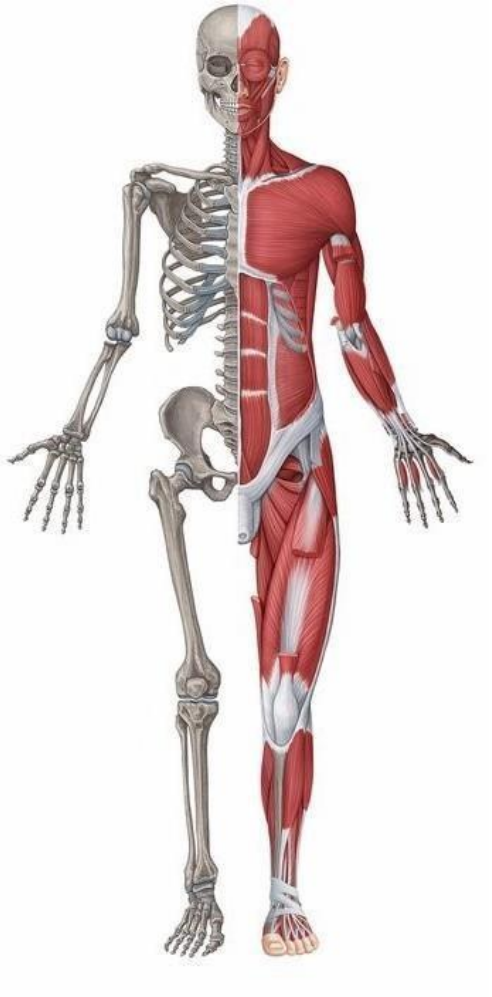
Skin and Locomotor System (111501303)

2025-2026

First semester
Coordinator: Dr. Ashraf Sadek



The Hashemite University

Deanship of Academic Development and International Outreach

كلية الطب البشري

الجامعة الهاشمية

عمادة التطوير الأكاديمي والتواصل الدولي

COURSE INFORMATION	
Course Name: Skin and Locomotor System Semester: First **Department:** Department of Anatomy, Physiology and Biochemistry **Faculty:** Faculty of Medicine	**Course Code:** 111501303
Sunday to Thursday **Day(s) and Time(s):** 9 am to 3,30 pm **Classroom:** Al-Harith auditorium	**Credit Hours:** 6 **Prerequisites**: None

COURSE DESCRIPTION

This integrated course aims to provide the medical student with basic sciences information aboutbones, joints muscles, tendons, ligaments, skin, and associated soft tissues related to clinical manifestationsof diseases of the musculoskeletal system and skin.

DELIVERY METHODS

The course will be delivered through a combination of active learning strategies. These will include:

- PowerPoint lectures and active classroom-based discussion
- Collaborative learning through small groups acting in an interdisciplinary context.
- Video lectures

Name	**Ashraf Sadek**
Academic Title:	**Assistant Professor**
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Email Address:	ashrafm@hu.edu.jo
Office Hours:	**Sunday** 10 am-1 pm **Tuesday** 10 am-1 pm *Please send an e-mail (ashrafm@hu.edu.jo) to meet at any other time.*

Other instructors:

Anatomy	
	Dr. Razan Sartawi Assistant Professor razany@hu.edu.jo Office 3016 Sunday 10 - 11:30 Wednesday 10 - 11:30
	Dr. Wala'a Alzboun Assistant Professor Wallag@hu.edu.jo Office 1032 Sunday 10-12 Tuesday 10-12
	Dr. Aseel Abbad aseel.abbad@hu.edu.j o Office 3018 Phone 5399 Sunday 10:00 - 12:00 Wednesday 10:00 - 12:00
	Dr. Mustafa Saad Yousuf MustafaS@hu.edu.jo Office 3019 Phone 5432 Sunday 11:30-12:30 Monday 11:30-12:30 Wednesday 11:30-12:30
Physiology	Dr Gehan el Wakeel gehan@hu.edu.jo Office;Faculty of dentistry 343 Sunday:10;30-!2;30 Tuesday:10;30-12:30
Pathology	Dr. Ali Al Khader ali.alkhader@hu.edu.jo Sunday 12-2 pm Tuesday 12-2 pm Thursday 12-2 pm Office1031

Dr D

Pharmacology	Dr. Sofian Al Shboul sofian@hu.edu.jo Office 3043 Sunday 10-12 Tuesday 10-12
Microbiology	Dr. Hafez Abedal Wali oqlah Al Momani Hafez@hu.edu.jo ffice3041 Phone 5380 Sunday 2-3 Tuesday 2-3 Thursday 2-3
Biochemistry	Dr. Nebras Yahya Melhem nebras@hu.edu.jo Office103 9 Sunday 12-1 Tuesday 12-1
Community Medicine	Dr. Eman ALKamil Emana_sa@hu.edu .jo Office3034 Sunday 12-1 Monday 12-1 Wednesday 12-1

REFERENCES AND LEARNING RESOURCES

Anatomy and Histology:

- **Clinical Anatomy for Medical Students. By R.S. Snell, Latest edition.**
- Moore Clinically Oriented Anatomy. Eighth edition.
- Basic Histology, by L. Carlos Junqueira. Latest edition
- Before we are born. By K.L. Moore and T.V.N. Persaud, Latest edition

BIOCHEMISTRY:

- Harper's Biochemistry. By Robert K. Murray and Co., Latest edition.
- Supplementary Departmental Handout.

