

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

Syllabus

Code/Name	GBM 101L / Biology Laboratory I
Type	Required
Credit/ECTS	2/2
Hour per Week	2 (0+0+2)
Level/Year	Undergraduate/1
Semester	Fall
Classroom	Chemistry lab
Content	This course continues from GBM 101 Biology I. Experiments on basic fields of biology laboratory safety, microscopy, solution preparation, osmosis, and fermentation. Analysis of experimental data, plotting, and presentation of results in written reports.
Prerequisites	-
Textbooks	<i>Primary</i>
Objectives	<ul style="list-style-type: none"> • To operate instruments to conduct biological experiments • To analyze and assess experimental data effectively • To prepare laboratory reports with a professional engineering approach
Course Outcomes	In this course you will be able to: C01 Experiment with various processes C02 Deduce how the theory applies to the physical world C03 Analyze experimental data C04 Write professional laboratory reports C05 Distinguish measurement methods C06 Justify the accuracy of experimental results

Weekly Schedule of Topics

W	Topic	Laboratory Experiments Discussions
1	Syllabus, orientation, and report writing	Discussion
2	Basic laboratory glassware and equipment laboratory safety	Examining of glassware laboratory
3	Microscope	E letter, colorful threads and onion cells Laboratory
4	Microscope (cont.)	E letter, colorful threads and onion cells Laboratory
5	Microscope and staining	Onion, dirty water, blood, check swap, leaves Laboratory
6	Microscope and staining (cont.)	Onion, dirty water, blood, check swap, leaves Laboratory
7	Laboratory solution preparation	Utilizing of scale and measurement of chemicals Laboratory
8	Midterm	-
9	Acids and bases	pH-indicator strips, pH meter Laboratory
10	Acids and bases (cont.)	pH-indicator strips, pH meter Laboratory
11	Osmosis	Gummy bear, red onion, dialysis membrane Laboratory

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

12	Osmosis (cont.)	Gummy bear, red onion, dialysis membrane Laboratory
13	Fermentation and photosynthesis	Cherry juice and yeast, spinach, and baking soda Laboratory
14	Fermentation and photosynthesis (cont.)	Cherry juice and yeast, spinach, and baking soda Laboratory
15	Microscope	Mice and human prepared slides Laboratory
16	Final	-

Professional Contribution Ability to design experiments, acquire data, evaluate data, compare, and interpret experimental results with analytical and/or computational models

Contribution to Program Outcomes*

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	5	5	5	5	5	5	5	5	3	5	3
CO2	5	5	5	5	5	5	5	5	5	5	4
CO3	2	5	2	5	2	5	5	5	5	5	3
CO4	2	5	2	5	2	5	5	5	5	5	3
CO5	3	4	5	5	5	3	3	5	3	4	3
CO6	3	4	5	5	5	5	4	5	5	4	3

* 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.

Requirements Basic knowledge of MS Word and Excell

Course Policy

- Be in the class or laboratory on time.
- English should always be used to communicate with one another.
- Please be prepared by reviewing the assigned readings and laboratory notes.
- At least **80%** attendance is required, otherwise a grade of **DZ** will be assigned.

Cheating & Plagiarism

- Copying or letting someone copy your work on exams, assignments, or reports is cheating.
- Cutting and pasting text, figures and tables from web sources or any other electronic source is plagiarism.
- The consequence of academic dishonesty is to receive a grade of **FF** for the course.

Evaluation

Midterm Exam	25%
Report	30%
Final Exam	45%
Total	100%

Rubric A rubric will be announced before the experimental sessions. The rubric has 3 main parts for the grading: writing performance, technical assessment.

Instructor

Name/Surname	Şurhan GÖL	Email	surhan.gol@alanya.edu.tr
Room	131	Office Hours	Tuesday 14:30-15:15 and Wednesday 10:30-11:15/15:30-16:15

Prepared by Şurhan GÖL on June 2nd, 2024