Republic of Yemen

Ministry of Higher Education & Scientific Research

Emirates International University

Faculty of Dentistry

Department of Basic Science

Bachelor of Doctor of Dental Surgery

Course Specification of

General Histology& Embryology

Course No. ( )

Review committee: Head of the Department Quality Assurance head Dean of Faculty

I. Course Identification and General Information:

1	**Course Title:**	General Histology& Embryology			
2	**Course Code & Number:**				
3	**Credit Hours:**	**Credit Hours**	**Theory Hours**		**Lab. Hours**
			Lecture	**Exercise**	
		3	2	--	2
4	**Study Level/ Semester at which this Course is offered:**	1st Level / 2nd Semester			
5	**Pre –Requisite (if any):**	Biology, Anatomy 1			
6	**Co –Requisite (if any):**	None			
7	**Program (s) in which the Course is Offered:**	Doctor of Dental Surgery			
8	**Language of Teaching the Course:**	English			
9	**Study System:**	Semester based System			
10	**Mode of Delivery:**	Full Time			
11	**Location of Teaching the Course:**	Faculty of Dentistry			
12	**Prepared by:**	Prof..Saeed M. Saeed			

II. Course Description:

This course will explore cells and tissues of the human body (histology or micro-anatomy) by the use of various microscopic techniques. Special emphasis will be placed on the structure-function relationship in different tissues and organs and the role of stem cells in tissue regeneration. The lectures will be supplemented by the practical analysis of various organs, tissues and cells using virtual microscopy. At the end of the course students should be able to recognize and interpret microscopic tissue images and understand how the cellular organization of organs enables them to perform their specific functions.

III. Course Intended Learning	Referenced PILOs

Outcomes (CILOs) Upon successful completion of the course, students will be able to:		Learning out of program		
	A. Knowledge and Understanding:	**I, A or E**		
a1	Describe the levels of organization of living matter and define major concepts of cytology, histology, and organology.		A2	
a2	Define the term tissue and analyze the morphological and functional characteristics of the basic tissues:		A1	
a3	Mention the different steps required in preparing specimens for light and electron microscopy.		A4	
a4	Describe the normal histological structure of some of various body systems (CVS - integumentary system - Lymphatic system)		A1	
	B. Intellectual Skills:			
b1	Name the structures appointed to, mentioning its function and relation to cellular regulation.		B1	
b2	Differentiate between PAS and hematoxylin/eosin in staining lipid secreting cells.		B1	
b3	Analyze the presence of simple or stratified epithelium, loose or dense connective tissue, circular or longitudinally disposed smooth muscle in the functions of an organ		B1	
b4	Correlate between histological structure and function of different organs of all studied systems.		B1	
	C. Professional and Practical Skills:			
c1	Demonstrate proficiency and expertise in		C2	

	the proper use of the light microscope in examining histological specimens on glass slides.			
c2	Recognize the characteristic structures of cells, tissues and organ systems of the body at the light microscope histologic level, and for selected tissues, at the electron microscopic ultrastructural level...		C1	
c3	Draw and label the structures they have seen in electron photomicrographs and under light microscope during practical classes.		C1	
	D. Transferable Skills:			
d1	Study independently for continuous self learning and plan research studies to achieve goals.		D1	
d2	Utilize the resources of biomedical information including the available electronic facilities to update his/her knowledge		D2	
d3	Deal with the instruments and equipment in a responsible manner keeping them intact and clean		D6	

(A) Alignment of Course Intended Learning Outcomes (Knowledge and Understanding) to Teaching Strategies and Assessment Methods:

	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
a1	Describe the levels of organization of living matter and define major concepts of cytology, histology, and organology.	Lectures Seminars	-Quizzes -Midterm Exam -Final Exam
a2	Define the term tissue and analyze the morphological and functional characteristics of the basic tissues:	Lectures Presentation	-Quizzes -Midterm Exam -Final Exam

a3	Mention the different steps required in preparing specimens for light and electron microscopy.	Lectures Presentation	-Quizzes -Midterm Exam -Final Exam
a4	Describe the normal histological structure of some of various body systems (CVS - integumentary system - Lymphatic system)	Lectures Presentation	-Quizzes -Midterm Exam -Final Exam

(B) Alignment of Course Intended Learning Outcomes (Intellectual Skills) to Teaching Strategies and Assessment Methods:

