



Course Syllabus: Introductory Cell Biology - B 102

Division	Biological and Environmental Sciences & Engineering Division
Course Number	B 102
Course Title	Introductory Cell Biology
Academic Semester	Fall
Academic Year	2018/2019
Semester Start Date	08/26/2018
Semester End Date	12/11/2018
Class Schedule (Days & Time)	11:30 AM - 01:00 PM Tue , 05:30 PM - 07:00 PM Sun

Instructor(s)				
Name	Email	Phone	Office Location	Office Hours
Michael Florian Mette	florian.mette@kaust.edu.sa	+966128082625		Anytime during working hours upon appointment, please send an email.

Teaching Assistant(s)	
Name	Email

Course Information	
Comprehensive Course Description	<p>This class targets students with entry-level background in cell biology. It serves as refreshment as well as a boost course for those aiming to major in all disciplines in biology. The class starts with defining the main terminology and fundamental principles of cell biology, it then recapitulates the different building blocks of cells from molecular to organelle level. Using a combination of upfront classroom teaching and problem-based learning, the principles of signaling, metabolism and energy homeostasis are discussed in the context of cellular organization.</p> <p>Selected examples of different aspects of cell biology are examined to provide students with the central scientific concepts of this field that are essential for the advanced Cell Biology courses B213 and B224. These concepts are also important foundation to several other courses in BESE. A major aim of the class is to demonstrate students how deductive processes are applied in the life sciences for the gain of new knowledge.</p>
Course Description from Program Guide	<p>This class targets students with entry-level background in cell biology. It serves as refreshment as well as boost course for those aiming to major in all disciplines in biology. The class starts with defining the main terminology and fundamental principles of cell biology. It then recapitulates the different building blocks of cells from molecular to organelle level. Using a combination of upfront classroom teaching and problem-based learning, the principles of signaling, metabolism and energy homeostasis are discussed in the context of cellular organization.</p>
Goals and Objectives	This course aims to provide students with a solid theoretical foundation in basic cell biology in order to prepare them for more advanced classes.
Required Knowledge	Basic understanding of general science
Reference Texts	<p>Textbook: Essential Cell Biology 4th ed. 2013; Authors: Bruce Alberts, Dennis Bray, Karen Hopkin, Alexander D Johnson, Julian Lewis, Martin Raff, Keith Roberts, Peter Walter; Publisher: Garland Science, ISBN: 9780815344544;</p> <p>Chapter numbers in the course schedule refer to this book.</p>

Method of evaluation	25.00% - Active participation 75.00% - Tests
Nature of the assignments	There will be two interim and one final exam, together accounting for 75% of the grade. Further, students will be expected to prepare for the course based on assigned readings, contribute actively in class, and to perform solving of short text and calculation problems in home-assignments, together accounting for 25% of the grade.
Course Policies	Attendance of and active participation in classes is mandatory. All assignments need to be delivered in due time. Any planned absence needs to be discussed with the course instructor and program chair.
Additional Information	

Tentative Course Schedule

(Time, topic/emphasis & resources)

Week	Lectures	Topic
1	Sun 08/26/2018 Tue 08/28/2018	General Introduction Lecture - Prokaryote and Eukaryote Cells (Chap. 1)
2	Sun 09/02/2018 Tue 09/04/2018	Lecture - Small Molecules and Macromolecules in Cells (Chap. 2) Tutorial 1
3	Sun 09/09/2018 Tue 09/11/2018	Lecture - The Shape and Structure of Proteins (Chap. 4) Lecture - How Proteins Work and Are Controlled (Chap. 4)
4	Sun 09/16/2018 Tue 09/18/2018	Tutorial 2 Lecture - DNA and Chromosomes (Chap. 5)
5	Sun 09/23/2018 Tue 09/25/2018	Saudi National Day Lecture - From DNA to RNA, and then to Protein (Chap. 7)
6	Sun 09/30/2018 Tue 10/02/2018	Tutorial 3 Exam Part A
7	Sun 10/07/2018 Tue 10/09/2018	Lecture - Membrane Structure (Chap. 11) Lecture - Transmembrane Transport, Transporters and Ion Channels (Chap. 12)
8	Sun 10/14/2018 Tue 10/16/2018	Lecture - Membrane-Enclosed Organelles and Protein Sorting (Chap. 15) Tutorial 4
9	Sun 10/21/2018 Tue 10/23/2018	Lecture - Vesicular Transport (Chap. 15) Lecture - General Principles of Cell Signaling (Chap. 16)
10	Sun 10/28/2018 Tue 10/30/2018	Fall Midterm Break Lecture - G-Protein-Coupled and Enzyme-Coupled Receptors (Chap. 16)
11	Sun 11/04/2018 Tue 11/06/2018	Tutorial 5 Exam Part B
12	Sun 11/11/2018 Tue 11/13/2018	Lecture - Proteins of the Cytoskeleton (Chap. 17) Lecture - Cell Motion and Contraction (Chap. 17)
13	Sun 11/18/2018 Tue 11/20/2018	Tutorial 6 Lecture - The Cell-Division Cycle (Chap. 18)
14	Sun 11/25/2018 Tue 11/27/2018	Lecture - Mitosis and Meiosis (Chap. 18; 19) Tutorial 7
15	Sun 12/02/2018 Tue 12/04/2018	No class Exam Part C
16	Sun 12/09/2018 Tue 12/11/2018	No class

Note

The instructor reserves the right to make changes to this syllabus as necessary.