PHYSIOLOGY:

- **Textbook of Medical Physiology, by Guyton and Hall- Review of Medical Physiology, by William F. Ganong.**

PATHOLOGY:

- Essential Pathology, by Emanuel Rubin.
- Basic Pathology, by Kumar, Cotran and Robbin.

MICROBIOLOGY:

- **Medical Microbiology. By John C Sherris.**

PHARMACOLOGY:

- Lippincott's Illustrated Reviews: Pharmacology.
- Basic and clinical pharmacology, Bertram and Katzung.

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STUDENT LEARNING OUTCOMES MATRIX

Program Learning Outcomes	Course Objectives	Course Student Learning Outcomes	Assessment Method
		Anatomy	
D1 **D5** **E2**	1,2-Obtain knowledge about the Histology of the skin	1. Enumerate the cells that are found in the epidermis and describe their main features and functions. 2. List the layers that form the epidermis and describe their main features and functions. 3. Explain the significance of the jigsaw-like epidermal-dermal junction. 4. Describe the parts of the dermis and the main differences between them. 5. Describe the hypodermis. 6. List the different receptors of the skin and describe their features. 7. Understand the features of the hair and its associated structures. 8. Describe the main features of the glands in the skins and identify the differences between them. 9. Describe the nail and its main parts and features. 10. Identify the differences between thick and thin skin.	
	3-Obtain knowledge about the anatomy of the skull	1. Describe the general features of the skull 2. Describe the features of Norma Frontalis (anterior view) of the skull 3. Describe the features of Norma Vertical (superior view) of the skull 4. Describe the features of Norma Lateralis (lateral view) of the skull 5. Describe the features of Norma Occipitalis (posterior view) of the skull 6. Describe the features of Norma Basalis (inferior view) of the skull 7. Describe the features of cranial cavity (interior) of the skull 8-Describe the internal features of the cranial cap 9-Outline important foramina of the skull	

	4-Obtain knowledge about the anatomy of the mandible and hyoid bone	1-Describe the features of the mandible 2-knowledge of the structures attached and related to the mandible 3-Describe the general features of the hyoid bone	
	5-Obtain knowledge about the anatomy of the face and scalp	1-Describe the extension, structure, muscles, blood and nerve supply, and lymph drainage of the face and the scalp 2-Describe the muscles of facial expression; motor and sensory nerve supply; blood supply and lymph drainage of the face	
	6. Obtain an understanding of the anatomy of the infratemporal fossa	1-Describe the muscles of mastication (attachment, nerve supply and action) 2-Describe the extension and content of temporal fossa 3-Describe the extension, connections and content of infratemporal fossa. 4-Illustrate the course, parts and branches of the maxillary artery 5-Describe the location, connections and content of pterygopalatine fossa	
	7. Acquire knowledge about the anatomy of the vertebral column	1. Describe the general features of the vertebral column 2-Describe the features of cervical vertebrae 3-Describe the four types of cervical fascia (investing, carotid, pretracheal & prevertebral)	
	8. Obtain a knowledge of the anatomy of prevertebral muscles	1-Describe and differentiate between the thoracic, lumber vertebrae and the sacrum 2-Illustrate the anterior group of prevertebral muscles 3-Illustrate the lateral group of prevertebral muscles 4-Illustrate the muscles of the back of the neck 5-Describe the cervical vertebra joints(atlantooccipital, atlantoaxial,boundaries and the content of sub-occipital	
	9-Obtain a knowledge of the anatomy of t h e posterior triangle and the anterior triangles of the neck	1-Describe the boundaries, and contents of the posterior triangle of the neck 2-Describe the anterior triangle, boundaries and contents of its sub-triangles	
	10. Obtain a knowledge of the anatomy of the abdominal wall muscles	1. Revise the anatomy of the anterior, lateral, and posterior abdominal wall muscles. 2. Discuss their functional relationship with the thoracic and pelvic diaphragms. 3. Discuss their roles in posture, ventilation, and voiding of abdominal, pelvic,	
	11. Obtain an understanding of the inguinal canal	1. Describe the anatomy of the inguinal canal in the male and female. 2. Explain the contents of the canal and how inguinal hernias develop, including the anatomy and clinical presentation of such	

