



Medicine and Surgery Bachelor Program- Credit Points

Course Specifications

[Principles of Histology and cell biology]

Semester: One

2021 -2022

Code: HIST 1102

1- Administrative Information

Program title: Bachelor of Medicine and Surgery M.B. B.Ch (Credit point)

1. **Course/ module title:** Principles of Histology and cell biology
2. **Course/ module code:** HIST 1102
3. **Course/ module coordinator:** Dr. Reda Hassan
4. **Department(s) offering the course:** Department of Histology and cell biology
5. **Academic year:** 2021-2022
6. **Level:** one
7. **Date of approval by:**
 - **The Board of Program:**
 - **The Internal Quality Assurance & Accreditation Center:**
 - **Council of the Faculty of Medicine, Tanta University:**
8. **No. of hours:**

Credit points			Lectures	Practical	Media	PBL	Assignments	Seminar	Exam	Taught hrs
		70%	14	13+ 1 revision	11				4	84
	SDL Hours	30%				6	10	21		37

2- Professional Information

Academic standards adopted in this course is designed according to NARS 2017 Faculty council 24/3/2018

3 – Course/ Module Description

- It is a descriptive science of microscopic structure of the human body cells and tissues.

4– Overall Course Aim/Objectives

Aim:

The aim of the course is: to provide knowledge concerning the histological structure of human body cells and basic tissue types.

Objectives:

1. To supply the students with knowledge concerning the structural characteristics of the human body cells and basic tissue types.
- 2- To enable the students to select appropriate methods to reveal specific microscopic features of cells and tissues.
- 3- To make the students able to relate the composition of each tissue type to its specific functions.
- 4- To make the students fully aware of the ultrastructure of different types of tissues components.

5 - Intended learning outcomes (ILOs)

By the end of this course the student will be able to:

Competency Area I: The graduate as a health care provider

1.8 - Apply knowledge of the biomedical sciences relevant to the clinical problem at hand.

1.9- Analyze, and evaluate relevant and current data from literature, using information technologies and library resources, in order to help solve a clinical problem based on evidence (EBM).

Competency Area II: The graduate as a health promoter

2.1 Identify the basic determinants of health.

Competency Area III: The graduate as a professional

3.1- Exhibit appropriate professional behaviors and relationships in all aspects of practice, demonstrating honesty, integrity, commitment, compassion, and respect.

Competency Area IV: The graduate as a scholar and scientist

4.1- Describe the normal structure of the body and its major organ systems

- *Identify structure of the cell membrane, cells and tissues of the human body.
- *Describe the arrangement of cell organelles, associated structures and cell specialization.
- * Identify different types of epithelia; describe cellular and functional characteristics.
- * Describe the methods of classification of glandular epithelia.
- *List and identify the components of ground substance, fibers and cells found in connective tissue.
- *Recognize and classify types of connective tissue proper and their components.
- *Describe histological and ultrastructure characters of neurons.
- *Distinguish between the types of glial cells.
- *Describe the process of myelination.
- * Describe the structure of the skin, hair follicle and nail.
- * Describe the structure, location, of different types of cutaneous glands

4.2- Explain the molecular, biochemical, and cellular mechanisms that are important in maintaining the body's homeostasis.

- *Describe structure of cell membrane.
- *Identify each cellular organelle and relate its structure to the function.

4.8-Demonstrate basic sciences specific practical skills and procedures relevant to future practice, recognizing their scientific basis

- *Identify the different histological technique used for preparation of the tissue.
- *Enumerate the main steps in tissue preparation.
- * List types of stains and identify the stains suitable for each tissue component.
- *Predict the outcome of each stain with different tissue

- *Name main parts of the microscope
- *Identify different types of lenses and predict the use of each one
- *Adjust the microscope & use it efficiently
- *Discuss the terms related to the microscope (magnification power, refractive index, resolution)

Competency Area V: The graduate as a member of the health team and system

- 5.2- Respect colleagues and other health care professionals and work cooperatively with them
- 5.4- Apply leadership skills to enhance team functioning, and the learning environment
- 5.6- Evaluate his/her work and that of others using constructive feedback

Competency Area VI: The graduate as a lifelong learner and researcher

6.3-Identify opportunities and use various resources for learning

- 6.6- Effectively manage learning time and resources and set priorities.

