School of Engineering and Natural Sciences / Biomedical Engineering (English)

2024 - 2025 Academic Year

MEDICAL BIOLOGY LAB

Syllabus

Course Description					
Name	**Code**	**Semester**	**T+A Hour**	**Credit**	**ECTS**
MEDICAL BIOLOGY LAB	BME1110772	Fall Semester	0+2	1	2

Prerequisites Courses	
Recommended Elective Courses	
Language of Instruction	English
Course Level	First Cycle (Bachelor's Degree)
Course Type	Required
Course Coordinator	Assoc.Prof. Özge ŞENSOY
Name of Lecturer(s)	Assoc.Prof. Özge ŞENSOY, Res.Assist. Birgün ÖZÇOLAK ASLAN, Res.Assist. Semih MACİT
Assistant(s)	Merve Birgun Ozcolak
Aim	Medical Biology course provides a molecular-level understanding to the mechanism of biological processes occurring under physiological and disease conditions.
Course Content	This course contains; Lab orientation,Blood Type Testing,Isotonic, Hypertonic, Hypotonic Solutions,Bradford Protein Assay,Polymerase Chain Reaction (PCR),Bacterial Colonies,Thawing Frozen Cells and Culturing of Cells,Submission of the Take Home Final Project and Oral Defense of the Final Project.

Course Learning Outcomes	**Teaching Methods**	**Assessment Methods**
Testing basic biology related problems and making related experiments	10, 12, 14, 16, 17, 20, 37, 5	G
Organize and discuss the results of experiments performed. Also, the results can be documented using the student"s his/her own ideas.	10, 13, 14, 17, 19, 20, 21, 9	F, G
By using the knowledge one can analyze current biological problems related cellular biology.	10, 12, 13, 19, 20, 21	

Teaching Methods	10: Discussion Method, 12: Problem Solving Method, 13: Case Study Method, 14: Self Study Method, 16: Question - Answer Technique, 17: Experimental Technique, 19: Brainstorming Technique, 20: Reverse Brainstorming Technique, 21: Simulation Technique, 37: Computer-Internet Supported Instruction, 5: Cooperative Learning, 9: Lecture Method
Assessment Methods	F: Project Task, G: Quiz

Lecture Schedule

Sequence	**Topics**	**Preliminary Preparation**
1	Lab orientation	
2	Blood Type Testing	
3	Isotonic, Hypertonic, Hypotonic Solutions	
4	Bradford Protein Assay	
5	Polymerase Chain Reaction (PCR)	
6	Bacterial Colonies	
7	Thawing Frozen Cells and Culturing of Cells	
8	Submission of the Take Home Final Project and Oral Defense of the Final Project	

Evaluation Methods	**Weight(%)**
Midterm Exam	30
General Exam	70

Resources
Molecular Biology of the Cell, 5 th Edition, Alberts, Johnson, Lewis, Raff, Roberts, Walter Sunum, hands-on1) Molecular Biology of the Cell, 5 th Edition, Alberts, Johnson, Lewis, Raff, Roberts, Walter 2) Essential Cell Biology, 3 rd Edition, Alberts, Bray, Hopkin, Johnson, Johnson, Lewis, Raff, Roberts