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		AP01-PR05

Department: Dept. of basic medical sciences

Official Stamp:

Course Identification	
Course Name: Introduction to Histology	Course Code and Number: MED116
Number of Credit Hours: 3hours	Semester: second semester
Course Status:	Teaching Language: English
Pre-requisite:	Course Coordinator: Dr. Ramada R. Khasawneh

General Information	
Teaching Method	<input checked="" type="checkbox"/> Face-to-Face <input type="checkbox"/> Online <input type="checkbox"/> Blended
Course Description	<p>This course is designed to provide general knowledge of the microscopic structure of the basic tissues that make up the human body. This course covers structure and function of the mammalian cell, the structure of different organelles and their functions, cell division of somatic and gametes. Furthermore, the methods of slides preparation for conventional light and electron microscopy will be studied. In addition, the different methods of tissue studies used in research will be addressed.</p> <p>The second part of this course deals with the microscopic study of basic tissues namely; Epithelial, Connective tissue and Derivatives, Muscular and Nervous tissues. The objectives are to understand the basic structures of these basic tissue to prepare the student for future normal histology of the body system and to appreciate the pathological changes in the future.</p> <p>The lectures will be supplemented by laboratories that will provide practical analysis of various organs, tissues and cells using virtual light microscopy.</p> <p>Main goal of the course is to provide basic fundamental histological knowledge upon which to build broader and deeper understanding and appreciation for histological sciences and used to understand pathology as the student progress in their academic years.</p>
Course Objectives	<ol style="list-style-type: none">1. To study the normal structure of human cell and its different components with clinical correlations.2. To describe the histology of tissues using appropriate medical terminology



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	<ol style="list-style-type: none">3. To learn the relationship between tissue structure and its function4. To learn to distinguish the organization of normal tissues and the microscopic structure of different basic tissues; Epithelial, Connective Tissue, Muscular and Nervous tissues with applicable clinical aspects5. To construct a foundation of the fundamental concepts of the microscopic anatomy of the human body.
Course Learning Outcomes (CLOs)	<p>CLO1: Describe the detailed structure of the cell organelles under electron microscope and label normal cell structure</p> <p>CLO2: Identify the organization of normal cells into tissues</p> <p>CLO3: Recognize and differentiate the type of tissue under light microscope of H&E stained slides</p> <p>CLO4: Distinguish the variations in structure that fall within the normal range</p> <p>CLO5: Explain the relation of structure and function</p> <p>CLO6: Examine and compare normal with abnormal tissues at the light microscopic level</p> <p>CLO7: To list and understand the different types of basic body tissues.</p>



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Mapping Course Learning Outcomes CLOs to Program Learning Outcomes PLOs

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11	PLO 12	PLO 13	PLO 14
CLO 1	X		X											
CLO 2	X		X				X							
CLO 3	X	X												
CLO 4						X								
CLO 5			X											
CLO 6	X	X		X										
CLO 7	X			X	X									

Assessment Methods

Assessment Type	Date and Time	Assessment Method	Mark (%)	CLOs
Midterm Exam			50% ○ Theory	
Activities*	Activity (1)			
	Activity (2)			
	Activity (3)			



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	Activity (4)				
	Activity (5)				
Final Exam				50% o Theory	

*The instructor must choose at least three activities from the following: quizzes, assignments, projects, videos, discussions, etc.

Course Contents, Schedule, and Instruction Methods				
No	Lecture Topic	Instructor	Lab.	Achieved ILOs
1	Introduction to histology	Dr. Ramada	No lab	- Describe the histology of tissue using appropriate medical terminology
1	Cell Study Methods	Dr. Khaled	No lab	- Describe briefly tissue processing for formalin-fixed paraffin-embedded samples. - Describe briefly general tissue staining process. - Describe basophilia and acidophilia.
2	The Cytoplasm I- cell membrane	Dr. Khaled	No lab	- Understand the structure of plasma membranes of eukaryotic cells. - Know the different types of membrane proteins. - Recognize the role of membrane proteins in transport
2	The Cytoplasm II-organelles I	Dr. Khaled	No lab	- List the cytoplasmic organelles - Understand the structure and function of each organelle within the cytoplasm
3	The Cytoplasm II-organelles II	Dr. Khaled	No lab	
3	The Cell nucleus	Dr. Ramada	Cell Division	- Understand the structure of the nucleus and the nuclear membrane. - Discuss some nuclear laminar diseases. - To study the cellular division in both somatic cells (Mitosis)and



