

1	Course title	Anatomy and histology for pharmacy students (practical)
2	Course number	0532202
3	Credit hours (theory)	1
	Contact hours (theory)	2
4	Prerequisites/co-requisites	Anatomy and histology for pharmacy students (theory) 0532201
5	Program title	-
6	Program code	-
7	Awarding institution	The University of Jordan
8	School	Faculty of Medicine
9	Department	Department of Anatomy and Histology
10	Level of course	Second year
11	Year of study and semester (s)	First and summer 2022\2023
12	Final Qualification	Bachelor
13	Other department (s) involved in teaching the course	-
14	Language of Instruction	English
15	Date of production/revision	9/9/2022

**16. Course Coordinator:**

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**17. Other instructors:**

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**18. Course Description:**

This course covers introduction to anatomy and histology

**19. Course aims and outcomes:****A- By the end of this course**

- 1- To acquire an appropriate background knowledge about the normal structure and function of the body and of each of its major systems
- 2- To acquire an appropriate background about and understand different types of tissues of each body system
- 3- To Identify and examine the normal anatomy of the body and of each of its major organ systems grossly.
- 4- To correlate anatomical facts with their clinical applications

**B- Intended Learning Outcomes (ILOs):** Upon successful completion of this course students will be able to

**A. Knowledge and Understanding: Student is expected to:**

- 1- Describe the normal anatomy of various regions of the human body (different tissues, organs and systems)
- 2- Describe course, relations and branches of main blood vessels and nerves of the body
- 3- Describe the surface landmarks of the underlying bones, muscles and tendons of the body
- 4- Outline major clinical applications of anatomical facts

**B. Intellectual, Analytical and Cognitive Skills: Student is expected to:**

- 1- Correlate the normal anatomical structures with their function
- 2- Correlate anatomical facts with the manifestation of various diseases and nerve injuries

**C. Subject- Specific Skills: Students is expected to:**

- 1- Identify the important features of the bones of the body
- 2- Identify the origin, insertion and nerve supply of muscles of the body
- 3- Identify the surface anatomy of various arteries and nerves
- 4- Identify the gross morphology of different body organs
- 5- Identify the arrangement of various body organs and internal structures in their normal places

**D. Transferable Key Skills: Students is expected to:**

- 1- Maintain honesty and integrity in all interactions with teachers, colleagues, and others with whom pharmacists must interact in their professional lives
- 2- Recognize the scope and limits of their role as students as well as the necessity to seek and apply collaboration with other workers



**20. Topic Outline and Schedule:**

Week	Lecture	ILOs
1	- Introduction - Cell	<ul style="list-style-type: none"> <li>- define anatomy with its subdivision</li> <li>- define anatomical position, anatomical terms, anatomical planes, and directional terms</li> <li>- define the levels of structural organization that make up the human body (chemical, cellular, tissue, organ, system, and organismic)</li> <li>- define and list a cells" generalized part</li> <li>- define the structure and functions of the plasma membrane, cytoplasm, nucleus ribosomes, endoplasmic reticulum, golgicomplex, mitochondria, lysosomes, centrioles and cytoskeleton</li> </ul>
2	- Epithelium - Connective tissue proper	<ul style="list-style-type: none"> <li>- define a tissue</li> <li>- classify the tissues of the body and define each type</li> <li>- identify the distinguishing characteristic of the epithelial tissue</li> <li>- list the structure, location and function of the types of epithelium</li> <li>- define a gland and distinguish between exocrine and endocrine glands</li> <li>- identify and distinguish characteristics of connective tissue</li> <li>- discuss the ground substance, fibers, and cells that constitute connective tissue</li> <li>- list the structure, location &amp; function of types of connective tissue</li> </ul>
3	- Bone tissue - Axial skeleton	<ul style="list-style-type: none"> <li>- list the structure, function and location of three types of cartilage</li> <li>- list and explain the gross features of a long bone</li> <li>- describe the histological features of compact &amp; spongy bone tissue</li> <li>- define ossification</li> <li>- define the types of bone in the skeleton</li> <li>- list and identify the components of the axial skeleton</li> <li>- describe the various markings on the surface of bones and relate the structure of the marking to its function</li> </ul>
4	- Appendicular skeleton - Muscle tissue	<ul style="list-style-type: none"> <li>- list and identify the components of the axial skeleton appendicular</li> <li>define an articulation and identify the factors that determine the degree of movement</li> <li>- list the characteristics and functions of muscle tissue</li> <li>- compare the location, microscopic appearance, nervous control, and functions of the three kinds of muscle tissue identify the histological characteristics of skeletal muscle tissue, cardiac muscle, and smooth muscle</li> </ul>

