The Hashemite University

الجامعـــة الهاشميـــة

Deanship of Academic Development and International Outreach

عمادة التطوير الأكاديمي والتواصل الدولي

Syllabus: Histology (2219011272)
First Semester 2024 /2025

COURSE INFORMATION	
Course Name: Histology **Semester:** First **Department:** Basic Dental Sciences **Faculty:** Faculty of Dentistry	**Course Code:** 2219011272 **Section:** All **Core Curriculum**: DDS Program
Day(s) and Time(s): **Histology Lectures:** In-person Learning Sunday and Tuesday: 08:30am – 09:30am **Lab Sessions:** In-person Learning Session 1: Sunday 11:30 am – 2:30 pm Session 2: Sunday 2:30 pm – 5:30 pm Session 3: Tuesday 11:30 am – 2:30 pm Session 4: Tuesday 2:30 pm – 5:30 pm **Classroom:** Lectures: **Halls:** Pharmacy 101 **Labs:** Histology Lab **(Faculty of Medicine, 2nd floor)**	**Credit Hours:** 3 (2 Theory + 1 Practical) **Prerequisites**: None

COURSE DESCRIPTION

Histology is a basic medical science that studies normal microscopic features of tissues, ultra-structure of cells and their relation to functions. Through class lectures and lab sessions, the students will be made to master the basic knowledge and theory of human histology. Students are also encouraged to train themselves to use the microscope correctly and to refine their abilities to analyze and describe various histological structures.

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.
- Relevant films and documentaries
- Video lectures
- E-learning resources: e-reading assignments and practice quizzes through Microsoft Team

FACULTY INFORMATION

Name	**Dr. Jihad Ahmed Alzyoud (Course coordinator)**
Academic Title:	**Associate Professor**
Office Location:	**Faculty of Dentistry, 3rd floor, Room -------**
Telephone Number:	**------**
Email Address:	**Jihada@hu.edu.jo**
Office Hours:	**Sunday** To be determined **Tuesday** To be determined **Thursday** To be determined *Please send an e-mail (jihada@hu.edu.jo) to meet at any other time. You can also contact me through Microsoft Teams*
Name	**Dr. Heba Abedrabboh Ali**
Academic Title:	**Assistant Professor**
Office Location:	**Faculty of Dentistry, 3rd floor, Room -----**
Telephone Number:	**------**
Email Address:	**heba_ali@hu.edu.jo**
Office Hours:	**Sunday** To be determined **Tuesday** To be determined **Thursday** To be determined *Please send an e-mail (heba_ali@hu.edu.jo) to meet at any other time. You can also contact me through Microsoft Teams*

REFERENCES AND LEARNING RESOURCES

Histology

Required Textbook:

- Anthony L. Mescher. ***Junqueira's Basic Histology: Text and Atlas*** (McGraw-Hill Education. 15th edition: 2018). ISBN: 978-1260026177

Suggested Additional Resources:

- Michael H. Ross and Wojciech Pawlina, ***Histology: A Text and Atlas, with Correlated Cell and Molecular Biology*** (Lippincott Williams & Wilkins. 8th edition: 2018). ISBN: 978-1496383426
- Victor P. Eroschenko, ***Atlas of Histology with Functional Correlations*** (Lippincott Williams & Wilkins. 13th edition: 2017). ISBN: 978-1496316769

Useful Web Resources:

- Histology Guide – virtual microscopy laboratory - https://histologyguide.com/

STUDENT LEARNING OUTCOMES MATRIX

Program Learning Outcomes	Course Objectives	Course Student Learning Outcomes	Assessment Method
A1 A3	1. Introduction: Understand the main principles of microscopy and tissue preparation.	1.1 Understand the principles of light and electron microscopy and atomic force microscopes. 1.2 Know the steps used in the routine preparation of tissues for histological study and the justification for each step. 1.3 Understand the principles of tissue staining. 1.4 Comprehend the principles of various special techniques used in tissue preparation. 1.5 Recognize problems that may occur during the process of tissue preparation.	• Exams
A1 A3	2. Epithelial tissue: Recognize epithelial tissues' structure, types, and functions.	2.1 Define epithelial tissue and recognize its main features. 2.2 Classify epithelium and understand the bases behind the classification. 2.3 Identify the main functions and locations of the different types of epithelia. 2.4 Understand the various methods to classify glands. Know examples of each type. 2.5 Define cell polarity. 2.6 Identify the specialized features of the different regions of a cell. 2.7 Correlate function with appearance.	• Exams
A1 A3	3. Connective tissue: Recognize the structure, types, and functions of connective tissues.	3.1 Define connective tissue and recognize its main features. 3.2 Enumerate the various types of cells of the connective tissue and recognize their main features and functions. 3.3 Define the extracellular matrix and know its main components. 3.4 Classify connective tissue and understand the bases behind the classification. 3.5 Identify the main features and functions of the various types of proper connective tissue. 3.6 Define cartilage. Know the types of cartilage and the main features, locations, and functions of each type.	• Exams

