

**Cell Biology (Theory)
2021-2022**

Course Title	Cell Biology		
Course Code		No. of Credits	3
Department	Medical Laboratory Analysis (MLA)	College	Science
Pre-requisites Course Code		Co-requisites Course Code	
Course Coordinator(s)	Dr. Kamal M. Saeed	Office NO.	
Email	Kamal.zangana@sulicihan.edu.krd	IP No.	
Other Course Teacher(s)/Tutor(s)			
Class Hours			
Contact Hours	Per your request		
Course Type	Departmental course		
Offer in Academic Year			

COURSE DESCRIPTION

Cellular membranes and organelles: structure, function, and biosynthesis; cell growth and oncogenic transformation; transport, receptors, and cell signaling; the cytoskeleton, extracellular matrix, and cell motions; chromatin structure and RNA synthesis.

In this course we can discover how existence exists on the mobile and molecular level. We will speak how proteins and different macromolecules are regulated through mobile organization. This will lead us to an expertise how the cells alter conversation and mobile organization. Proteins. What determines the shapes of proteins and the way is that this associated with their function? What are the jobs of proteins in cells and the way are they regulated? How can misfolding of proteins contribute to disease?

COURSE OBJECTIVE:

The awareness of Cell Biology is the examine of the shape and feature of the mobile. In this course, we are able to awareness on Eukaryotic mobile biology and could cowl subjects including membrane shape and composition, transport, and trafficking; the cytoskeleton and mobile movement; the breakdown of macromolecules and era of energy; and the combination of cells into tissues. We may also cowl crucial cell procedures including mobile cycle regulation, sign transduction, apoptosis (programmed mobile death), and most cancers mobile biology. Throughout the semester we are able to strive to narrate defects in those numerous cell procedures to human sicknesses to assist advantage a better information of what occurs whilst cells don't paintings as they should.

COURSE LEARNING OUTCOMES

On successful completion of this semester the learner will be able to:

- 1) Describe the essential principal's mobile biology.
- 2) Apply those principals to present day organic questions of today.
- 3) Develop a deeper know-how of mobile shape and the way it pertains to mobile functions.
- 4) Understand mobile motion and the way it's miles accomplished.
- 5) Understand how cells grow, divide, and die and the way those critical tactics are regulated.
- 6) Understand mobile signaling and the way it regulates mobile functions. Also how its dysregulation ends in most cancers and different diseases.

COURSE TEACHING AND LEARNING ACTIVITIES

1. Class Materials (syllabus and handouts) will be available to the students prior to the lecture time.
2. Any other information relevant to the class will be announced to the students via Google classroom.
3. Electronic tools can make classes more efficient.
4. PowerPoint is regularly used to deliver lectures in classroom.

Incorporating visual image or brief video into PowerPoint slideshows to make the lectures more interesting.

COURSE ASSESSMENT TOOLS

Assessment Method	DESCRIPTION	Assessment Weight
Quizzes	Students will take 3 <u>schedule</u> quizzes over the course and the highest 2 quiz marks will be counted toward the final grade. Any change in the schedule will be communicated in class as well as via email.	2%
Presentations	Together with two or three partners, you will be asked to give 10-15 minute presentation in class on a selected topic of microbiology. I will encourage students to involve in active learning strategy i.e. students will start to join	

	the teacher to explain the required lecture. You will need to answer questions concerning your presentation and submit questions about presentations given by other students.	1%
Test	During the course schedule, students will take two tests before midterm and final examination. The format for the exams will include multiple-choice questions, matching, fill-in-the-blank and short answers.	2%
Midterm Exam	A midterm exam is an exam given near the middle of an academic grading term, or near the middle of any given semester. The exam is supervised by a committee of faculty members.	25%
Final Exam	Final examination will be held at the end of a course of study. The format for the exams will include multiple-choice questions, matching, fill-in-the-blank and short answers. Exams will focus on materials that were discussed in the weeks immediately preceding the exam.	30%

ESSENTIAL READINGS: (Journals, textbooks, website addresses etc.)

1. Molecular Biology of the Cell Sixth Edition: Bruce Alberts (Author), Alexander Johnson (Author), Julian Lewis (Author), David Morgan (Author), Martin Raff (Author), Keith Roberts (Author), Peter Walter (Author).
2. Essential Cell Biology Fifth Edition: Bruce Alberts (Author), Karen Hopkin (Author), Alexander Johnson (Author), David Morgan (Author), Martin Raff (Author), Keith Roberts (Author), Peter Walter (Author)

GUIDELINES FOR SUCCESS

1. Come prepared for class (bring all materials to class each day).
2. Pay attention and resist distractions.
3. Be on time.
4. Have a good Attitude.
5. No eating or drinking in class (especially during labs).
6. Be in class every day.
7. Form relationships with others in the class.
8. Be open and honest with the instructor about difficulties you may be having.
9. Be consistent in your daily work and effort.
10. Work both independently and in groups of your peers, who can help you understand the course material.

Course Schedule (2021-2022)

Week	Lec	TOPICS	Assessments
W1	1	Introduction to Cell Biology	
W2	2	Protein Structure and Function	
W3	3	Bio-membranes & Cell Architecture	
W4	4	Membrane Trafficking	

W5	5	Cellular organelles	Quiz 1
W6	6	Cellular Energetics	
W7	7	Osmolarity	
W8	8	Cell Signaling 1	
W9	9	Cell signaling 2	Quiz 2
W10	10	Cell cycle and division	
W11	11	Signaling Continued/ Cell Birth, Lineage, and Death	
W12	2	Introduction to Genetics	Quiz 3
W13	3	DNA to Protein & human genetic	
W14	14	Revision	