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

Syllabus

Code/Name	GBM 203 / Cell Biology
Type	Required
Credit/ECTS	5/5
Hour per Week	3 (3+0+0)
Level/Year	Undergraduate/2
Semester	Fall
Classroom	D305
Content	The focus of Cell Biology is the study of the structure and function of the cell. In this course we will focus on eukaryotic cell biology and will cover topics such as membrane structure and composition, transmembrane transport, and vesicle trafficking; the cytoskeleton and cell movement; the breakdown of macromolecules and generation of energy; and the integration of cells into tissues. We will also discuss important cellular processes such as cell cycle regulation, signal transduction, apoptosis (programmed cell death), and cancer cell biology.
Prerequisites	---------
Textbooks	***Primary*** Essential Cell Biology, Alberts et al., fifth edition. ISBN: 978-0-393-67953-3 ***Supplementary*** Molecular Biology of the Cell, Alberts et al., sixth ed. ISBN: 978-0- 8153-4432-2
Objectives	• A study of the internal organization of the eukaryotic cell, organelle • Membrane function, cell-cell signaling, cell movement, • Cell adhesion, the cytoskeleton and the extracellular matrix.
Course Outcomes	In this course you will be able to: CO1 Describe the fundamental principles of cellular biology. CO2 Apply these principles to biological questions of today. CO3 Develop a deeper understanding of cell structure and how it relates to cell functions. CO4 Explain cell movement and how it is accomplished. CO5 Explain how cells grow, divide, and die and how these important processes are regulated. CO6 Describe cell signaling and how it regulates cellular functions, and how its dysregulation leads to cancer and other diseases.

Weekly Schedule of Topics

W	Topic
1	Introduction to cell biology
2	Microscopy
3	Cell fractionation and centrifugation
4	Biological molecules
5	Bioenergetics
6	Cell structure
7	Membrane structure
8	Plasma membrane physiology
9	Cytoplasmic physiology

10	Intercellular and extracellular interactions
11	Cell Cycle
12	Stem cells
13	Cancer
14	Current issues in cell biology

Professional Contribution	To have knowledge that will allow working in companies or research laboratories working on cell biology, to be able to design research and projects on cell biology

Contribution to Program Outcomes*

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	2	2	2	4	2	2	2	2	2	3	4
CO2	2	1	3	3	3	4	3	3	3	0	5
CO3	2	3	2	4	3	4	2	1	2	2	4
CO4	3	3	3	2	3	3	1	2	3	2	4
CO5	3	1	3	3	3	3	1	3	1	2	3
CO6	2	2	2	1	3	3	2	2	2	2	2

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

Special Conditions	• Students work in groups for project and presentations.
Requirements	Basic knowledge of Biology I and II
Course Policy	• Be in the class on time. • English should always be used to communicate with one another. • At least **70%** 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	Mid-term Exam 40% Final Exam 60% Total 100%
Rubric	----------

Instructor

Name/Surname	Ayşe Erdoğan	Email	ayse.erdogan@alanya.edu.tr
Room	330	Office Hours	W 13:30-15:30

Prepared by Dr. Ayşe Erdoğan-17.10.2024