6 – Course/ Module Contents

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Topics	No of hours						Total Hours	ILOs covered
	Lectures	Lab.	-- medi a--	--- Pbl--	--- seminar --يحدد لاحقاً -	Exam		
Introduction to Histology & some related terminology Cell Membrane	1						2	
1- membranous organelles	1	1	1				6	1.8 - 4.1 – 4.2 -4.8 -6.3
2- membranous organelles	1	1	2				8	1.8 -4.1-4.2-4.8
3- non membranous	1	1					4	1.8 -4.1-4.2-4.8
4- Cytoskeleton of the cell	1	1	1				6	1.8 -4.1-4.2-4.8 -6.3
5- Nucleus	1	1					4	1.8 - 4.1 – 4.2 -4.8
Epithelium	1	1					4	1.8 - 4.1 – 4.2 -4.8
Epithelial specialization	1	1	1				6	1.8 - 4.1 – 4.2 -4.8-6.3
1-General structure of CT Ground substance & Fibers	1		1				4	1.8 - 4.1 – 4.2 -4.8
CT proper Special types of CT	1			1			4	1.8 - 4.1 – 4.2 -4.8
CT cells	1	1					4	1.8 - 4.1 – 4.2 -4.8

Topics	No of hours						Total Hours	ILOs covered
	Lectures	Lab.	-- medi a--	--- Pbl--	--- seminar يحدد لاحقاً -	Exam		
Nervous tissue	2	1	1				8	1.8 - 4.1 – 4.2 -4.8-
Skin	2	1	1				8	1.8 - 4.1 – 4.2 -4.8-6.3

7 - Teaching and learning methods

- On line lectures through YouTube channel of Histology department
- (<http://www.youtube.com/channel/UCCxYT7hdV8eSICPZW3jBUNA>)
- On line home assignments through E- learning site
(<http://e-learningcenter1.tanta.edu.eg/med-moodle/my/>)
- Small-group active learning through Microsoft teams meeting
- Self-directed learning
- Oral presentation using PowerPoint
- Multi-media
- Lab contact hours

Item	Time schedule	Teaching hours
On line Lectures	1-times /week	2
Practical	One time /week	2
Online Multi-media	One time /week	2
PBL		6h/semester

Self directed learning		
1-seminar day	3 hours /weeks for 7	21 /semester
2- On line Assignments		6/semester
3- Quizzes		3/semester
Total		

8 - Student evaluation

8-1 COURSE POLICIES

8.1.1. Attendance:

Attendance is **restricted to practical lessons**. Due to the course emphasis in developing skills and not only knowledge, the students' participation in **some course** activities is critical. Students who expect to be late for a mandatory class, lab, or small group session for any reason must contact the course director before the start of class. Unexcused absences demonstrate unprofessional behavior by the student.

8-1-2 Remediation of Unsatisfactory Performance in Course

A student who performs below the satisfactory level will be notified to Course Director for the purpose of developing a formal remediation plan which will be established by the course director and the student.

8-1-3 Missing tests

- Students with sufficient reason for missing a test will have no grade for the missed test and their mean grade for tests will be based only on those that they completed.
- Students missing a test without sufficient reason will have a zero as grade for the missed tests, which will be incorporated to obtain the mean grade for their tests and the final grade for the course.

8-2 Course assessment:

Formative and summative assessment: they include:

1. **on line (weekly assignments)**
2. **Logbook for practical part** and reflection reports
2. MCQs in addition to ultra-short essay.
3. Practical skills assessment:
 - a. Objective Structured Practical Exam (OSPE)
 - b. The assessment of procedural skills in labs.

8-3 course assessment schedule and grading:

Grades are obtained based on the following complementary assessments:

Assessment Method	Date	Description	ILOs/Competencies assessed	Marks	% of Total
1. Continuous assessments	Through semester	<ul style="list-style-type: none"> 2 Quizzes (Mcq) Log book 	4.1-4.2-5.6-6.3-6.6	30	30%
	Week 7	<ul style="list-style-type: none"> Online assignments Seminar day 	5.2-5.4-5.6-9-6.3-6.6		
2. Mid-term written exam	Midterm Week 8	(MCQ) Exam	1.8-4.1-4.2	10	10%
3- Final written exam	End semester Week 16	MCQ & ultrashort questions	1.8-4.1-4.2	30	30%
4- Practical exam	End semester Week 16	OSPE	4.8-2.1	30	30%
Total					100

9. Facilities required

- E-learning site through
- Microsoft teams
- Department channel on youtube:
- Official site of the collage:
- Lab with sanitation and infection control tools
- Lab with data show and computer facilities
- Computer lab equipped with internet connection
- Computing resources
- Flip chart and colored pen
- A wall board
- Facilities for photocopying

10 - List of references

TEXTBOOK, MATERIALS, READINGS, RESOURCES, TERMINOLOGY

Mandatory Textbook

- Junqueira's Basic histology. Mescher AL. 14thed, McGraw-Hill education.