		3.7 Define bone. Recognize the main features and functions of bone cells. Classify bone into its types. Define the epiphyseal plate. Understand the process of ossification. 3.8 Define blood. Know the components of blood. Identify the main features and functions of blood elements. 3.9 Correlate function with appearance.	
A1 A3	4. Nervous tissue: Recognize the main features of the nervous tissue.	4.1 Identify the characteristic features of neurons. 4.2 Enumerate the types of glia cells. Know the main features, location, and functions of each type. 4.3 Understand the histology of the main parts of the central nervous system. 4.4 Identify the components of the blood-brain barrier. 4.5 Understand the basic histology of peripheral nerves and ganglia. Differentiate between nerve/tract, ganglion/nucleus. 4.6 Correlate function with appearance.	• Exams
A1 A3	5. Muscular tissue: Recognize the structure, types, and functions of muscular tissues.	5.1 Recognize the main histological features of skeletal muscle tissue. 5.2 Identify the various components of sarcomeres. 5.3 Recognize the main histological features of cardiac muscle tissue. 5.4 Recognize the main histological features of smooth muscle tissue. 5.5 Correlate function with appearance.	• Exams
A1 A3	6. Practical Histology: Gain the ability to recognize basic body tissues from microscopic slides	6.1 Study the main parts of light microscopes and the function of each. 6.2 Gain the ability to identify various cells and components of tissue. 6.3 Recognize the various types of epithelial tissues from microscopic slides. 6.4 Recognize the various types of connective tissues from microscopic slides. 6.5 Recognize the various types of neurons and glia cells and the main parts of the nervous system from microscopic slides. 6.6 Recognize the various types of muscular tissues from microscopic slides. 6.7 Apply knowledge of features to practice. 6.8 Correlate function with appearance.	• Exams
A1 A3	7**. Digestive system I:** Recognize the general structure of the digestive tract. The structure of oral cavity (Tongue and Teeth).	Describe and study the microscopic structure of the tongue including mucosa, muscles and papillae.	• Exams

A1 A3	**8. Digestive system I:** Recognize the structure of the organs associated with the digestive tract - Major Salivary Glands.	Describe the microscopic structure of the major salivary glands: parotid, submandibular and sublingual.	• Exams
A1 A3	**9. The Immune System & Lymphoid Organs** Recognize the structure of mucosa-associated lymphoid tissue and lymph nodes	1. Review criteria for identifying blood cells. 2. Examine a blood smear under the light microscope To identify different blood cells. 3. Examine histological sections of lymphoid organs under light microscope.	• Exams
A1 A3	**10. The Female Reproductive System - Ovary**	Understand the important histological features of the female reproductive organs (Ovaries, Uterine tubes, Uterus)	• Exams
A1 A3	**11. The Male Reproductive System - Testis**	Understand the important histological features of the male reproductive organs (Testis, epididymis, Vas deferens)	• Exams

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's needs.

Special Needs Section: Student Services and Care Unit
Tel: 053903333 ext. 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 The 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 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 offense and can result in your work losing marks or being failed. The Hashemite University 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

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.

Absences from exams

If a student misses an examination, then he/she has the opportunity to do a make-up examination, according to the University Regulations. A student is not allowed to have a makeup exam unless he/she presents a valid excuse within 72 hours of the scheduled exam or when the

excuse is lifted. The excuses are presented to the Excuse Committee, which has the right to accept or refuse the excuse. Only a student with an accepted excuse will be able to take the make-up exam. (The time and date of the makeup exams will be announced at the appropriate times).

Health and safety procedures

College members and students must at all times, conform to Health and Safety rules and procedures.

COURSE ASSESSMENT

Course Calendar and Assessment

Students will be graded through the following means of assessment and their final grade will be calculated from the forms of assessment as listed below with their grade weighting taken into account.

Assessment	Grade Weighting	Approximate Time
Mid Exam	30%	Sunday 24/11/2024
Practical Exam	30%	/5/2024
Final Exam	40%	Thursday 13/6/2024

Description of Exams

Test questions will predominately come from the material presented in the lectures. The exam will consist of multiple-choice questions for the regular exams and short essay questions for makeup exams (for students with accepted excuses, only documented absences will be considered as per the Hashemite University guidelines).