5	<ul style="list-style-type: none"> <li>- Muscular system 1</li> <li>- Muscular system 2</li> </ul>	<ul style="list-style-type: none"> <li>- discuss most body movements as activities of groups of muscles</li> <li>- explain the roles of the prime mover, antagonist, and synergist</li> <li>- define the criteria employed in naming skeletal muscles</li> <li>- identify the principal skeletal muscles in different regions of the body by name, origin insertion, action , and innervations</li> <li>- compare the common sites of intramuscular injection</li> </ul>
6	<ul style="list-style-type: none"> <li>- Muscular system 3</li> <li>- Nerve tissue</li> </ul>	<ul style="list-style-type: none"> <li>- classify neurons by shape and function</li> <li>- define the histological characteristics and functions of neuroglia and neurons</li> </ul>
7	<ul style="list-style-type: none"> <li>- Nervous system 1</li> <li>- Nervous system 2</li> </ul>	<ul style="list-style-type: none"> <li>- describe the gross anatomical features of the spinal cord</li> <li>- explain the function of the spinal cord as a conduction pathway and a reflex center.</li> <li>- list the location, origin, termination, and function of the principal ascending and descending tracts of spinal cord</li> <li>- identify the principal parts of the brain</li> <li>- identify the structure, features and function of each part</li> <li>- describe the location of cranial meninges</li> <li>- identify the cranial nerves, by name, number, type, location, and function</li> </ul>
8	<ul style="list-style-type: none"> <li>- Nervous system 3</li> <li>- Nervous system 4</li> </ul>	<ul style="list-style-type: none"> <li>- describe blood supply to the brain and the concept of blood-brain barrier</li> <li>- explain formation and circulation of cerebrospinal fluid</li> <li>- locate the receptors for olfaction and describe the neural pathway for smell</li> <li>- identify the gustatory receptors and describe the neural pathway for taste</li> <li>- define the structural subdivision of the eye and identify the afferent pathway of light impulse to the brain</li> <li>- define the anatomical subdivisions of the ear and list the principal events in the physiology of hearing</li> </ul>
9	<ul style="list-style-type: none"> <li>- Blood</li> <li>- Histology of cardiovascular system</li> </ul>	<ul style="list-style-type: none"> <li>-define different types of blood cells and their functions</li> <li>- identify the structure and function of arteries, arterioles, capillaries, venules, and veins</li> </ul>
10	<ul style="list-style-type: none"> <li>- Anatomy of the heart</li> <li>- Anatomy of blood vessels</li> </ul>	<ul style="list-style-type: none"> <li>- identify the location of the heart in the mediastinum and its surface markings</li> <li>- identify the chambers, great vessels and valves of the heart</li> <li>- define the structure of the heart and pericardium</li> <li>- identify the blood supply to the heart</li> <li>- identify the principal arteries and veins of the</li> </ul>



		systemic and pulmonary circulation
11	- Histology of Respiratory system - Anatomy of Respiratory system	- identify the organs of respiratory system - describe the structure and function of each organ - describe the structure of the alveolar-capillary membrane and its function - Describe the main histological features of the upper and lower respiratory tracts
12	- Histology of Digestive system - Anatomy of Digestive system 1	- identify the organs gastrointestinal tract - identify the accessory organs of digestion - define the structure of the wall of G.I. tract - describe the anatomy, histology, and function of each organ of G.I. tract - describe the anatomy, histology, and function of each accessory organ of digestion
13	- Anatomy of Digestive system 2 - Histology of Urinary system	- identify the external and internal gross anatomical features of the kidney - define the structure of the nephron - describe the structure and function of juxtaglomerular apparatus - discuss the structure and physiology of the ureter, urinary bladder, and urethra
14	- Anatomy of Urinary system - Endocrine system	- define the endocrine gland - list the endocrine glands of the body - describe the structure and function of each gland
15	- Reproductive system	- identify the male and female genital organs - describe the location, structure, histology, and function of each organ - explain the structure, development, and histology of the mammary gland
16	- Revision	- Revision

## 21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

1. Small Group discussions
2. Group presentations
3. Student demonstration activities (class presentations and Practical sessions demonstrations)
4. Parallel course (Anatomy and Histology for Pharmacy students, 0532201) will provide Lectures (for acquisition of knowledge: 2 hours/week).

## 22. Evaluation Methods and Course Requirements:

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

1. First exam: (30 marks)
2. Second exam: (30 marks)
3. Final exam: (40 marks)

**23. Course Policies:**

- A- Attendance policies:
- B- Absences from exams and handing in assignments on time:
- C- Health and safety procedures:
- D- Honesty policy regarding cheating, plagiarism, misbehaviour:
- E- Grading policy:
- F- Available university services that support achievement in the course:

**24. Required equipment: ( Facilities, Tools, Labs, Training....)**

1. Formalin preserved human cadavers and body parts.
2. Plastinated human cadavers and body parts.
3. Plastic models
4. Data show

**25. References:**

- 1- Required book (s), assigned reading and audio-visuals:  
**Principles of Anatomy and Physiology. Tortora and Grabowsk**
- 2- Recommended books, materials, and media:  
**Grant's atlas of anatomy**  
**E-learning JU**

**26. Additional information:**

Name of Course Coordinator: ----- Signature: ----- Date: -----

Head of curriculum committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- Signature: -----

