Course Name	Code	Semester	Theory (hrs/week)	Application (hrs/week)	Laboratory (hrs/week)	ECTS
Nucleic acid Metabolism	BIK510	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	The aim of the course is to examine the synthesis and degradation of purine and pyrimidine nucleotides, DNA and RNA structure, replication, transcription and protein synthesis reactions.					
Learning outcomes of the course	1. Know the structural, chemical properties and functions of nucleotides. 2. Explain the structural, chemical properties of DNA and RNA. 3. Summarize the regulation of DNA in eukaryotes. 4. Explain purine metabolism. 5. Summarizes the metabolism of pyrimidine. 6. Know RNA synthesis and details. 7. Know protein biosynthesis.					
Resources	1. Nelson DL, Cox MM. Lehninger Principles of Biochemistry, W.H. Freeman; 7th Ed., 2017 2. Berg JM, Tymocko JL, Gatto GJ jr, Stryer L. Biochemistry, W.H. Freeman; 9h ed, 2019. 3. Gürdöl F, Ademoğlu E. Biochemistry. Nobel Medical Bookstores, 2013 4. Bhagavan NV. Ha CH. Essentials of Medical Biochemistry With Clinical Cases, Academic Press, 2nd Ed., 2015. 5. Rodwell VW, Bender DA, Botham KM, kennelly PJ, Weil PA. Harper's Illustrated Biochemistry, McGraw-Hill Education, 31th Ed. 2018					

Weekly Course Topics:

WEEKS	TOPICS TO BE DISCUSSED
1. Week	Structure and functions of nucleotides
2. Week	Structure and functions of nucleic acids
3. Week	Regulation of DNA in eukaryotes
4. Week	Purine nucleotide synthesis
5. Week	Purine nucleotide degradation
6. Week	Pyrimidine nucleotide synthesis and degradation
7. Week	Prokaryotic Replication
8. Week	Eukaryotic replication and telomerase
9. Week	RNA synthesis
10. Week	RNA processing
11. Week	Genetic code
12. Week	Mutations
13. Week	Aminoaçyl-tRNA
14. Week	Protein biosynthesis

15. Week	**Final Exam**

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
Total workload (hours) / 25(s)	75 seconds /25 seconds =3		
Ders ACT	**3**		

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
Total of Semester Studies		%50
Final Work		
Finale	1	%50
Homework		
Application		
Laboratory		
Total of Final Studies		%50
The Contribution of Semester Studies to the Success Grade		%50
The Contribution of the Final Exam to the Success Grade		%50
Sum of Success Grade		**100**

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
Qualification level: 1: Low, 2: Low/Medium, 3: Medium, 4: High, 5: Excellent					