Recommended reference textbooks:

- Color Textbook of Histology, Leslie P. Gartner & James L. Hiatt
- Di Fiore's Atlas of histology with Functional Correlation, Victor P. Eroschenko,
- **Periodicals and web sites:**
- <http://telc.tanta.edu.eg>
- <http://www.lab.anhb.uwa.edu>
- <http://www.getbodysmart.com/ap/histology/menu/menu.html>
- www.ejhistology.net

Course coordinator: dr. Reda Hassan Elbakary

A) Summary of topics matched with competencies' domains ILOs in the module

The name of course	University: Tanta /Academy					
Code of course	Faculty: Medicine					
Topics of the course	Health care provider	Health promoter	Professionalism	Scholar and scientist	Health team & system	LLL & researcher
Lectures:						
Introduction to Histology				√		√
Histological terminology						
1-Cell membrane	√	√	√	√	√	√
2-non membranous organelles						
3-membranous						
4-Cytoskeleton of the cell						
5- Nucleus	√	√	√	√	√	√
Epithelium	√	√	√	√	√	√
Epithelial specialization	√	√	√	√	√	√
1-General structure of CT	√	√	√	√	√	√
Ground substance						

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& Fibers						
CT proper						
Special types of CT						
CT cells						
Nervous tissue	✓	✓	✓	✓	✓	✓
Skin	✓	✓	✓	✓	✓	✓
Practical						
Micro techniques (1&2)	✓	✓	✓	✓	✓	✓
Microscope	✓	✓	✓	✓	✓	✓
1-Cell membrane	✓	✓	✓	✓	✓	✓
2-non membranous organelles						
3-membranous						
4-Cytoskeleton of the cell						
5- Nucleus	✓	✓	✓	✓	✓	✓
Epithelium	✓	✓	✓	✓	✓	✓
Epithelial specialization	✓	✓	✓	✓	✓	✓
1-General structure of CT	✓	✓	✓	✓	✓	✓
Ground substance & Fibers						
CT proper						
Special types of CT						
CT cells						
Nervous tissue	✓	✓	✓	✓	✓	✓
Skin	✓	✓	✓	✓	✓	✓
Multi-media						
Micro technique	✓	✓				
Cell organelles	✓	✓	✓	✓	✓	✓
Cytoskeleton	✓	✓	✓	✓	✓	✓
Epithelial specialization	✓	✓	✓	✓	✓	✓
Nervous tissue	✓	✓	✓	✓	✓	✓
Skin appendices	✓	✓	✓	✓	✓	✓

Small group						
	✓	✓			✓	✓

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-----			seminar			
	v	v			v	v

B) Summary of topics, schedule, methods of teaching& assessment, ILOs assessed, hours and marks of the module:

Topics of the course	Objectives	Week	Method of teaching	Method of assessment	ILOs	Hours	Weight in assessment
Online Lectures:							
Introduction	Orientation of the student about the subject and its content	1	interactive	-	1.8	2	-
Histological terminology	List the most common terms related to histology	1	interactive	MCQ	1.8	2	
1-Cell membrane	Define and describe the structure & function of cell membrane	2	interactive	MCQ& ultrashort	1.8 -4.2-4.1	2	
2 membranous organelle	Define and describe the arrangement of cell organelles and associated structure	2	interactive	MCQ& ultrashort	1.8 -4.2-4.1	2	
3- non ----- ----- membranous organelle	Define and describe the arrangement of cell organelles and associated structure	3	interactive	MCQ& ultrashort	1.8 -4.2-4.1	2	
4- Cytoskeleton	Know structure & function of cytoskeleton	4	interactive	MCQ& ultrashort	1.8 -4.1-4.2	2	
5- Nucleus	Know structure & function of Nucleus	5	interactive	MCQ& ultrashort	1.8 -4.1-4.2	2	
6- Epithelium	Identify the structure of the epithelial tissue	6	interactive	MCQ& ultrashort	1.8 -4.1-4.2	2	
7-Cell junction	Identify the structure & types of cell junctions	7	interactive	MCQ& ultrashort	1.8 -4.1-4.2	2	
8-CT general structure &fibers	List and identify the components of, fibers, & matrix of ground substance of CT.	8	interactive	MCQ& ultrashort	1.8	2	
9- cells of CT	Identify the cell types of connective tissue proper, their origins, and major functions.	9	Interactive	MCQ& ultrashort	1.8-4.1-4.2	2	
10- special type of CT	Recognize and classify types of connective tissue proper and their components	10	interactive	MCQ& ultrashort	1.8 -4.1-4.2	2	
11-Nervous tissue	Describe histological and ultrastructure characters of nervous tissue	11	interactive	MCQ& ultrashort	1.8 -4.1-4.2	2	
12-Nervous tissue	List the types of glial cells and their main functions.	12	interactive	MCQ& ultrashort	1.8 -4.1-4.2	2	
13-Skin	Describe the general structure of the skin	13	interactive	MCQ& ultrashort	1.8 -4.1-4.2	2	
14-Skin	State the segments and layers the hair follicle,& nail.	14	interactive	MCQ& ultrashort	1.8 -4.1-4.2	2	