		hernias.	
	12-Recognize the features of the bones of the shoulder girdle (Shoulder Girdle)	1. Define the shoulder girdle and describe its constituent bones and articulations. 2. Identify the clavicle, scapula, and proximal humerus and describe their articulations (sternoclavicular, acromioclavicular, glenohumeral). 3. Explain stabilizing features of the shoulder joint (capsule, ligaments, labrum. Discuss clinical conditions (shoulder dislocations and clavicular fractures).	
	13-Obtain knowledge about the anatomy of the shoulder and rotator cuff muscles (Shoulder muscles and rotator cuff)	1. List muscles attached to the scapula and describe their attachments, actions, innervation, and vascular supply. 2. Describe the rotator cuff muscles, their role in shoulder stability, and their clinical significance. 3. Relate muscle injury to functional deficits and physical examination tests (e.g., drop-arm test).	
	15-Recognize the anatomy of the arm and the elbow joint (Arm and elbow)	1. Identify the features of the humerus, radius and ulna. 2. Describe the anatomy of the elbow joint (articulating surfaces, capsule, ligaments). 3. Describe the muscles of the flexor and extensor compartments of the arm, their actions, innervation, and vascular supply. 4. Describe the cubital fossa, its boundaries, contents, and clinical applications (venipuncture, blood pressure measurement).	
	16. Obtain an understanding of the anatomy of the forearm (Forearm)	1. Describe the role of radius and ulna in pronation and supination. 2. Identify and describe the muscles of the anterior and posterior compartments, their actions, innervation, and vascular supply. 3. Relate forearm anatomy to clinical conditions (tennis elbow, golfer's elbow, compartment syndrome).	
	17. Understand the anatomy of the hand and	1. Identify the carpal bones, metacarpals, and phalanges, and describe the wrist and	

	the wrist joint (Hand and wrist)	finger joints. 2. Describe the intrinsic and extrinsic muscles of the hand, their actions, and innervation. 3. Explain finger movements, including opposition. 4. Define the carpal tunnel and anatomical snuffbox and explain their clinical significance. 5. Discuss clinical conditions: carpal tunnel syndrome, claw hand, scaphoid fracture.	
	18-Recognize the features of the bones of the lower limb and describe the major lower limb innervation and blood supply	1-Revise the distinguishing features of the: hip bone, femur, tibia, fibula, tarsal metatarsals and phalanges 2- Describe the lumbosacral plexus and the major lower-limb nerves (femoral, obturator, sciatic, etc.) 3- Outline the arterial supply and venous drainage of the lower limb.	
	19-Recognize the anatomy of the gluteal region and hip joint	1-Identify the main gluteal muscles, their attachments, actions and nerve supply, and relate them to posture and gait (Trendelenburg sign). 2-Outline the arterial supply and venous drainage of the hip and gluteal region 3-Describe the greater and lesser sciatic foramina and the structures passing through them. 4-Apply knowledge of the course of the sciatic nerve to locate the safe intramuscular injection site in the gluteal region. 5-Describe the components of the hip joint 6-List the ligaments associated with the hip joint and their attachments 7-Describe the muscles acting on the hip joint according to the type and movement they perform.	
	20- Recognize the anatomy of the thigh	1-List the muscles of the thigh 2-Classify the thigh muscles into anterior, medial and posterior compartments, and state their principal attachments, actions, blood supply and nerve supply 3-Describe the femoral sheath and femoral triangle and their contents and relate them to femoral hernia 3-Describe the adductor canal and adductor hiatus	
	21. Recognize the anatomy of the leg and	1-List the muscles of the leg 2-Describe the attachments of the leg muscles, their	

	Knee joint	actions, innervation and blood supply 3-Describe the popliteal fossa and its contents and relate this to popliteal pulse palpation, popliteal aneurysm and Baker's cyst 4-Describe the components of the knee joint 5-List the ligaments associated with the knee joint and their attachment 6-List the muscles acting on the knee joint according to the type and movement they perform	
	22- Recognize the anatomy of the foot and ankle joint	1-Describe the components and movements of the ankle joint 2-List the muscles acting on the ankle and the movements they perform 3-List the muscles acting on the toes 4-Describe the movements of toes 5-Describe the retinacula related to the foot and the structures associated with them 6-List the muscles in the four layers of the sole of the foot 7-Describe the arches of the foot	
	23- understand the development of limbs	1-Describe the stages of limb development 2-Explain how limb muscles develop and migrate to the limb buds, and how these muscles then become positioned with respect to dorsal and ventral surfaces of the limbs 3-Relate abnormal development to congenital limb anomalies	
		Physiology	
D1 **D5** **E2**	**1- Functions of the skin**	a) Protective function: -Innate and adaptive immune response -Identify the concept of the epidermal unit, Melanin formation, functional interaction between melanocytes and keratinocytes, endocrine and paracrine factors affecting melanocyte differentiation and melanin formation. b) Regulation of water loss: Understand transepidermal water loss and the role of aquaporins c) excretory function: recall types of sweat glands, mechanism of sweat secretion d) Neuroendocrine function: interpret Sensory function, endocrine function (touch and oxytocin, Cutaneous Hypothalamic-pituitary adrenal (HPA) Axis, vitamin D synthesis).	
	2- Skin Functions (cont.)	a) Role in body temperature regulation: differentiate between body core and skin temperature. Understand countercurrent heat exchange, basic physics of heat loss from the	

