

# Dentistry -- COMMITTEE-2/ week 5

COURSE TITLE	COURSE CODE	SEMESTER	THEORETICAL (hours / week)	PRACTICE (hours / week)	CREDIT	ECTS
COMMITTEE-2 CELL STRUCTURE AND FUNCTION	DNT 112	1	6	2	7	5
LEVEL OF COURSE	<input type="checkbox"/> Associate's degree program <input checked="checked" type="checkbox"/> Bachelor's program <input type="checkbox"/> Master's program <input type="checkbox"/> PhD					
INSTRUCTION LANGUAGE OF THE COURSE	<input type="checkbox"/> TURKISH <input checked="checked" type="checkbox"/> FOREIGN LANGUAGE <input checked="checked" type="checkbox"/> English <input type="checkbox"/> German <input type="checkbox"/> French					
TYPE OF COURSE	<input checked="checked" type="checkbox"/> COMPULSORY <input type="checkbox"/> ELECTIVE <input type="checkbox"/> DEPARTMENTAL <input type="checkbox"/> NON-DEPARTMENTAL					
PREREQUISITE OF THE COURSE	NONE					
PURPOSE OF THE COURSE	To know the development, structure and function of the cell and its sub-components. To evaluate the biochemical process of the cell.					
COURSE OBJECTIVE	To know the relationship between water and metabolism, the concept of pH and buffer. To comprehend cell membrane properties and associate them with ultra-structural morphology. To understand the chemical structure of the two main components of cell's genetic material (DNA and RNA) and to know the types of RNA. To comprehend the ultrastructure of the cell nucleus and to associate it with genomic replication and repair mechanisms. To know the mitochondrial genome, which has a separate genetic system from the cell genome, and associate it with the ultrastructure of mitochondria. To comprehend biochemical properties of enzymes and lipids and explain lipid metabolism.					
TEACHING METHOD	FACE-TO-FACE					
TEACHING AND LEARNING METHODS OF THE COURSE	<input type="checkbox"/> Q&A <input checked="checked" type="checkbox"/> Case Problem Solving/ Drama- Role/ Case Management <input checked="checked" type="checkbox"/> Laboratory <input type="checkbox"/> Quantitative Problem Solving <input type="checkbox"/> Fieldwork <input checked="checked" type="checkbox"/> Group Study / Assignment <input checked="checked" type="checkbox"/> Individual Assignment <input checked="checked" type="checkbox"/> WEB-based Learning <input type="checkbox"/> Internship <input type="checkbox"/> Practice in Field <input checked="checked" type="checkbox"/> Project Preparation <input type="checkbox"/> Report Writing <input type="checkbox"/> Seminar <input type="checkbox"/> Supervision <input type="checkbox"/> Social Activity <input type="checkbox"/> Occupational Activity <input type="checkbox"/> Occupational Trip <input type="checkbox"/> Application (Modelling, Design, Model, Simulation, Experiment et.) <input checked="checked" type="checkbox"/> Reading <input type="checkbox"/> Thesis Preparation <input type="checkbox"/> Field Study <input type="checkbox"/> Student Club and Council Activities					

**COURSE COORDINATOR (S)**

Prof. M.D. H. Yegane Güven (Biochemistry)  
 Asst. Prof. Hande Koçak (Medical Biology)  
 Prof. M.D. Tangül Müdok -- Asst. Prof. Türkân Sarioğlu (Histology and Embryology)  
 Asst. Prof. Hasan Hüseyin Şahin (Physiology)  
 Asst. Prof. Cevdet Nacar (Biophysics)

**COMMITTEE-2**  
**Cell Structure and Function**  
**Course Topics**  
**5 weeks**

ANATOMY	BIOCHEMISTRY	MEDICAL BIOLOGY	HISTOLOGY-EMB.	PHYSIOLOGY	BIOPHYSICS
	Definition of Biochemistry, its importance in Medicine and Dentistry	Cell Structure Different Membrane	Cell membrane- Microvillus-Cilia- Bonds		Interaction of radiation with matter
	Molecular Basis of Life-1	Transport- Diffusion,Active and Passive Transport-Ligand- Receptor relationship in Cell Membrane	Golgi-ER-lysosome (GERL)		Formation and properties of X-rays
	Molecular Basis of Life-2	DNA-RNA structure and differences - RNA types	Ribosome- Microtubule	Cell membrane transition and secondary messenger system	X-Ray Imaging Methods
	Enzymes-1	Properties of genetic material, DNA replication DNA repair systems Chromatin structure	Nucleus and chromosomes		X-Ray Device Structure
	Enzymes-2	Mitochondrial genome-aging - mitochondrial diseases	Mitochondria		Structure of Computed Tomography Device

