Course Name	Code	Semester	Theory (Hrs/week)	Application (Hrs/week)	Laboratory (Hrs/week)	ECTS
Porphyrin Structure and Metabolism	BIK516	Spring	1	0	0	3
Prerequisites	No					
Course language	Turkish					
Course Type	Optional					
Learning and teaching techniques of the course	Lecture, interactive, brainstorming					
Course instructor(s)	Prof. Sevgi ESKİOCAK, MD					
Course objectives	The aim of this course is to examine the structure of porphyrin, types of porphyrins, proteins containing porphyrins, heme synthesis-degradation, disorders in porphyrin synthesis and jaundice.					
Learning outcomes of the course	1. Recognize the structure of porphyrins, enumerate the nomenclature principles, classify porphyrins, 2. Explain the biochemical properties of porphyrins, explain the principles of photodynamic therapy 3. Summarize porphyrin synthesis, explain porphyrin synthesis disorders, list the tests used in porphyria 4. Summarize porphyrin degradation, classify hyperbilirubinemias, summarize urine bilirubin and urobilinogen measurements					
Resources	1. Rifai N, Horvath AR, Wittwer CT. Tietz Textbook of Clinical Chemistry and Molecular Diagnostics, 6th Ed, Saunders, 2018. 2. McPherson RA, Pincus MR. Henry's Clinical Diagnosis and Management by Laboratory Methods: Expert Consult, 23th, Elsevier, 2017. 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 6. Kaushansky K, Prchal JT, Press OP, Lichtman MA, Levi M, Burns LJ, Caligiuri MA. Williams Hematology, McGraw-Hill Education, 9th Ed, 2015.					

Weekly Course Topics:

WEEKS	TOPICS TO BE DISCUSSED
1. Week	Introduction, course flow, course resources and course rules Structure and classification of porphyrins
2. Week	Numbering system in porphyrins
3. Week	Biochemical properties of porphyrins
4. Week	Principles of photodynamic therapy
5. Week	Porfirin sentezi
6. Week	Disorders of porphyrin synthesis
7. Week	**Midterm Exam**
8. Week	Destruction of porphyrins

9. Week	Destruction of porphyrins
10. Week	Chemical and physical properties of porphyrin degradation products
11. Week	**Seminar presentation**
12. Week	Classification of hyperbilirubinemias and mechanisms
13. Week	Laboratory and case discussion in hyperbilirubinemia
14. Week	Measurements of bilirubin in urine, urobilinogen
15. Week	**Final Exam**

Student Workload Table

Events	Number	Time	Total Workload
Lesson	13	1	13
Laboratory			
Application			
Fieldwork			
Out-of-Class Study Time (Freelancing/Group Work/Pre-Study)	12	4	48
Presentation (Shooting videos/Preparing posters/Making Oral Presentations/Focus Group Interviews/Conducting Surveys/Observation and Report Writing)	1	3	3
Seminar Preparation	1	3	3
Project			
Case Study	1	5	5
Role Playing, Dramatizing			
Writing an article-Criticizing			
Mid-term exams	1	1	1
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	1	%100
Quiz		
Laboratory		
Application		
Fieldwork		
Course-Specific Internship (If Available)		
Assignments		
Presentation and Seminar		
Projects		
Other		
Total of Semester Studies	1	100
Final Work		
Finale	1	%70
Homework	1	%30

Application		
Laboratory		
Total of Final Studies	2	100
The Contribution of Semester Studies to the Success Grade		%30
The Contribution of the Final Exam to the Success Grade		%70
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 molecular medicine 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 Molecular Medicine	2	2	3	3
3	Integrates the knowledge in the field of Molecular Medicine with the information from different disciplines, interprets it to create new information, analyzes and synthesizes using different research methods and offers 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 on issues that require expertise in the field of Molecular Medicine, 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 Molecular Medicine and public health.	5	5	5	5
8	Evaluates the information related to the field of Molecular Medicine with a critical approach and directs learning.	5	5	5	5
9	Applies the principles of professional development and lifelong learning related to the field of Molecular Medicine in the studies they carry out.	5	5	5	5
10	Discuss and share his/her knowledge, current developments and his/her own studies in the field of Molecular Medicine 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 and teaches social, scientific and ethical values in the stages of collecting, recording, interpreting and announcing data related to the field of Molecular Medicine.	5	5	5	5
13	Evaluates current developments in the field of Molecular Medicine 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 Molecular Medicine 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					