		skin surface, acclimatization of the sweating mechanism to heat.	
	3-Structure of skeletal Muscles	1-Describe Neuromuscular Junction and Neuromuscular transmission 2-Compare End plate potential and action potential 3-Define Motor Unit and nerve-muscle interaction. 4-Understand Excitation contraction coupling Molecular mechanism of skeletal muscle contraction	
	4-**Muscle relaxation, the role of ATP in muscle contraction and Relaxation.**	**Understand the Changes following skeletal muscle Contraction:** A-Electrical change: b-excitability changes c-Mechanical changes: Muscle twitch, summation of contractions, staircase phenomenon (treppe), isometric versus isotonic contraction	
	5-Changes following skeletal muscle contraction	Mechanical changes (cont.): compare concentricand eccentric isotonic contraction. Understand the length tension relationship and load velocity relationship. D-Metabolic changes: Identify energy sources and muscle metabolism during rest, contraction and recovery (oxygen debt). -Identify the causes of Muscle fatigue- Identify Types of Muscle fibres	
		Pharmacology	
D1 **D5** **E2**	1-**Drugs for Dermatological Disorders**	1. Describe pharmacologically relevant pathogenetic processes related to acne vulgaris and identify potential drug targets. 2. Understand the mechanism of action of retinoids, their therapeutic indications, up-to-date guidelines of their clinicaluse major adverse effects, and black box 3. warnings. 4. Identify the pharmacology of other frequently utilized medications used for acne including benzoyl peroxide, azelaic acid and salicylic acid. 5. Recognize classes of topical 6. and 7. systemic antibiotics are used for the treatment of acne and dermatological infections. 8. Describe the mechanisms of action and therapeutic indications for agents used to treat ectoparasitic infections. 9. Understand the mechanisms of action and adverse effects of hydroquinone and	

		methoxsalen and their role in the management of pigmentation disorders. 10. Describe the pharmacology of drugs utilized for the treatment of psoriasis including retinoids, keratinolytic 11. agents, corticosteroids, and biological therapy in terms of mechanisms of action, therapeutic indications and major adverse effects. **12.** List the mechanisms of action and clinical uses of trichogenic Agents.	
	2-3: Drugs for Rheumatoid Arthritis and Osteoarthritis	Understand basic inflammatory processes associated with the development of rheumatoid arthritis and identify relevant molecular drug targets. ● Describe the biosynthesis of prostaglandins, examples of their therapeutic uses and understand the cyclooxygenase pathway and the differences between cyclooxygenase 1 and cyclooxygenase 2. ● Recognize the mechanisms of action of the most frequently prescribed non-steroidal anti- inflammatory drugs, their clinical indications for rheumatoid arthritis, and the main adverse effects relevant to their selectivity for cyclooxygenase 1 or 2. ● Understand the mechanism of action of aspirin, its anti- inflammatory and non-anti- inflammatory uses, major adverse effects and role in the treatment of rheumatoid arthritis and other disease. List Traditional Disease- Modifying Antirheumatic Drugs ● DMARDs), understand their mechanisms of action and therapeutic indications with a focus on methotrexate List Biologic Disease- Modifying Antirheumatic Drugs B-DMARDs understand Their mechanisms of action and major clinical indications.	
	4- Drugs for Gout	● Revise the pathophysiology of gout and relevant biochemistry of uric acid. ● Describe the clinical guidelines for the treatment of an acute gouty episode, the role of non-steroidal anti- inflammatory drugs and the pharmacology of colchicine -Understand the role of xanthine oxidase inhibitors and uricosuric agents in the chronic treatment of gout. ● Identify the mechanisms of action, therapeutic uses, and adverse effects of allopurinol, febuxostat, and probenecid. ● Identify drug-drug interactions associated	

		with the use of probenecid.	
	5-6 Neuromuscular Junction Pharmacology and Skeletal Muscle Relaxants	● Revise the anatomy and pharmacology of the neuromuscular junction including major neurotransmitter pathways and receptors. ● Differentiate between agonist (depolarizing) and antagonist (non-depolarizing) neuromuscular blocking agents in terms of mechanism of action, therapeutic indications and most common adverse effects. ● Recognize the role of dantrolene as an antidote for the management of malignant hyperthermia. ● Understand the pharmacological component of Rapid Sequence Intubation. ● Describe pharmacologic lly relevant pathogenetic process implicated in myasthenia gravis ● Describe the pharmacology of cholinesterases and differentiate between reversible and irreversible indirect-acting cholinergic agonists in terms of mechanism of action, therapeutic uses and major Adverse effects. ● Describe toxicology-relevant implications of irreversible cholinesterase inhibitors (mainly organophosphates) from a clinical viewpoint. List antispasmodic and antispastic skeletal muscle relaxants and identify their mechanisms of action, therapeutic indications and adverse effects.	
		Microbiology	
D1 **D5** **E2**	1-**Anaerobesand clostridiu m perfrengesand Gas gangrene Trichenell a Spiralis**	● Describe the morphological, Bacteroides and trichinella features, pathogenesis and virulent factors, laboratory diagnosis, treatment, and prevention of clostridium perfrengens which is the main cause of gas gangrene. ● Describe the role of cl. Perfringens and Bacteroides ingas gangrene and the role of Trichinella in muscle infection. Explain their laboratory diagnosis, pathogenesis, and treatment. ● Describe the morphological features, pathogenesis and virulent factors, laboratory diagnosis treatment, and prevention of clostrium perfrengens ● Describe the role of aerobes in the formation of deep wound infection and abscess. ● Describe the role of Trichenellain muscle infection and explaintheir laboratory diagnosis, pathogenesis, and treatment. Describe the role of bacteria inthe pathogenesis of osteoarthritis, arthritis, specimen collection	

