

Course Name	Code	Semester	Theory (hrs/week)	Application (hrs/week)	Laboratory (hrs/week)	ECTS
<b>Protein and Enzyme Biochemistry</b>	BIK505	Fall	2	0	0	4
Prerequisites	No					
Course language	Turkish					
Course Type	Imperative					
Learning and teaching techniques of the course	Lecture, interactive, brainstorming					
Course instructor(s)	Prof. Dr. E. İlker SAYGILI					
Course objectives	To teach the structural properties of proteins and enzymes. It aims to teach the cellular functions of enzymes and their catalysis properties of biochemical reactions.					
Learning outcomes of the course	<ol style="list-style-type: none"> <li>1. Know the structural properties of proteins, amino acids and enzymes.</li> <li>2. Have sufficient knowledge about protein analysis and isolation methods.</li> <li>3. Knows the metabolic control mechanisms related to the structural properties of amino acids and enzymes.</li> <li>4. Have knowledge about industrial applications of enzymes.</li> </ol>					
Resources	<ol style="list-style-type: none"> <li>1. Nelson DL, Cox MM. Lehninger Principles of Biochemistry, W.H. Freeman; 7th Ed., 2017</li> <li>2. Berg JM, Tymocko JL, Gatto GJ jr, Stryer L. Biochemistry, W.H. Freeman; 9th ed, 2019.</li> <li>3. Gürdöl F, Ademoğlu E. Biochemistry. Nobel Medical Bookstores, 2013</li> <li>4. Bhagavan NV. Ha CH. Essentials of Medical Biochemistry With Clinical Cases, Academic Press, 2nd Ed., 2015.</li> <li>5. Rodwell VW, Bender DA, Botham KM, kennelly PJ, Weil PA. Harper's Illustrated Biochemistry, McGraw-Hill Education, 31th Ed. 2018</li> </ol>					

### Weekly Course Topics:

WEEKS	TOPICS TO BE DISCUSSED
1. Week	Structure of amino acids
2. Week	Physical and chemical properties and classification of amino acids
3. Week	Structural properties of peptides and proteins
4. Week	Fibrous and globular proteins
5. Week	Plasma protein electrophoresis
6. Week	Plasma proteins
7. Week	Structure and derivatives of hemoglobin and myoglobin
8. Week	Hemoglobin oxygen binding-1
9. Week	Oxygen binding of hemoglobin-2
10. Week	Enzyme structure and function
11. Week	Enzyme kinetics
12. Week	Enzyme inhibition
13. Week	Regulation of enzyme synthesis and activity -1
14. Week	Regulation of enzyme synthesis and activity -2

15. Week	<b>Final Exam</b>
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**Student Workload Table**

Events	Number	Time	Total Workload
Lesson	14	2	28
Laboratory			
Application			
Fieldwork			
Out-of-Class Study Time (Freelancing/Group Work/Pre-Study)	12	3	36
Presentation (Shooting videos/Preparing posters/Making Oral Presentations/Focus Group Interviews/Conducting Surveys/Observation and Report Writing)	1	1	2
Seminar Preparation	1	1	2
Project			
Case Study	1	5	5
Role Playing, Dramatizing			
Writing an article-Criticizing			
Mid-term exams			
Final exams	1	2	2
<b>Total workload (hours) / 25(s)</b>	75 seconds /25 seconds =3		
<b>Ders ACT</b>	<b>3</b>		

**Evaluation System**

Semester Studies	Number	Contribution
Midterm Exam		
Quiz		
Laboratory		
Application		
Fieldwork		
Course-Specific Internship (If Available)		
Assignments		
Presentation and Seminar	2	%40
Projects		
Other	1	%10
<b>Total of Semester Studies</b>		%50
Final Work		
Finale	1	%50
Homework		
Application		
Laboratory		
<b>Total of Final Studies</b>		%50
The Contribution of Semester Studies to the Success Grade		%50
The Contribution of the Final Exam to the Success Grade		%50
<b>Sum of Success Grade</b>		<b>100</b>

**THE RELATIONSHIP BETWEEN COURSE LEARNING OUTCOMES AND PROGRAM COMPETENCIES**

No	PROGRAM QUALIFICATIONS	Learning Outcomes			
		ÖÇ1	ÖÇ2	ÖÇ3	ÖÇ4
1	Have up-to-date knowledge at the level of expertise in the field of medical biochemistry based on undergraduate level competencies, develop and deepen them.	5	5	5	5
2	Has knowledge about information technologies, technical equipment and devices and instruments specific to the field at the level required by the field of Medical Biochemistry	2	2	3	3
3	Integrates the knowledge in the field of Medical Biochemistry with information from different disciplines, interprets it to create new information, analyzes and synthesizes using different research methods and proposes solutions.	4	4	4	4
4	He writes the report of his research.	3	3	3	3
5	Plans and conducts experimental research.	4	4	4	4
6	Constructs issues that require expertise in the field of Medical Biochemistry, proposes solutions, solves problems, evaluates the results obtained and applies them when necessary.	4	4	5	5
7	Conducts scientific, clinical and/or descriptive research/presentation/publication on priority issues related to the field of Medical Biochemistry and public health.	5	5	5	5
8	Critically evaluates the information related to the field of Medical Biochemistry and directs his/her learning.	5	5	5	5
9	Applies the principles of professional development and lifelong learning related to the field of Medical Biochemistry in the studies it performs.	5	5	5	5
10	Discuss and share his/her knowledge, current developments and his/her own studies in the field of Medical Biochemistry in a systematic way in written, oral and visual forms with groups in or outside the same field.	5	5	5	5
11	Critically examines the social relations in the professional and professional environment and the norms that guide these relations and does what is necessary to improve them.	5	5	5	5
12	Observes social, scientific and ethical values in the stages of collecting, recording, interpreting and announcing data related to the field of Medical Biochemistry and teaches these values.	5	5	5	5
13	Evaluates current developments in the field of Medical Biochemistry in line with national values and country realities, including the child and family, which are the basic units of society.	5	5	5	5
14	Knows the importance of ethical principles and ethical committees for the individual and society, and behaves ethically.	4	4	4	4
15	Develops strategies, policies and implementation plans on issues related to the field of Medical Biochemistry and evaluates the results obtained within the framework of quality processes.	5	5	5	5
<b>Qualification level: 1: Low, 2: Low/Medium, 3: Medium, 4: High, 5: Excellent</b>					