

Alanya Alaaddin Keykubat University | Rafet Kayış Faculty of Engineering
Genetic and Bioengineering Department
2023-2024 Fall Semester

Syllabus

Code/Name	GBM 203L / CELL BIOLOGY LAB
Type	Required
Credit/ECTS	2/2
Hour per Week	2
Level/Year	Undergraduate/2
Semester	Fall
Classroom	FFF L114
Content	This is a course that explains the systems related to the transfer of theoretical knowledge learned in other Genetics and Bioengineering courses into practice. In this context, the necessary materials and processes in laboratory applications will be explained, and students will be able to both design and implement them. The basic chemical solution preparation/calculation/steps, animal cell culture techniques, cell counting via hemocytometer, simple staining, examination of buccal Epithelial cells and some tissue preparates, plant specimens will be explained in detail and with their applications.
Prerequisites	GBM 101 BIOLOGY I, GBM 101L BIOLOGY I LAB, GBM 106 BIOLOGY II, GBM 106LBIOLOGY II LAB
Textbooks	Primary Laboratory textbook prepared by the faculty members of our department Supplementary Research article published in such library as PUBMED, ELSEVIER
Objectives	<ul style="list-style-type: none">• To teach both the theoretical background and cell biology laboratory application principles of the techniques necessary for the processing, modification and artificial transfer of genetic information from cell to cell• To analyze and conduct experimental data• To prepare weekly laboratory report with Genetic and Bioengineering approaches
Course Outcomes	In this course students should be able to: CO1. To know laboratory safety rules in Cell biology laboratory applications. CO2. To conduct various experiments as mentioned in weekly schedule topics. CO3. To analyze experimental data, interpret and report experimental results. CO4. To justify the accuracy of experimental results by evaluating them through literature review.

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Weekly Schedule of Topics

W	Topic	Laboratory Experiments Discussions
1		Introduction, organizing study groups, General Information
2		Chemical solution preparation techniques
3		Principle and utility of microscopy
4		Introduction to animal cell culture, basic techniques
5		Introduction to animal cell culture, basic techniques (Continue)
6		Introduction to animal cell culture, basic techniques (Cell Counting with Hemocytometer) (Continue)
7		Simple Staining (gram staining)
8		Examination of Buccal Epithelial Cell and Mammalian Cell Culture Samples Under the Microscope
9		Examining tissue preparations
10		Examining tissue preparations (Continued)
11		Examination of plant specimens under the microscope,
12		(Onion, spinach.)
13		Estimation of amount of chlorophyll present in the leaf tissue
14		General review

Professional Contribution Be able to conduct experiment with analyzing data and comparing the results obtained from experiment with literature, and to write weekly report with group member

Contribution to Program Outcomes*

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	0	0	0	0	5	4	2	0	0	0	0
CO2	3	4	0	3	5	5	5	0	2	0	0
CO3	3	3	0	4	5	4	5	4	3	0	0
CO4	2	3	0	4	5	5	5	4	3	0	0

* Contribution Level | 0: None | 1: Very Low | 2: Low | 3: Medium | 4: High | 5: Very High

Special Conditions

- Students work in groups.
- Experimental studies are reported using MS Word or PDF format.

Requirements

Course Policy

- Students should be in the class or laboratory on time.
- Both student and responsible lecturer should communicate in English
- Students should prepare themselves by reading lab notes and articles sent.
- Students should be prepared by reading the assigned articles and lab notes on a weekly basis.
- At least **80%** attendance is required, otherwise a grade of **DZ** will be assigned.

Cheating & Plagiarism

- Copying or letting someone copy anyone work on exams, assignments, or reports is cheating.
- Cutting and pasting text, figures and tables from web sources, chatGPT or any other electronic source is plagiarism.

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• The consequence of academic dishonesty is to receive a grade of **FF** for the course.

Evaluation	Laboratory (7×10 pts.)	10%
	Midterm Exam	32%
	Quiz exam	10%
	<u>Final exam</u>	<u>48%</u>
	Total	100%

Rubric	For each report, a rubric will be announced at first week. The rubric has 4 main parts for the grading: aim of the study, material&methods, results and discussion parts.
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Instructor			
Name/Surname	Sinem Yilmaz	Email	sinem.yilmaz@alanya.edu.tr
Room	210	Office Hours	Thursday 10:30-12:30 and 13:30-15:00

Prepared by Sinem Yilmaz on June 4th, 2024