		Identification and treatment.	
	2-Bacterial infections of the skin.	● Pathogenesis of skin commensals and pathogens ● Describe the antibioticsensitivity of each organism (Diphtheroids ,Staphylococci, Streptococci, Propionobacterium acnes , Mycobacteria) Explain types, pathogens of would infection methods of specimen collection for proper diagnosis of types Bacteria andlaboratory diagnosis	
	3-Viral infections of the skin.	Explain morphology and pathogenesis as well as diagnostic procedures of viruses infecting skin.	
	4-Viral infections of the skin.	Describe the Herpe's andchildhood exanthens.	
	5-Parasitic infections of the skin.	Discuss the parasites that infest the skin (Scabes Leishmania and Onchocerca). Briefly describe the life cycle, treatment and prevention of each parasiteDescribe parasites that infest theskin, their life cycle, treatment and prevention. (Scabes, Leishmania, Oncocercafleas, loaloa, and cutaneous larvamigrans)	
	6-Fungal infections of the skin	-Describe the fungi that infect the skin and subcutaneous tissue, their identification and treatment (Dermatophytes , Candida, and Mycetoma agents) -Describe the fungi that infect the skin, their clinical classification, their identification and treatment (cutaneous, subcutaneous and opportunistic)	
		Community medicine	
D1 D5 E2	**1-Epidemiology and burden of MSS**	1-Describe the Global Burden of MSS Disease, incidence and Prevalence. -Impact of MSS Diseases. - risk factors for MSS. 2--Classification, Risk factorsand prevention: - Low back pain, types, causes, impact. -Osteoarthritis, -Congenital hip dislocation, -Prevention of musculoskeletal Disorders.	
	2. Epidemiology and Management of Common Skin Diseases	1- Describe the pattern of Skin Diseases at the community level. 2- Enumerate Examples of bacterial and viral, fungal and parasitic Infections. - List risk factors and Prevent⌋io⌋n and control of Common Skin infections	
		Biochemistry	

D1 **D5** **E2**	**1-Biochemistry of Muscles, Bones and connective tissue**	Understand the role of alkaline phosphatase, calcium, phosphate, and vitamin D in bone formation and remodeling.	
	2-Metabolic disorders	Clinical biochemistry of muscle and bone	
	3-**Bone markers**	Discuss the markers for bone formation and resorption and their clinical use in diagnosis.	
		Pathology	
D1 **D5** **E2**	**1-Soft tissue tumor**	1-Identify the Major Categories of Soft Tissue Tumors 2-Describe the Types, & Pathological Features Of Lipoma & Liposarcoma 3-Describe Major Fibrous Tumours including Nodular Fasciitis, Myositis Ossificans, Superficial & Deep Fibromatoses. 4-Describe the Pathogenesis, Types, & Pathological Features Of: Major tumors of uncertain differentiation Leiomyoma & Leiomyosarcoma	
	2-Diseases of skin	1-Define the dermatologic macroscopic & microscopic Terms. 2-Describe the Etiology, Pathogenesis, Gross, Microscopic & Clinical Features of the: Acute inflammatory dermatoses: Urticaria, Acute Eczematous Dermatitis, Contact dermatitis, &Erythema Multiforme. Chronic inflammatory dermatoses: Psoriasis, Lichen Planus, & Lichen Simplex Chronicus	
	3,4-Diseases of skin	1- Describe the Etiology, Pathogenesis, Gross, Microscopic & Clinical Features Of The Infectious Dermatoses: Bacterial, Fungal Infection, & viral infections [Verrucae (Warts)] 2- Describe the Etiology, Pathogenesis, Gross, Microscopic (including the direct immunofluorescence findings) features of the Blistering (Bullous) skin disorders: Pemphigus (Vulgaris & Foliaceus), Bullous Pemphigoid, & Dermatitis Herpetiformis. 3- Describe the Pathogenesis, Gross, & Microscopic Features Of: Seborrheic Keratosis (Basal cell papilloma) Sebaceous Adenoma Actinic Keratosis Squamous Cell Carcinoma Basal Cell Carcinoma Dysplastic Nevus Melanocytic Nevi	

		Melanoma.	
	5- Non-neoplastic bone conditions and joint diseases	1-Describe the Etiology, Pathogenesis, Pathologic & Clinical features, Complications, & Diagnosis of: Osteogenesis Imperfecta, Osteopetrosis, acute, Chronic, & Tuberculous osteomyelitis, and Paget Disease (Osteitis Deformans), and osteonecrosis.	
	6. Non-neoplastic bone conditions and joint diseases	1-Describe the Types, Pathogenesis, Pathologic & Clinical Features of 2-Osteoarthritis (OA) &Compare Between the Morphologic Features of OA & Rheumatoid Arthritis. Describe the Types, Pathogenesis, Pathological features & Clinical Stages of gout and pseudogout	
	7- Bone tumors and tumors-like lesions	1-Describe the Etiology, Pathogenesis, Gross Microscopic & Radiological Features, Diagnosis & Routes of spread of: (1) Osteosarcoma, (2) Chondrosarcoma, (3) Ewing's sarcoma, & (4) Giant-Cell Tumor (GCT) of Bone (osteoclastoma). (1) Osteomas, Osteoid Osteomas, & Osteoblastomas Osteochondroma, single & multiple chondromas (Ollier disease & Maffucci syndrome)	
	8. Muscle diseases	Describe the Pathogenesis, Pathologic & Clinical Features of: (1) X-Linked muscular dystrophy (Duchenne & Becker Muscular Dystrophy) (2) Some other inherited diseases of muscle (3) Inflammatory myopathies (4) Toxic myopathies (5) Myasthenia Gravis (6) Lambert-Eaton Myasthenic Syndrome	

