

King Fahd University of Petroleum & Minerals
College of Chemicals and Materials, Bioengineering Department
BIOE 202: Biology for Engineers Lab (0-3-1)
Syllabus - Term 25A

Catalog Course Description: Utilization of the microscope, homeostasis of living organism, macromolecules identification and microscopic cell component observation, mechanisms of diffusion and enzymes reactions, principle of cell division, heredity and genomic material isolation, separation and visualization

Course Prerequisite: N/A

Co-requisite: BIOE 201

Textbook: James Perry, and Morton and Joy B Perry Laboratory Manuals for Majors General Biology, Publisher: Thomson Learning/Thomson Brooks/Cole USA Year: 2009 Book
Website: <http://www.biology.brookscole.com>

Instructors:

- Ms. Nawal AlShahrany / B7-115 / Phone: 5257 / nawal.shahrany@kfupm.edu.sa
- Dr. Aasif Helal / B15 / Phone: 7532 / aasifh@kfupm.edu.sa

Office Hours: Ms. Nawal AlShahrany UTR 10:00 A.M.-11:00 A.M and/or by appointment.
Dr. Aasif Helal by appointment

Course Learning Outcomes:

1. Identify cellular components and cell macromolecules.
2. Explain the mechanisms of hemostasis, respiration, and the principle of diffusion.
3. Explain the principles of heredity and basic Mendelian genetics.
4. Conduct BIOE experiments using appropriate measurement techniques.
5. Apply analytical/statistical procedures to analyze and validate experimental data.
6. Interpret experimental results and conclude using engineering judgment.

Course Topics

Week#	Topic
1	NO LAB
2	Microscopy
3	Homeostasis
4	Macromolecules
5	NO LAB
6	Structure and Function of Living Cells
7	Diffusion, Osmosis and the Function Significance of Biological Membranes
8	Photosynthesis
9	Enzymes: Catalysts of Life
10	Respiration: Energy Conversion
11	Nucleic Acids Extraction (DNA)
12	Mitosis and Meiosis
13	Heredity
14	Bioinformatics
15	LAB EXAM

The Grading Policy:

Attendance and Participation	5%	
Quizzes	25%	
Lab Reports	40%	
Final Exam	30%	(Week 15)

Important Notes:

- Each student must be vigilant about academic integrity at all times.
- Only official excuses obtained from the Deanship of Students Affairs are accepted.
- If a student reaches more than 20% of unexcused absence (3 lab sessions), a DN grade will be issued.
- For every unexcused absence, absent will be recorded.
- Excuses for officially authorized absences must be presented no later than one week following the resumption of class attendance.
- No makeup will be accommodated for missed quizzes or exams.
- All lab reports must be submitted to the instructor at the end of each lab session. Any report not submitted on time will result in a grade of zero for that lab.
- A student caught cheating in any of the assignments will get ZERO in all assignments, and other proper action will be taken that may eventually lead to the transfer of the student to student affairs.
- The instructor reserves the right to modify the course outline and policies mentioned in this syllabus at any time during the semester.
- Refer to the registrar website for the academic calendar and important deadlines:
<https://registrar.kfupm.edu.sa/academic-calendar/current-semester/>