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				gametes (Meiosis) with clinical correlations
4	Epithelial Tissue I	Dr. Hiba	Epithelium	<ul style="list-style-type: none">- List the principal functions of epithelial tissues- Structural and functional characteristics of epithelial tissues that distinguish them from other tissue types- Classify epithelia according to morphological criteria.- Relate structure and function in epithelia- Identify different types of epithelia- Identify goblet cells.- Identify microvilli and cilia cells.- Describe different types of epithelial cell junctions.
4	Epithelial Tissue II	Dr. Hiba	Epithelium	
5	Glands	Dr. Hiba		<ul style="list-style-type: none">- Explain the criteria used for classification of the glands.- Distinguish between endocrine glands and exocrine gland.- Identify glands according secretory duct.- Give examples of body's sites where each type can be found- Examine a set of microscopic slides for epithelium under the light microscope
5	Connective Tissue I	Dr. Ramada	Connective tissue	<ul style="list-style-type: none">- State the general functions of connective tissues.- State the names and properties of the principal fibers and cell types of CT- Give the basis of the morphological classification of CT.
6	Connective Tissue I	Dr. Ramada		



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				<ul style="list-style-type: none">- Identify the tissue, fibroblasts, macrophages, mast cells and plasma cells.- Identify collagen fibers, reticular fibers and elastic fibers.- Identify the different types of connective tissues.- Examine a set of microscopic slides for connective tissue under the light microscope
8	Blood	Dr. Ramada	Blood	<ul style="list-style-type: none">- List blood components.- Classify formed elements of blood.- Discuss the scientific basis of the above classification.- Describe the basic structure of erythrocytes and criteria of their identification.- List the components of cellular granulocytes.- Examine a set of microscopic slides for blood under the light microscope
8	Adipose Tissue	Dr. Ramada	Adipose	<ul style="list-style-type: none">- Differentiate between brown and white adipose tissue in term of structure, location and function.- Identify white adipose tissue- Identify the brown adipose tissue.- Examine a set of microscopic slides for adipose under the light microscope
9	Cartilage	Dr. Ramada	Cartilage	<ul style="list-style-type: none">- Identify and differentiate the three types of cartilage.



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				<ul style="list-style-type: none"> - Differentiate the extracellular matrix of chondrocytes. - Identify isogenic groups. - Locate the perichondrium in the two types of cartilage that arise. - Describe the two types of cartilage growth - Examine a set of microscopic slides for cartilage under the light microscope
9+10	Bone I	Dr. Hiba	Bone	<ul style="list-style-type: none"> - Describe the basic steps of endochondral and intramembranous ossification and give examples - Differentiate between woven and lamellar bone. - Examine a set of microscopic slides for bone ossification under the light microscope
10	Bone I	Dr. Hiba		
11	Muscle I	Dr. Nesreen	Muscle	<ul style="list-style-type: none"> - Describe the structure and function of the different types of muscle. - Identify the epimysium, the perimysium and endomysium - Identify the sarcomere as a morphofunctional unit of the mechanism of contraction in skeletal muscle tissue. - Define a motor unit. - Describe the basic structure of smooth muscle contractile cells. - Examine a set of microscopic slides for
12	Muscle II	Dr. Nesreen		



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				muscle tissue under the light microscope
12	Nervous I	Dr. Ramada	Nervous	<ul style="list-style-type: none">- Organize the nervous system into structural and functional divisions- Describe the structure of a neuron.- Describe the structural classification of neurons (multipolar, unipolar, bipolar and anaxonic)- Identify the cellular components of nervous tissue (neurons and neuroglia)- Compare sensory and motor functions.
13	Nervous II	Dr. Ramada		
14	INTEGMANTORY I	Dr. Nesreen	Skin	<ul style="list-style-type: none">- Describe the structure of the the epidermis.- Describe structure of the dermis.- Explain bases of skin color.- Describe related congenital anomalies.
14	INTEGMANTORY I	Dr. Nesreen	Hair and nail	<ul style="list-style-type: none">- Compare the structure and distribution of hair follicles, nails , sebaceous and sweat glands
<p>This Time-Table will be updated if needed Follow up with the Lab Instructor for updates on the lab sessions. The Dates for All Exams will be Announced as per University Rules. Any Absenteeism, the student has to present a valid excuse to set for Make-up Exam</p>				



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Main Textbook and References	
Main Textbook	1- Junqueira's Basic Histology text and atlas. Anthony L. Mescher 2- Basic histology text and atlas. Luiz Carlos Junqueira and Jose Carneiro.
Other References	Credited Scientific Site on the net

Policies and Instructions***	
Attendance	<ul style="list-style-type: none">• The student is expected to attend all classes and lab sessions.• Repeated tardiness and leaving labs prior to dismissal is a set -up for failure.• Absence more than 10% is defined as unsatisfactory while absence more than 20% the student according to the law can NOT attend the exam.
Activities	
Late Submission	
Exams	
Cheating and Plagiarism	

***For more information, please see the student handbook.