Students learning outcomes of the practical sections

1	**Anatomy Lab 1**	1- Enumerate the cells that are found in the epidermis anddescribe their main features and functions. 2- List the layers that form the epidermis and describe theirmain features and functions. 3- Explain the significance of the jigsaw-like epidermal-dermal junction. 4- Describe the parts of the dermis and the main differencesbetween them. 5- Describe the hypodermis. 6- List the different receptors of the skin and describe theirfeatures. 7- Understand the features of the hair and its associatedstructures. 8- Describe the main features of the glands in the skins and9-identify the differences between them. 10- Describe the nail and its main parts and features. 11- Identify the differences between thick and thin skin.	MCQ exams
2	**Anatomy Lab 2** The Bones of Head& Neck	1. Name the bones of the cranium and facial skeleton 2. Understand the external features of the skull (Norma frontalis,Norma verticalis, Norma lateralis, Norma occipitalis, Norma basalis) 3. Study the features of the interior of the skull 4. Study the foramen, fissures of skull & the mainstructures passing through 5. Describe the features of the mandible 6. Describe the features of cervical vertebrae	MCQ exams
3	**Anatomy Lab 3** The Scalp Face and the Neck	1. Study the structure, layers, muscles, blood supply,nerves & lymph drainage of the scalp 2. Study the muscles, blood vessels, motor and sensory nerve supply, & lymph drainage of the face 3. Understand the cervical deep fascia (types & extension),and the superficial nerves & veins of the neck 4. Describe the attachment, nerve supply, and action of sternomastoid muscle posterior triangle and its subdivisions 2. Study the boundaries of the anterior triangle 3. Describe the boundaries & contents of subdivisions of anterior triangle	MCQ exams

		4. describe the anterior & lateral pre-vertebral muscles	
4	**Anatomy Lab 4** Bones and joints of the upper	1. Identify the different parts of the bones of the upper and lower limbs. 2.Identify the components of the joints of the upper and lower limbs	MCQ exams
5	**Anatomy Lab 5** Muscles of the upper limb	1. Identify the muscles of the shoulder, arm, forearm, and hand in the upper limb	MCQ exams
6	**Anatomy Lab 6** Muscles of the lower limb	1. Identify the muscles of the gluteal region and the anterior, medial, and posterior compartments of the thigh. 2. Identify the muscles in the anterior, lateral, and posterior compartments of the leg. 3. Identify the muscles of the foot	MCQ exams

1 &2	**Pathology Lab 1 &2** After reviewing and discussing the colored photographs of the: (1) gross specimens and of the (2) histopathological sections are given in lectures as a power point presentations	★ The student should be able to identify, describe, and diagnose the common and important pathological lesions of bones, joints, soft tissues, muscle, and skin disorders given in the module.	

	during the practical hours.		

1,2	**Biochemistry lab**	1-Demonstrate proficiency in laboratory techniques for measuring serum levels of vitamin D and calcium, including sample preparation and use of appropriate assays. 2-Analyze and interpret laboratory results, correlating vitamin Dand calcium levels with musculoskeletal health and disease states. 3-Discuss the implications of vitamin D and calcium deficiency on musculoskeletal disorders and overall health 4-Understand how to correct abnormalities in vitamin D and calcium levels using oral and injectable formulations	

ACADEMIC SUPPORT

It is The Hashemite University policy to provide educational opportunities that ensure fair, appropriate and reasonable accommodation to students who have disabilities that may affect their ability to participate in course activities or meet course requirements. Students with disabilities are encouraged to contact their instructor to ensure that their individual needs are met. The University through its Special Need section will exert all efforts to accommodate for individual needs.

Special Needs Section: Student Services and Care Unit
Tel: 053903333ext. 4132 / 4583 / 5023
Location: Deanship of Students Affairs
Email:
stydent@hu.edu.jo

COURSE REGULATIONS

Participation

Class participation and attendance are important elements of every student's learning experience at Hashemite University, and the student is expected to attend all classes. A student should not miss more than 15% of the classes during a semester. *Those exceeding this limit of 15% will receive a failing grade regardless of their performance*. It is a student's responsibility to monitor the frequency of their own absences. **Attendance record begins on the first day of class irrespective of the period allotted to drop/add and late registration. It is a student's responsibility to sign in; failure to do so will result in a non-attendance being recorded.**

In exceptional cases, the student, with the instructor's prior permission, could be exempted from attending a class provided that the number of such occasions does not exceed the limit allowed by the University. The instructor will determine the acceptability of an absence for being absent. A student who misses more than 25% of classes and has a valid excuse for being absent will be allowed to withdraw from the course.