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Practical							
Microtechnique 1	Identify the different histological technique used for preparation of the tissue. Enumerate the main steps in tissue preparation	1		OSPE	1.8 -4.1-4.2-4.8	2	
Microtechnique 2	List types of stains Identify the stains suitable for each tissue component.	1		OSPE	1.8 -4.1-4.2-4.8	2	
Microscope	Name main parts of the microscope identify different types of lenses and predict the use of each one Adjust the microscope & use it efficiently	2		OSPE	1.8 -4.1-4.2-4.8	2	
Cell membrane	Identify the EM photo of cell membrane & some membranous organelles	3		OSPE	1.8 -4.1-4.2-4.8	2	
Membranous organelle	Identify the EM photo of the organelle	4		OSPE	1.8 -4.1-4.2-4.8	2	
Non membranous	Identify the EM photo of the organelle	5		OSPE	1.8 -4.1-4.2-4.8	2	
Cytoskeleton	Identify EM of cytoskeleton	6		OSPE	1.8 -4.1-4.2-4.8	2	
Nucleus	Identify the EM photo of the nucleus.	7		OSPE	1.8 -4.1-4.2-4.8	2	
Epithelium1	Identify different types of epithelia; describe cellular and functional characteristics	8		OSPE	1.8 -4.1-4.2-4.8	2	
Epithelium2	Identify cell specialization	9		OSPE	1.8 -4.1-4.2-4.8	2	
CT1	Identify cell	10		OSPE	1.8- 4.1-4.2-4.8	2	
CT2	Identify cell	11		OSPE	1.8 -4.1-4.2-4.8	2	
Nervous tissue1	Identify slides of the organelle Nervous Tissue	12		OSPE	1.8 -4.1-4.2-4.8	2	
Skin	Identify slides of skin	13		OSPE	1.8 -4.1-4.2-4.8	2	
Revision		14		OSPE	1.8 -4.1-4.2-4.8	2	
Exam		15		OSPE	1.8 -4.1-4.2-4.8	2	
Small group(PBL)							
		12			5.2-5.4-5.6-9-6.3-6.6	2	
		13			5.2-5.4-5.6-9-6.3-6.6	2	
					5.2-5.4-5.6-9-6.3-6.6	2	
On line Multi-media							
Microtechnique		2			1.8 -4.1-4.2-4.8-5.2-5.4-5.6	2	
Cell membrane		3			1.8 -4.1-4.2-4.8-5.2-5.4-5.6		

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Organelles		4			1.8 -4.1-4.2-4.8-5.2-5.4-5.6	2	
cytoskeleton		5			1.8 -4.1-4.2-4.8-5.2-5.4-5.6	2	
Epithelial specilization		9			1.8 -4.1-4.2-4.8-5.2-5.4-5.6	2	
CT		10			1.8 -4.1-4.2-4.8-5.2-5.4-5.6	2	
Special types of CT.		11			1.8 -4.1-4.2-4.8-5.2-5.4-5.6	2	
Nervous tissue		12			1.8 -4.1-4.2-4.8-5.2-5.4-5.6	2	
Skin appendices		13			1.8 -4.1-4.2-4.8-5.2-5.4-5.6	2	
Self directed learning(Seminar 21 h+6 h PBL+ 6 h assignments + 4 h on line quizzes)							
1- Endosomes & anulate lamellae		3-6	Group dynamic	presentation	1.8 -4.1-4.2-5.2-5.4-5.6-9-6.3-6.6		
2- Cell inclusion		3-6	Group dynamic	presentation	1.8 -4.1-4.2-5.2-5.4-5.6-9-6.3-6.6		
3- Nucleolus		3-6	Group dynamic	presentation	1.8 -4.1-4.2-5.2-5.4-5.6-9-6.3-6.6		
4- Types of collagen fibers		3-6	Group dynamic	presentation	1.8 -4.1-4.2-5.2-5.4-5.6-9-6.3-6.6		
5- Simple and stratified epith.		3-6	Group dynamic	presentation	1.8 -4.1-5.2-5.4-5.6-6.3-6.6		
6- Sweat gland		3-6	Group dynamic	presentation	1.8 -4.1-5.2-5.4-5.6-6.3-6.6		