	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
b1	Name the structures appointed to, mentioning its function and relation to cellular regulation.	-Lectures - Discussion	-Quizzes -Midterm Exam -Final Exam
b2	Differentiate between PAS and hematoxylin/eosin in staining lipid secreting cells.	-Lectures - Discussion	-Quizzes -Midterm Exam -Final Exam
b3	Analyze the presence of simple or stratified epithelium, loose or dense connective tissue, circular or longitudinally disposed smooth muscle in the functions of an organ	-Lectures - Discussion	-Quizzes -Midterm Exam -Final Exam
b4	Correlate between histological structure and function of different organs of all studied systems.	-Lectures - Discussion	-Quizzes -Midterm Exam -Final Exam

(C) Alignment of Course Intended Learning Outcomes (Professional and Practical Skills) to Teaching Strategies and Assessment Methods:

	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
c1	Demonstrate proficiency and expertise in the proper use of the light microscope in examining histological specimens on glass slides.	-Lab Experiments	- Practical Exam

c2	Recognize, identify and describe the characteristic structures of cells, tissues and organ systems of the body at the light microscope histologic level, and for selected tissues, at the electron microscopic ultrastructural level...	-Lab Experiments	- Practical Exam
c3	Draw and label the structures they have seen in electron photomicrographs and under light microscope during practical classes.	-Lab Experiments	- Practical Exam

(D) Alignment of Course Intended Learning Outcomes (Transferable Skills) to Teaching Strategies and Assessment Methods:

	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
d1	Study independently for continuous self learning and plan research studies to achieve goals.	- Discussion - Self Learning - Presentation - Seminars	Research Homework Group work
d2	Utilize the resources of biomedical information including the available electronic facilities to update his/her knowledge	- Discussion - Self Learning - Presentation - Seminars	Research Homework Group work
d3	Deal with the instruments and equipment in a responsible manner keeping them intact and clean	- Discussion - Self Learning - Presentation - Seminars	Research Homework Group work

IV. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	**Introduction and microtechniques**	Definition and history of histology Light microscopy and electron microscopy Preparation of slides and stains	1st	2	a3, b2

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
2	**Cytology & Cytogenetics**	Cell; concept and structure Membranous organelles Non-membranous organelles Inclusions Nucleus and chromatin Cell division; types Chromosomal aberrations	2nd	2	a1, b1
3	**Epithelium**	Epithelial membranes Glandular epithelium Myoepithelium Neuroepithelium	3rd	2	a1, a2, b1
4	**Connective tissue**	Concepts and components C.T. cells Intercellular substances Types of C.T.	4th	2	a2,b2
5	**Cartilage**	Concept and types Cartilage cells Nutrition and growth	5th	2	a1, a2, b1, b2
6	**Bone**	Concept and types Bone cells Ossification; intramembranous and intra-cartilagenous	6th	2	a1, a2, b1
7	**Blood & hemopoiesis**	Concept and components RBC_s ; structure and function WBC_s; types, structure and functions Platelets; structure and function Hemopoiesis; types	7th	2	a1, a2, b1, b3
8	**Midterm exam**	-MCQs and essay questions	8th	2	a1,a2, a3 b1-b3
9	**Muscle tissue**	Concept and types Skeletal muscles; structure and function Cardiac muscle; structure and function Smooth muscle; structure and function Neuromuscular junction	9th	2	a1, a2, b1, b2
10	**Nervous tissue**	Concept Neurons and neuroglia; classifications, types, site and function	10th	2	a1, a2, b1, b2
11	**CVS**	The heart Large, medium, small arteries and arterioles Large, medium, small veins and venules Capillaries ; types	11th	2	a4,b4
12	**Lymphatic system**	Diffuse lymphatic system Tonsils Lymph nodes, spleen and thymus	12th	2	a4,b4
13	**Integumentary system**	Skin; epidermis and dermis Glands; sweat glands (eccrine and apocrine), sebaceous glands Hair follicles	13th	2	a4,b4

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
14	Review		14th 15th	4	a1-a4, b1-b4
15	Final Exam	-MCQs and essay questions	16th	2	a1-a4, b1-b4
Number of Weeks /and Units Per Semester			16	32	