Plagiarism

Plagiarism is considered a serious academic offence and can result in your work losing marks or being failed. HU expects its students to adopt and abide by the highest standards of conduct in their interaction with their professors, peers, and the wider University community. As such, a student is expected not to engage in behaviours that compromise his/her own integrity as well as that of the Hashemite University.

Plagiarism includes the following examples and it applies to all student assignments or submitted work:

- **Use of the work, ideas, images or words of someone else without his/her permission or reference to them.**
- **Use of someone else's wording, name, phrase, sentence, paragraph or essay without using quotation marks.**
- **Misrepresentation of the sources that were used.**

The instructor has the right to fail the coursework or deduct marks where plagiarism is detected

Late or Missed Assignments

In all cases of assessment, students who fail to attend an exam, class project or deliver a presentation on the scheduled date without prior permission, and/or are unable to provide a medical note, will automatically receive a fail grade for this part of the assessment.

Submitting a term paper on time is a key part of the assessment process. Students who fail to submit their work by the deadline specified will automatically receive a 10% penalty. Assignments handed in more than 24 hours late will receive a further 10% penalty. Each subsequent 24 hours will result in a further 10% penalty.

- In cases where a student misses an assessment on account of a medical reason or with prior permission; in line with University regulations an incomplete grade for the specific assessment will be awarded and an alternative assessment or extension can be arranged.

Student Complaints Policy

Students at The Hashemite University have the right to pursue complaints related to faculty, staff, and other students. The nature of the complaints may be either academic or non-academic. For more information about the policy and processes related to this policy, you may refer to the students' handbook.

COURSE ASSESSMENT

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Grading Policy:

Grades can be based on the following:

- First in-course exam (Theory) = 40%.
- Second in-course exam (Practical) = 20%.
-
- Final end-course exam (Theory) = 40%.
- Total Points 100

- All exams are in integrated form.

Dates of the exams: TBD

Grades are not negotiable and are awarded according to the following criteria*:

Letter Grade	Description	Grade Points
A+	Excellent	4.00
A		3.75
A-		3.50
B+	Very Good	3.25
B		3.00
B-		2.75
C+	Good	2.50
C		2.25
C-		2.00
D+	Pass	1.75
D	Pass	1.50
F	Fail	0.00
I	Incomplete	-

Weekly Schedule

		9-9:50	10-10:50	11:00-11:50	12:30-1:20	1:30-2:20	2:30-3:20
Week 1	Group						
Sunday 5/10/2025	A	Anat Skin 1	Pharma 1	Micro 1			
	B	Micro 1	Anat Skin 1	Pharma 1			
Monday 6/10/2025	A	Anat Skin 2	Anat axial 1 .	Phys 1			
	B	Anat axial 1	Phys 1	Anat Skin 2			
Tuesday 7/10/2025	A	Anat axial 2	Micro 2				
	B	Micro 2	Anat axial 2	Anat Lab Skin B1 & B2	Anat Lab Skin B3 & B4		
Wednesday 8/10/2025	A	Phys 2	Pharma2	Anat axial 3	Anat Lab Skin A1 & A2	Anat Lab Skin A3 & A4	
	B	Anat axial 3	Phys 2	Pharma 2			
Thursday 9/10/2025 Recorded (conference day)	A	Bio 1	Path 1	Anat axial 4			
	B						

Week 2		9-9:50	10-10:50	11- 11: 50	12:30-1:20	1:30-2:20	2:30-3:20
Sunday 12/10/2025	A	Micro 3	Anat axial 5	Pharma 3	Clinical Skills 1	Clinical Skills 1	
	B	Pharma 3	Micro 3	Anat axial 5	Anat Lab 1 B3 & B4	Anat Lab 1 B1 & B2	
Monday 13/10/2025	A	Phys 3	Anat axial 6	Anat Lab 1 A3 & A4	Anat Lab 1 A1 & A2		
	B	Anat axial 6	Phys 3				
Tuesday 14/10/2025	A	Path 2	Anat axial 7	Micro 4			
	B	Micro 4	Path 2	Anat axial 7	Clinical Skills 1	Clinical Skills 1	
Wednesday 15/10/2025	A	Anat axial 8	Phys 4	Bio 2	Path lab 1		
	B	Phys 4	Bio 2	Anat axial 8			
Thursday 16/10/2025	A	Anat App 1	Anat axial 9	Anat Lab 2 A1 & A2	Anat Lab 2 A3 & A4		
	B	Anat axial 9	Anat App 1	Path lab 1			

Week 3		9-9:50	10-10:50	11-11:50	12:30-1:20	1:30-2:20	2:30-3:20
	Group						
Sunday 19/10/2025	A	CM1	Path 3	Anat App 2	Clinical Skills 2	Clinical Skills 2	
	B	Path 3	CM1	Anat Lab 2 B1& B2	Anat App 2	Anat Lab 2 B3& B4	
Monday 20/10/2025	A	Anat App 3	Phys 5	Path 4			
	B	Phys 5	Path 4	Anat App 3			
Tuesday 21/10/2025	A	Micro 5	Anat App 4	Path 5	Anat Lab 3 A3& A24	Anat Lab 3 A1& A2	
	B	Path 5	Micro 5	Anat App 4	Clinical Skills 2	Clinical Skills 2	
Wednesday 22/10/2025	A	Anat App 5	Pharma 4		CM 2		
	B	Pharma 4	Anat App 5	CM 2	Anat Lab3 B3& B4	Anat Lab3 B1& B2	
Thursday 23/10/2025	A	Micro 6	Path 6	Anat App 6	Bio Lab 2		
	B	Anat App 6	Micro 6	Path 6		Bio Lab 2	

