

Dentistry (English)			
Bachelor	TR-NQF-HE: Level 6	QF-EHEA: First Cycle	EQF-LLL: Level 6

## Course Introduction and Application Information

Course Code:	DENT108		
Course Name:	Medical Biochemistry 2		
Semester:	Spring		
Course Credits:	<div>ECTS</div> <div>3</div>		
Language of instruction:	English		
Course Condition:			
Does the Course Require Work Experience?:	No		
Type of course:	Compulsory Courses		
Course Level:	<div> <div>Bachelor</div> <div>TR-NQF-HE:6. Master`s Degree</div> <div>QF-EHEA:First Cycle</div> <div>EQF-LLL:6. Master`s Degree</div> </div>		
Mode of Delivery:	Face to face		
Course Coordinator:	Dr. Öğr. Üy. MURAT EKREMOĞLU		
Course Lecturer(s):	Asst. Prof. Murat Ekremoğlu		
Course Assistants:			

## Course Objective and Content

Course Objectives:	This course aims to teach biochemistry to dentistry students. In this course students will study principles of metabolism of Proteins, Carbohydrate, Lipids and biochemistry of bone and connective tissue
Course Content:	A required course which provides dentistry students to learn medical biochemistry. It is a weekly 2-hours course.

## Learning Outcomes

The students who have succeeded in this course;

- 1) Explain the synthesis of proteins, lipids, nucleic acids, and carbohydrates and their role in metabolic pathways.
- 2) Explain the biochemistry of bone and connective tissue

## Course Flow Plan

Week	Subject	Related Preparation
1)	Digestion & absorption of dietary carbohydrates Carbohydrate metabolism: Glycolysis	
2)	Krebs Cycle Pentose Phosphate Pathway	
3)	Carbohydrate metabolism: Glycogenolysis Carbohydrate metabolism: Glycogen biosynthesis	
4)	Electron Transport Chain Oxidative Phosphorylation and Regulation Mechanisms	
5)	Carbohydrate metabolism: Gluconeogenesis and Blood Glucose Homeostasis Diabetes	
6)	Digestion & absorption of dietary lipids Transport & storage of lipids	
7)	Lipid metabolism: Biosynthesis of fatty acids Lipid metabolism: Cholesterol synthesis, transport & excretion	
8)	Lipid metabolism: Oxidation of fatty acids & ketogenesis Lipid metabolism: Metabolism of acyl glycerols. Sphingolipids & eicasonoids Lipid metabolism disorders	
9)	Midterm	
10)	Digestion & absorption of dietary proteins Protein metabolism: Ammonia metabolism of amino acids in brain & kidney	
11)	Protein metabolism: Ammonia metabolism of amino acids in liver Protein metabolism: Metabolism of carbon atoms in amino acids	
12)	Protein metabolism: Biosynthesis of non-essential amino acids Transport of amino acids & related hereditary diseases	
13)	Metabolism of purine and pyrimidine	
14)	Biochemistry of Bone and Connective Tissue	

## Sources

Course Notes / Textbooks:	Lippincott's Illustrated Reviews: Biochemistry Fifth Edition
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References:	Lippincott's Illustrated Reviews: Biochemistry Fifth Edition
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## Course - Program Learning Outcome Relationship

Course Learning Outcomes	1	2
Program Outcomes		
1) Has basic and up-to-date knowledge in the field of dentistry, follows scientific publications, and applies evidence-based data to his/her professional practice.	2	2
2) Knows well and effectively uses devices, tools, and materials specific to diagnosis and treatment in the field of dentistry.		
3) Evaluates the knowledge in the field of dentistry critically, integrates it with the knowledge of disciplines in the field of health, uses it by analyzing and synthesizing it.	2	2
4) Produces projects related to the field of dentistry, can work with other health disciplines, takes part as a member of the research team and evaluates and reports the results obtained at a scientific level.	2	2
5) Uses information that will contribute to the dentistry profession during practice, takes responsibility, and produces solutions in unforeseen situations.	2	2
6) Shares, compares, and exchanges dental knowledge with professional colleagues in social and scientific environments in written, verbal, and visual forms.		
7) Within the framework of social, scientific, and ethical values including patient privacy, communicates with patients and their relatives, knows all the characteristics of the patient, and recommends the most appropriate treatment with a patient-centered approach.		
8) Follows technological developments, participates in national and international studies, and shares and presents own observations, experiences, and research to further advance dental practices.		
9) By adopting the principle of lifelong learning throughout the dentistry profession, follows current evidence-based dental knowledge and uses it during his professional practice.		
10) During dental practice, in cases such as abuse and addiction, performs the treatment by exhibiting the behaviors required by social ethics and legal rules, and collects and records the relevant data.		
11) Uses basic and current knowledge in the field of dentistry during professional practice for the benefit of society within the framework of national values and country realities.		
12) In natural disasters and emergency cases, takes the protective measures required by the dentistry profession; performs professional practices that benefit patients and society		

13) Generates ideas regarding health policy in dentistry, prioritizes individual and public health, and carries out preventive and therapeutic medical practices within the framework of scientific, ethical, and quality processes.	1	2
14) Differentiates the signs and symptoms commonly encountered in the dentistry profession, makes a treatment plan and refers when necessary, and manages diseases and clinical situations regarding their urgency and patient priority.		
15) Can assume the leadership responsibility of the team he/she works for, manage it following scientific criteria, and support the professional development of the team.		

### Course - Learning Outcome Relationship

No Effect	1 Lowest	2 Average	3 Highest

	Program Outcomes	Level of Contribution
1)	Has basic and up-to-date knowledge in the field of dentistry, follows scientific publications, and applies evidence-based data to his/her professional practice.	2
2)	Knows well and effectively uses devices, tools, and materials specific to diagnosis and treatment in the field of dentistry.	
3)	Evaluates the knowledge in the field of dentistry critically, integrates it with the knowledge of disciplines in the field of health, uses it by analyzing and synthesizing it.	2
4)	Produces projects related to the field of dentistry, can work with other health disciplines, takes part as a member of the research team and evaluates and reports the results obtained at a scientific level.	2
5)	Uses information that will contribute to the dentistry profession during practice, takes responsibility, and produces solutions in unforeseen situations.	2
6)	Shares, compares, and exchanges dental knowledge with professional colleagues in social and scientific environments in written, verbal, and visual forms.	
7)	Within the framework of social, scientific, and ethical values including patient privacy, communicates with patients and their relatives, knows all the characteristics of the patient, and recommends the most appropriate treatment with a patient-centered approach.	
8)	Follows technological developments, participates in national and international studies, and shares and presents own observations, experiences, and research to further advance dental practices.	

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15)	Can assume the leadership responsibility of the team he/she works for, manage it following scientific criteria, and support the professional development of the team.	

### Assessment & Grading

Semester Requirements	Number of Activities	Level of Contribution
Midterms	1	% 40
Final	1	% 60
<b>total</b>		<b>% 100</b>
PERCENTAGE OF SEMESTER WORK		% 40
PERCENTAGE OF FINAL WORK		% 60
<b>total</b>		<b>% 100</b>

### Workload and ECTS Credit Calculation

Activities	Number of Activities	Preparation for the Activity	Spent for the Activity Itself	Completing the Activity Requirements	Workload
Course Hours	14	2	2		56

Midterms	1	2	1		3
Final	1	4	1		5
Total Workload					64