B. Case Studies and Practical Aspect:

No.	Tasks/ Experiments	Week Due	Contact Hours	Learning Outcomes (CILOs)
1	The usage of microscope and staining of tissues	1st	2	c1–c3
2	Cell organelles at LM and EM Cell division	2nd	2	c1–c3
3	Types of epithelium, Types of glands	3rd	2	c1–c3
4	Types of C.T. (loose), Types of C.T. (dense)	4th	2	c1–c3
5	Types of cartilage, Compact and spongy bone	5th	2	c1–c3
6	Types of blood cells	6th	2	c1–c3
7	Skeletal, smooth and cardiac muscle, Nissl bodies, Dendrites and axons	7th	2	c1–c3
8	Heart and large Arteries Muscular arteries	8th	2	c1–c3
9	Veins and capillaries	9th	2	c1–c3
10	Payer's patches and lymph nodes, Spleen and Thymus	10th	2	c1–c3
11	Skin (epidermis and dermis)	11th	2	c1–c3
12	Glands (sweat and sebaceous)	12th	2	c1–c3
13	Revision	13th	2	c1–c3
14	Practical Exam	14th	2	c1–c3
Number of Weeks /and Units Per Semester		14	28	

V. Teaching Strategies of the Course:

- Lectures
- Discussion
- Seminars
- Presentation
- Lab Experiments
- Self-Learning

VI. Assessment Methods of the Course:

- Quizzes
- Midterm Exam
- Final Exam
- Practical Exam
- Research
- Homework
- Group work

VII. Assignments:

No.	Assignments	Week Due	Mark	Aligned CILOs (symbols)
1	**Laboratory logbooks and reports.** **Research** **Homework** **Group work** **Discussion**	weekly	5	b1, b2, b3, d1, d2, d3
Total			**5**	

VIII. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1	Quizzes	5th	5	5%	a1, a2; b1, b2
2	Assignments	weekly	5	5%	b1, b2, b3, d1, d2, d3
3	Midterm Exam	8th	20	20%	a1-a3, b1-b3
4	Final Exam	16th	50	50%	a1-a4, b1-b4
5	Practical Exam	14th	20	20%	c1-c3
Total			100	100%	

IX. Learning Resources:

1- Required Textbook(s) (maximum two):

1- Anthony L. Mescher, PhD; JUNQUEIRA'S Basic Histology--TEXT & ATLAS. 13th ed.
2- SMSaeed : Textbook of human histology. 4 Ed.

2- Essential References:

1- Michael H. Ross; Wojciech Pawlina, 2010, Histology: A Text and Atlas, with Correlated Cell and Molecular Biology, 6th Ed.

3- Electronic Materials and Web Sites etc.:

1- Websites of Histology:
https://www.imedpub.com/scholarly/histology-journals-articles-ppts-list.php

https://www.tandfonline.com/toc/yhis20/current

X. Course Policies: (Based on the Uniform Students' By law (2007)

1	**Class Attendance:** Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	**Tardiness:** A student will be considered late if he/she is not in class after 10 minutes of the start time of class.
3	**Exam Attendance/Punctuality:**

	No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.
4	**Assignments & Projects:** Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	**Cheating:** Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
6	**Forgery and Impersonation:** Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
7	**Other policies:** The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.

Faculty of Dentistry

Department of Basic Science

Bachelor of Doctor of Dental Surgery

Course Plan (Syllabus) of **General Histology& Embryology**

Course No. ( )

I. Information about Faculty Member Responsible for the Course:							
Name of Faculty Member:	**Prof..Saeed M. Saeed**	**Office Hours**					
Location& Telephone No.:	**Sana'a 771098083**	**4 Hours Weekly**					
			1	**1**			**1**
E-mail:	smsmohd35@gmail.com	SAT	SUN	MON	TUE	WED	THU

II. Course Identification and General Information:

1	**Course Title:**	General Histology& Embryology			
2	**Course Code & Number:**				
3	**Credit Hours:**	**Credit Hours**	**Theory Hours**		**Lab. Hours**
			Lecture	**Exercise**	
		3	2	--	2
4	**Study Level/ Semester at which this Course is offered:**	1st Level / 2nd Semester			
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8	**Language of Teaching the Course:**	English			
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IV. Course Intended Learning Outcomes (CILOs) :

Upon successful completion of the Course, student will be able to:

	A. Knowledge and Understanding:
a1	Describe the levels of organization of living matter and define major concepts of cytology, histology, and organology.
a2	Define the term tissue and analyze the morphological and functional characteristics of the basic tissues:
a3	Mention the different steps required in preparing specimens for light and electron microscopy.
a4	Describe the normal histological structure of some of various body systems (CVS - integumentary system - Lymphatic system)
	B. Intellectual Skills:
b1	Name the structures appointed to, mentioning its function and relation to cellular regulation.
b2	Differentiate between PAS and hematoxylin/eosin in staining lipid secreting cells.
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	C. Professional and Practical Skills:
c1	Demonstrate proficiency and expertise in the proper use of the light microscope in examining histological specimens on glass slides.
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c3	Draw and label the structures they have seen in electron photomicrographs and under light microscope during practical classes.
	D. Transferable Skills:
d1	Study independently for continuous self learning and plan research studies to achieve goals.
d2	Utilize the resources of biomedical information including the available electronic facilities to update his/her knowledge
d3	Deal with the instruments and equipment in a responsible manner keeping them intact and clean

V. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1	**Introduction and microtechniques**	Definition and history of histology Light microscopy and electron microscopy Preparation of slides and stains	1st	2
2	**Cytology & Cytogenetics**	Cell; concept and structure Membranous organelles Non-membranous organelles Inclusions Nucleus and chromatin Cell division; types Chromosomal aberrations	2nd	2
3	**Epithelium**	Epithelial membranes Glandular epithelium Myoepithelium Neuroepithelium	3rd	2
4	**Connective tissue**	Concepts and components C.T. cells Intercellular substances Types of C.T.	4th	2
5	**Cartilage**	Concept and types Cartilage cells Nutrition and growth	5th	2
6	**Bone**	Concept and types Bone cells Ossification; intramembranous and intra-cartilagenous	6th	2
7	**Blood & hemopoiesis**	Concept and components RBCs ; structure and function WBCs; types, structure and functions Platelets; structure and function Hemopoiesis; types	7th	2
8	**Midterm exam**	-MCQs and essay questions	8th	2
9	**Muscle tissue**	Concept and types	9th	2

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
		Skeletal muscles; structure and function Cardiac muscle; structure and function Smooth muscle; structure and function Neuromuscular junction		
10	**Nervous tissue**	Concept Neurons and neuroglia; classifications, types, site and function	10th	2
11	**CVS**	The heart Large, medium, small arteries and arterioles Large, medium, small veins and venules Capillaries ; types	11th	2
12	**Lymphatic system**	Diffuse lymphatic system Tonsils Lymph nodes, spleen and thymus	12th	2
13	**Integumentary system**	Skin; epidermis and dermis Glands; sweat glands (eccrine and apocrine), sebaceous glands Hair follicles	13th	2
14	**Review**		14th 15th	4
15	**Final Exam**	-MCQs and essay questions	16th	2
Number of Weeks /and Units Per Semester			**16**	**32**

B. Case Studies and Practical Aspect:

No.	Tasks/ Experiments	Week Due	Contact Hours
1	**The usage of microscope and staining of tissues**	1st	2
2	**Cell organelles at LM and EM Cell division**	2nd	2
3	**Types of epithelium, Types of glands**	3rd	2
4	**Types of C.T. (loose), Types of C.T. (dense)**	4th	2
5	**Types of cartilage, Compact and spongy bone**	5th	2
6	**Types of blood cells**	6th	2

B. Case Studies and Practical Aspect:			
No.	**Tasks/ Experiments**	**Week Due**	**Contact Hours**
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11	Skin (epidermis and dermis)	11th	2
12	Glands (sweat and sebaceous)	12th	2
13	Revision	13th	2
14	Practical Exam	14th	2
Number of Weeks /and Units Per Semester		**14**	**28**

* Practical part starts 2 weeks after theoretical part

VI. Teaching Strategies of the Course:

- Lectures
- Discussion
- Seminars
- Presentation
- Lab Experiments
- Self-Learning

VII. Assessment Methods of the Course:

- Quizzes
- Midterm Exam
- Final Exam
- Practical Exam
- Research
- Homework
- Group work

VIII. Assignments:

No.	Assignments	Week Due	Mark
1	Laboratory logbooks and reports. Research Homework Group work Discussion	weekly	5
Total			5

IX. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment
1	Quizzes	5th	5	5%
2	Assignments	weekly	5	5%
3	Midterm Exam	8th	20	20%
4	Final Exam	16th	50	50%
5	Practical Exam	14th	20	20%
Total			100	100%

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