Week 4		9-9:50	10-10:50	11:00-11:50	12:30-1:20	1:30-2:20	2:30-3:20
Sunday 26/10/2025	A	Pharma 5	Path 7	Anat App 7	Path lab2		
	B	Anat App 7	Pharma 5	Path 7	Clinical Skills 3	Clinical Skills 3	
Monday 27/10/2025	A	Micro 7	Anat App 8	Micro 7	Anat Lab 4 A1& A2	Anat Lab 4 A3& A4	
	B	Anat App 8	Micro 7	Path lab2			
Tuesday 28/10/2025 The whole batch	A	Anat app 9	Pharma 6	Dermatology	Clinical Skills 3	Clinical Skills 3	
	B	Anat app 9	Pharma 6	Dermatology	Anat Lab 4 B1 & B2	Anat Lab 4 B3 & B4	
Wednesday 29/10/2025	A	Anat App 10	Path 8	BIO 3	Anat Lab 5 A3& A4	Anat Lab 5 A1& A2	
	B	Path 8	BIO3	Anat App 10			
Thursday 30/10/2025 The whole batch	A	Clinical Orthopedic	Clinical Radiology	Anat App 11	Anat 12 app		
	B	Clinical Orthopedic	Clinical Radiology	Anat App 11	Anat 12 app	Anat Lab 5 B3& B4	Anat Lab 5 B1& B2

Week 5		9-9:50	10-10:50	11- 11: 50	12:30-1:20	1:30-2:20	2:30-3:20
Sunday 2/11/2025	A	Anat App 13					
	B		Anat App 13				

The midterm exam: Tuesday 4th November 2025

practical, and final exam dates: Monday 10 November 2025

Summary of The module lectures and practical sessions:

(6 Credit Hours 58 Lectures+9 labs)

A-Topics & Lectures:

Topic	Number of Lectures	Anatomy	Physiology	Pharmacology	Biochemistry	Pathology	CM	Microbiology	Clinical Sessions
the skin	1 4	2	2	1	-	3	-	5	1
Bone and muscles	4 4	22	3	5	3	5	2	2	2
Total: 58 Lectures		24	5	6	3	8	2	7	3

B-Practical:

9 Labs: 6 Anatomy + 1 Biochemistry +2 Pathology

Code of Practice on Assessment for Musculo-skeletal & Skin Module (111501303) 2025 -2026

I-Formative Assessment
II-Summative Assessment
III-Students' feedback

I- Formative Assessment:

Online Quizzes on Microsoft Teams on topics included in the modules.

II- Summative Assessment:

a-Regular exams:

It follows the regulations approved by the faculty of medicine, the Hashemite University. The students will be assessed at the end of the module by three exams: Midterm (first exam), Practical (second exam), and Final exam. The question will assess different cognitive domains (Knowledge, comprehension, application). The questions will be in the form of MCQs and will be distributed on different subjects as described in the following table:

Subject	Total Number of Lectures	Number of Lectures included in the midterm exam: 35 Lectures	Number of Questions / Midterm Exam	Number of Questions /Final Exam			Number of Labs	Number of Questions /Practical Exam
				80% of the questions on the topics not included in the midterm 48 Questions	20% on midterm content 12 Questions	Total questions for the final=50 Questions		
Anatomy	24	16	**27**	17	4	**21**	**6**	**12**
Physiology	5	3	**5**	4	1	**5**	**0**	**0**
Pharmacology	6	4	**7**	4	2	**6**	**0**	**0**
Pathology	8	5	**9**	6	2	**8**	**2**	**4**
Biochemistry	3	2	**3**	2	1	**3**	**1**	**4**
Community	2	0	**0**	4	0	**4**		
Microbiology	7	5	**9**	5	2	**7**	**-**	
Clinical sessions	3	0	**0**	6	0	**6**		
Total	**58**	**35**	**60**	**60**			**4**	**20**

b-Makeup exams:

Absent students with accepted excuses will have make-up exams in the form of essay questions with the same grade distribution/subject as described above for the regular exams.

c-Summer exams:

Students may have a resit exam if they don't pass the regular exams at the end of the module or an exam to raise their GPA. The exams will be in the form of MCQs and will be distributed on different subjects as described in the following table **for each exam**:

Subject	Number Of Lectures	Number of Questions on Theoretical Subjects	Number of Questions In Practical Exam
Anatomy	24	25	10
Physiology	5	6	-
Pharmacology	6	7	-
Pathology	8	9	4
Biochemistry	3	4	2
Community	2	2	-
Clinical sessions	3	3	-
Microbiology	7	8	-
Total	58	64	16

III- Students' feedback:

Two surveys will be shared with the students: one on teaching process satisfaction and the second on exam question evaluations.