

## **MBG201: CELL BIOLOGY I SYLLABUS-FALL 2024**

**COURSE HOURS:** Wednesdays 10:45-12:30 @ K106 and Thursdays 09:45-10:30 @ K106

Office Hours: Wednesdays 09:00-10:00

Teams Course: **2024-MBG201**

Teams Code: **f68htgf**

**INSTRUCTOR:** Gülistan MEŞE ÖZÇİVİCİ

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### **COURSE DESCRIPTION AND OBJECTIVES:**

This course aims to cover the universal feature of cells and tree of life, cell visualization methods, organization and function of the cell membrane and the role of cellular organelles. In addition to give students a basic understanding of fundamental processes within all cells, the course is intended to promote critical thinking and the ability of using the acquired knowledge in cell biology related research.

- To ensure that students are able to comprehend the working principles of the cellular organelles.
- To enable students to illustrate the relation between the cell biology subjects with the topics covered in molecular biology and genetics.
- To enable students to use their cell biology knowledge when evaluating the theoretical and experimental scientific studies.

### **COURSE MATERIALS:**

***Molecular Biology of the Cell 7<sup>th</sup> Edition*** by Bruce Alberts, Alexander Johnson, Julian Lewis and Martin Raff

***The Cell: A Molecular Approach***, Fifth Edition by Geoffrey M. Cooper and Robert E. Hausman

**Molecular Cell Biology** by Lodish, Berk, Kaiser

### **TENTATIVE SCHEDULE:**

1. Introduction
2. Cells, genomes and diversity of life
3. Visualizing cells and their molecules
4. Membrane structure
5. Membrane transport of small molecules and electrical properties of membranes
6. Intracellular compartments and protein sorting
  - a. Compartmentalization
  - b. The transport of molecules between the nucleus and the cytosol
  - c. The transport of proteins into mitochondria and chloroplast

- d. Peroxisomes
- e. The ER
- 7. Intracellular Membrane Traffic
  - a. Transport from the ER Through the Golgi apparatus
  - b. Transport from the trans-Golgi network to lysosomes
  - c. Transport into the cell from the plasma membrane- Endocytosis
  - d. Transport from the trans-Golgi network to the cell exterior: Exocytosis
- 8. Energy Conversion: Mitochondria and Chloroplast

### **Attendance obligation**

### **IZMIR INSTITUTE OF TECHNOLOGY UNDERGRADUATE EDUCATION REGULATION**

ARTICLE 9 – (1) It is mandatory for students to attend classes, practices, exams and other studies. The attendance status of the students is monitored and evaluated by the relevant instructor.

**EVALUATIONS:** There will be two midterm exams and one final exam. The dates for these exams are given below. The exams will be in an essay format, and closed-books/notes. Makeup exams will only be allowed if you have a valid and documented reason. These makeup exams will be held after the final exam and **will be a comprehensive exam**. If there is an emergency, you must contact the instructor right away, or you will get a score of zero for the missed exam.

There will be quizzes throughout the semester and there are no makeup options for quizzes. However, if you have a valid documented reason, the missed quiz will not count towards your final grade.

The exams weights are as follows:

1<sup>st</sup> Midterm: 24% (**October 30<sup>st</sup> 2024**)

2<sup>nd</sup> Midterm: 24% (**December 4<sup>th</sup> 2024**)

Final (comprehensive exam): 27% (**January 8<sup>th</sup> 2025**)

Quizzes: %10

Assignment /Oral presentation: %10

Participation: %5

If you have a documented disability, please contact the campus office for disabled students. The instructor will work in collaboration with the office to provide accommodations for course materials in an alternative format.

### **Electronic Media/Device Use:**

Use of electronic devices for recording the lectures and sharing the course materials including lecture notes on any social or electronic media among groups or in public is prohibited. Any violation of this may earn you a zero on an assignment or exam or even a more extreme penalty at the discretion of the instructor.

No electronic devices, including smart watches, are allowed during quizzes and exams.