**LEARNING OUTCOMES**

<b>INFORMATION</b> (It is arranged according to theoretical and / or factual information classification)	<ol style="list-style-type: none"> <li>1. Students comprehend the molecular basis of life.</li> <li>2. Students know all the organelles of the cell at the level of electron microscopy and associate them with genomic processes.</li> <li>3. Students know the description of the structure of DNA, the functioning of its replication in gene expression and its function, the structure and function of the nucleus and chromosomes.</li> <li>4. Students comprehend intracellular enzyme and lipid metabolism and know organelles involved in metabolism.</li> </ol>
<b>SKILL</b> (As cognitive and / or application skills)	<ol style="list-style-type: none"> <li>1. Students establish the relationship between molecule-cell-organelle - gene regulation.</li> <li>2. Students describe all organelles of the cell at the level of electron microscopy.</li> </ol>
<b>COMPETENCE</b>	<ol style="list-style-type: none"> <li>1. Students exhibit responsibility and self-discipline.</li> <li>2. Students have productive and questioning personalities.</li> <li>3. Students use their mother tongue effectively, strive to use their foreign language.</li> <li>4. Students can work independently and take responsibility.</li> </ol>

# RESOURCES

## ANATOMY

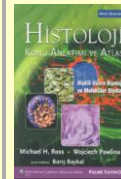
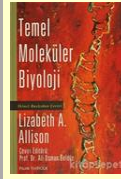
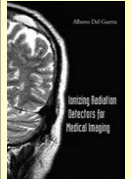
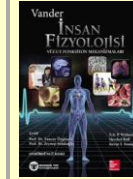
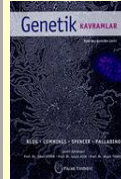
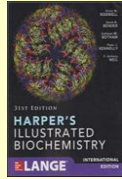
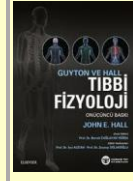
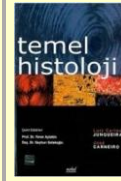
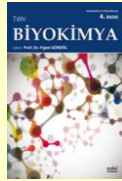
## BIOCHEMISTRY

## MEDICAL BIOLOGY

## HISTOLOGY-EMB.

## PHYSIOLOGY

## BIOPHYSICS



**EVALUATION SYSTEM**

YEAR / SEMESTER STUDIES	NUMBER	CONTRIBUTION RATE %
Attendance / Participation		%
Laboratory		%
Practice		%
Practice Examination		%
Quiz		%
Homework		%
Presentation		%
Projects		%
Course-specific Internship		%
Fieldwork		%
Article Critique		%
Article Writing		%
Module Group Study		%
Brainstorming		%
Role Playing + Dramatization		%
Studying outside of the Classroom		%
Preparatory Work, Enhancement, Practice Repetition etc.		%
Homework (reading, writing, watching movies etc.)		%
Project Preparation + Presentation		%
Report Preparation + Presentation		%
Presentation / Seminar Preparation + Presentation		%
Oral Exam		%
MIDTERM (Theoric%-Practical%)		40% (%90 - %10)
FINAL (Theoric%-Practical%)		60% (%90 - %10)
<b>TOTAL</b>		<b>100%</b>

**COURSE ECTS**  
European Credit Transfer System  
-student workload-

Activities	Number (week)	Duration (hour)	Total Work Load
Course Duration	5	15	75
Laboratory	5	2	10
Practice	0	0	0
Practice Examination	0	0	0
Course-specific Internship	0	0	0
Fieldwork	0	0	0
Article Critique	0	0	0
Article Writing	0	0	0
Module Group Study	0	0	0
Brainstorming	0	0	0
Role Playing + Dramatization	0	0	0
Studying outside of Classroom (Preparatory Work, Enhancement, Practice Repetition etc.)	5	8	40
Homework (reading, writing, watching movies etc.)	3	3	9
Project Preparation + Presentation	0	0	0
Report Preparation + Presentation	0	0	0
Presentation / Seminar Preparation + Presentation	0	0	0
Oral Exam	0	0	0
Preparation for Midterm Exams	7	2	14
MIDTERM	1	1	1
Preparation for Final Exams	14	2	14
FINAL	1	1	1
<b>Total ECTS</b>			<b>178</b>
30 hours = 1 ECTS			
<b>ECTS:</b>			<b>5</b>