

# TOROS ÜNİVERSİTESİ

School Of Health Sciences  
Nursing And Health Services

## Course Information

BIOCHEMISTRY					
Code	Semester	Theoretical	Practice	National Credit	ECTS Credit
		Hour / Week			
HEM105	Fall	2	0	2	4

<b>Prerequisites and co-requisites</b>	-
<b>Language of instruction</b>	Turkish
<b>Type</b>	Required
<b>Level of Course</b>	Bachelor's
<b>Lecturer</b>	Ebru BALLI
<b>Mode of Delivery</b>	Face to Face
<b>Suggested Subject</b>	-
<b>Professional practise ( internship )</b>	None
<b>Objectives of the Course</b>	Aims to teach basic biochemical concepts about Health Sciences.
<b>Contents of the Course</b>	water and molecules, carbonhydrates, fats, genes and hormones, vitamins, aminoacids proteins enzym and cenzyms. basic of metabolism, carbohydrate metabolism, lipit metabolism, aminoacid metabolism, entegrasyon of metabolism.

## Learning Outcomes of Course

#	Learning Outcomes
1	Learns Light Microscope features, types. Learns tissue processing for light microscopy. Learns functions of necessary chemicals.
2	Explains the general structure of cell. Defines the characteristics of plasma membrane. Explains the characteristics of nucleus. Explains the general structure of cytoplasm. Defines the membranous organelles. Defines the nonmembranous organelles. Explains the structure of the cytoskeleton.
3	Explains the cell cycle. Defines types of cell division.
4	Learns the general structure and functions of epithelium tissue. Classifies epithelium tissue. Differentiates types of lining epithelium. Learns apical and lateral cell specializations and junctional complexes, basal cell specializations and cell-extracellular matriks specializations. Learns the general structure and functions of glandular epithelium, types of glandular epithelium.
5	Explains the general structure and functions of connective tissue and connective tissue cells. Explains the connective tissue fibers, extracellular matrix and ground substance. Explains the general structure of adipose tissue. Explains the general structure of cartilage tissue. Defines the histological types and functions of cartilage tissue. Explains the general structure of bone tissue. Explains the general structure and functions of blood tissue and blood cells.
6	Learns general structure of muscle tissue. Classifies muscle tissue. Learns structure and characteristics of skeletal (striated) muscle. Learns structure and characteristics of cardiac muscle. Learns structure and characteristics of smooth muscle.
7	Learns general structure and function of nervous tissue. Learns distinguishing different neuron types of gray matter of the central nervous system. Learns distinguishing different cell types and nerve fibers of white matter of the central nervous system. Learns myelinated nerve fibers of the peripheral nervous system and Schwann cells and sheaths wrapping these fibers. Learns distinguishing neurons in ganglia from other cell types.
8	Learns general structure and functions of skin. Differentiates layers of skin. Learns characteristics and functions of cells of the epidermis. Learns structure and functions of the skin appendages.

## Course Syllabus

#	Subjects	Teaching Methods and Technics

1	Water and macromolecules	Face to face Lecture, Discussion
2	carbohydrates	Face to face Lecture, Discussion
3	lipids and hormones	Face to face Lecture, Discussion
4	lipids and hormones	Face to face Lecture, Discussion
5	vitamins	Face to face Lecture, Discussion
6	aminoacids protein and coenzymes	Face to face Lecture, Discussion
7	aminoacids protein and coenzymes	Face to face Lecture, Discussion
8	preparation to exam	Face to face Lecture, Discussion
9	Mid Exam	
10	basic of metabolism	Face to face Lecture, Discussion
11	carbohydrate metabolism	Face to face Lecture, Discussion
12	carbohydrate metabolism	Face to face Lecture, Discussion
13	lipid metabolism	Face to face Lecture, Discussion
14	lipid metabolism	Face to face Lecture, Discussion
15	preparation to exam	Face to face Lecture, Discussion
16	Final Exam	

## Course Syllabus

#	Material / Resources	Information About Resources	Reference / Recommended Resources
1	Theory and Practice of Histological Techniques-Bancroft, Stevens		
2	Histological and Histochemical Methods, Theory & Practice-Kiernan		
3	Histology, A Text and Atlas (6th Edition)-Ross, Pawlina		
4	Color Textbook of Histology-Gartner Hiatt		
5			
6			
7			

## Method of Assessment

#	Weight	Work Type	Work Title
1	40%	Mid-Term Exam	Mid-Term Exam
2	60%	Final Exam	Final Exam

## Relationship between Learning Outcomes of Course and Program Outcomes

#	Learning Outcomes	Program Outcomes	Method of Assessment
1	Learns Light Microscope features, types. Learns tissue processing for light microscopy. Learns functions of necessary chemicals.	2,7,10	1,2
2	Explains the general structure of cell. Defines the characteristics of plasma membrane. Explains the characteristics of nucleus. Explains the general structure of cytoplasm. Defines the membranous organelles. Defines the nonmembranous organelles. Explains the structure of the cytoskeleton.	2,7,10	1,2
3	Explains the cell cycle. Defines types of cell division.	2,7,10	1,2
4	Learns the general structure and functions of epithelium tissue. Classifies epithelium tissue. Differentiates types of lining epithelium. Learns apical and lateral cell specializations and junctional complexes, basal cell specializations and cell-extracellular matrix specializations. Learns the general structure and functions of glandular epithelium, types of glandular epithelium.	2,7,10	1,2

5	Explains the general structure and functions of connective tissue and connective tissue cells. Explains the connective tissue fibers, extracellular matrix and ground substance. Explains the general structure of adipose tissue. Explains the general structure of cartilage tissue. Defines the histological types and functions of cartilage tissue. Explains the general structure of bone tissue. Explains the general structure and functions of blood tissue and blood cells.		
6	Learns general structure of muscle tissue. Classifies muscle tissue. Learns structure and characteristics of skeletal (striated) muscle. Learns structure and characteristics of cardiac muscle. Learns structure and characteristics of smooth muscle.	2,7,10	1,2
7	Learns general structure and function of nervous tissue. Learns distinguishing different neuron types of gray matter of the central nervous system. Learns distinguishing different cell types and nerve fibers of white matter of the central nervous system. Learns myelinated nerve fibers of the peripheral nervous system and Schwann cells and sheaths wrapping these fibers. Learns distinguishing neurons in ganglia from other cell types.	2,7,10	1,2
8	Learns general structure and functions of skin. Differentiates layers of skin. Learns characteristics and functions of cells of the epidermis. Learns structure and functions of the skin appendages.	2,7,10	1,2

PS. The numbers, which are shown in the column Method of Assessment, presents the methods shown in the previous table, titled as Method of Assessment.

## Work Load Details

#	Type of Work	Quantity	Time (Hour)	Work Load
1	Course Duration	14	2	28
2	Course Duration Except Class (Preliminary Study, Enhancement)	14	3	42
3	Presentation and Seminar Preparation	0	0	0
4	Web Research, Library and Archival Work	0	0	0
5	Document/Information Listing	0	0	0
6	Workshop	0	0	0
7	Preparation for Midterm Exam	2	6	12
8	Midterm Exam	1	1	1
9	Quiz	0	0	0
10	Homework	0	0	0
11	Midterm Project	0	0	0
12	Midterm Exercise	0	0	0
13	Final Project	0	0	0
14	Final Exercise	0	0	0
15	Preparation for Final Exam	2	6	12
16	Final Exam	1	1	1
				<b>96</b>