Mid exam:

Marks: 30
Number of questions: 40 MCQS
Duration: 60 minutes
Material included: 14 lectures

Practical exam:

Marks: 30
Number of questions: 30 MCQS
Duration: 40 minutes
Material included: All topics studied in the labs (12 labs)

Final exam

Marks: 40
Number of questions: 50 MCQS
Duration: 60 minutes
Material included: All lectures (24 lectures)

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 LECTURE SCHEDULE AND CONTENT DISTRIBUTION

Week	*Lecture / Lab*	*Topic*	*Chapter of Recommended Book**
Week 1 (6-10/10/2024)	Histology Lecture 1	➢ Microscopy ➢ Tissue preparation	Junqueira's Chapter 1
	Histology Lecture 2	• **Epithelium 1:** ➢ Definition ➢ Classification	Junqueira's Chapter 4
	Histology Lab 1	➢ Introduction to Histology	
Week 2 (13-17/10/2024)	Histology Lecture 3	**Epithelium II:** ➢ Simple epithelium ➢ Stratified epithelium	Junqueira's Chapter 4
	Histology Lecture 4	**Epithelium III:** ➢ Glandular epithelium ➢ Classification	Junqueira's Chapter 4
	Histology Lab 2	➢ Parts of light microscope & Stains	
Week 3 (20-24/10/2024)	Histology Lecture 5	**Epithelium IV:** ➢ Epithelial cell polarity	Junqueira's Chapter 4
	Histology Lecture 6	**Connective tissue I:** ➢ Definition ➢ Cells	Junqueira's Chapter 5
	Histology Lab 3	• Simple Epithelium	
Week 4 (27-31/10/2024)	Histology Lecture 7	**Connective tissue II:** • Extracellular matrix • Classification of connective tissue • Proper connective tissue	Junqueira's Chapter 5
	Histology Lecture 8	**Connective tissue III:** ➢ Adipose tissue	Junqueira's Chapter 6
	Histology Lab 4	➢ Stratified Epithelium	
Week 5 (3-7/11/2024)	Histology Lecture 9	**Connective tissue IV:** ➢ Cartilage	Junqueira's Chapter 7
	Histology Lecture 10	**Connective tissue V:** ➢ Blood	Junqueira's Chapter 12
	Histology Lab 5	➢ Connective tissue I	
Week 6 (10-14/11/2024)	Histology Lecture 11	**Connective tissue VI:** • Bone (part 1)	Junqueira's Chapter 8
	Histology Lecture 12	**Connective tissue VII:** • Bone (part 2)	Junqueira's Chapter 8
	Histology Lab 6	• Connective tissue II	
Week 7 (17-21/11/2024)	Histology Lecture 13	**Nervous tissue I:** • Neurons • Glia cells	Junqueira's Chapter 9
	Histology Lecture 14	**Nervous tissue II:** • Central nervous system Peripheral nervous system	Junqueira's Chapter 9
	Histology Lab 7	• **Nervous tissue I**	
Week 8 (24-28/11/2024)	Histology Lecture 15 Histology Lecture 16 Histology Lab 8	• Midterm Exams	
Week 9 (1-5/12/2024)	Histology Lecture 17	**Muscular tissue I:** • Skeletal muscle tissue	Junqueira's Chapter 10

		• Cardiac muscle tissue • Smooth muscle tissue	
	Histology Lecture 18	**Muscular tissue II:** • Skeletal muscle tissue • Cardiac muscle tissue • Smooth muscle tissue	Junqueira's Chapter 10
	Histology Lab 9	• Nervous tissue II	
Week 10 (8-12/12/2024)	Histology Lecture 19	**Muscular tissue III:** • Skeletal muscle tissue • Cardiac muscle tissue • Smooth muscle tissue	Junqueira's Chapter 15
	Histology Lecture 20	• General Structure of the Digestive Tract	Junqueira's Chapter 15
	Histology Lab 10	• Muscular tissue II	
Week 11 (15-19/12/2024)	Histology Lecture 21	• Oral cavity – Tongue	Junqueira's Chapter 16
	Histology Lecture 22	• Oral Cavity – Teeth	Junqueira's Chapter 14
	Histology Lab 11	• Muscular tissue II	
Week 12 (22-26/12/2024)	Histology Lecture 23	• Salivary Glands	Junqueira's Chapter 22
	Histology Lecture 24	• The Immune System & Lymphoid Organs	Junqueira's Chapter 21
	Histology Lab 12	• Digestive tract	
Wednesday 25/12/2024	عيد الميلاد المجيد - عطلة		
Week 13 (29/12 - 2/1/2024)	Histology Lecture 25	• The Female Reproductive System - Ovary	
	Histology Lecture 26	• The Male Reproductive System - Testis	
	Histology Lab 8	• Revision - Practical	
Wednesday 1/1/2025	رأس السنة الميلادية = عطلة		
Week 14 (5-9/1/2024)	Histology Lecture 27	• Revision-1	
	Histology Lecture 28	• Revision-1	
	Histology Lab 14	Final Exam – Practical??? (9/1/2024)	
Week 15 (12-16/1/2024)	**Final Exams (12/6/2024)**		
Week 16 (17-23/1/2024)			

* Refer to 'References and Learning Resources' section above for the full title of the recommended books

"Lecture hours and weeks are approximate and may change as needed"