practice of orthopedics and emergency rooms
 - 7). Work effectively in a team through preparing collective assignments , presenting case studies and in the skill lab activities.
- Uses his various Information technology skills in accessing different learning resources.

VI. Course topics and sub-topics (theoretical and practical) with contact hours and alignment to CILOs

Topics/Units of Course Contents

First: Theoretical Aspects

No.	Course Topics/Units	Sub-topics	No. of lectures	Contact Hours
1	Anatomy	Bones of lower limb Superficial structures & Saphenous system Femoral triangle&its contents Anterior compartment of thigh Medial compartment of thigh, adductor canal, obturator vessels, and nerves Gluteal region&its contents. Posterior compartment of thigh Popliteal fossa&its content. Anterior compartment of leg & extensor retinaculum Lateral compartment of leg &peroneal retinacula Posterior compartment of leg & flexor retinacula Arches of foot & its congenital anomalies Segmental & cutaneous innervation Lymph drainage Surface anatomy of arteries Nerve injuries of lower limb Joints & their injuries	7	14
2	Physiology	Introduction to the nervous system Neuron, structure & functions, properties of nerve fibers Resting membrane potential of nerve &Nerve action potential Propagation of action potential& neuromuscular transmission Physiologic anatomy of skeletal muscle& General & molecular mechanisms of muscle contraction& Excitation contraction coupling Contraction & excitation of smooth muscle Autonomic nervous system, general organization & ganglia. Chemical neuro-transmission at autonomic Junctions Receptors on the effector organs. Responses of effector organs to sympathetic nerve impulses & Sympathetic tone. Responses of effector organs to parasympathetic nerve impulses and parasympathetic tone.	9	18

3	Pathology	Hereditary and metabolic bone diseases. Bone tumors Diseases of Skeletal Muscles: Pathology of the skin: Disorders of Melanocytes Premalignant & Malignant disorders of epidermis Pathology of Breast:	5	10
4	Microbiology	Concept, pathogenesis, lab diagnosis of: -Bacteria causing skin infections - Osteomyelitis -Arthritis (Septic arthritis and rheumatoid arthritis) -Leprosy and other Mycobacterial skin disease -Fungal infections of the skin: -Superficial and cutaneous mycosis Malasia furfur (Pityriasisversicolor) -Cutaneous dermatophytes of skin, hair and nails: -Mucocutaneous lesions caused by viruses: -Papilloma virus infection Pox virus causes Molluscumcontagiosum -Herpes simplex type 1 Cocksackie virus Human parvovirus (B19) Measles Rubella Varicella-Zoster virus Actinomyces Parasitic infections of muscle of the skin Leishmaniasis (Cutaneous &mucocutaneous) Trypanosomacruzi (Chaga's disease) Parasitic infections of muscle: Trichinellaspiralis infection Teaniasolium.	6	11
5	Pharmacology	Nonsteroidal anti-inflammatory drugs (NSAIDs) Antigout agents Skeletal muscle relaxants Local anesthetics	3	6

6-	Biochemistry	Chemical constituent of skeletal muscles Molecular events in muscle contraction Sources of energy. Synthesis of Heme & Myoglobin Metabolism of calcium & phosphorus Synovial fluid composition	2	4
7	Histology	Skeletal muscles & bone Joints & Cartilage Skin breast	2	4
8	Medicine	Osteoarthritis septic arthritis Rheumatoid arthritis Gout	2	4
9	Surgery (orthopedics)	Causes, types, healing, treatment (including first aid) and complications of <u>Common</u> Upper & Lower limb fractures. Cast advantages and disadvantages. Concept, clinical features, diagnosis, management of: Common Orthopedic infections (osteomyelitis)	2	4
Total			38	75=5CH

Second: Practical/Tutorial/Clinical Aspects			
No.	Practical/Tutorial/Clinical topics	No. of labs	Contact Hours
1	<u>Basic clinical skills</u> History taking of a patient with a neuromuscular problem Examination of a joint Examination of the back Bone imaging Joint imaging	5	10
2	Anatomy	8	16
3	Physiology	4	8
4	Pathology	8	14
5	Histology	2	4
6	Microbiology	4	8
Total		30	60=2 CH