



Philadelphia University
Faculty of Science
Department of Biotechnology & Genetic Engineering
First semester, 2009/2010

Course Syllabus

Course Title: Cell Biology	Course code: 240233
Course Level: Second year	Course prerequisite (s) and/or corequisite (s): 240102/240107
Lecture Time: Section 1: 9:45 – 11:15 Mon Wed Section 2: 14:15 -15:45 Mon Wed	Credit hours: 3

Academic Staff

Specifics

Name	Rank	Office Number and Location	E-mail Address
Dr. Nabil A.S. NIMER	Assistant Professor	1114S	nabil_nimer@philadelphia.edu.jo

Course module description:

This course overviews the basic information concerning the structure and the functions of the cell and its components. This includes structural, molecular, biochemical and genetic basis of the biological activities.

Course module objectives and knowledge outcome:

By the end of the course students should be able to grasp the fundamentals in understanding the molecular organization of the cells, function and structure of the different organelles including regulatory mechanisms for processes like; respiration, photosynthesis, energetics, cell division, cell communication, DNA replication and flow of information and transport across the unit membrane.

Course/ module components

- **Books**
The world of the Cell (2005)
Becker, Kleinsmith & Hardin
Benjamin Cummings
ISBN 0 8053 4852 2

Teaching methods:

The 45 hours in total will be mainly lectures with few tutorials and including two one hour exams.

Learning outcomes:

- Cognitive skills (thinking and analysis).

The capacity to identify different perspectives, theories and models potentially relevant to different subject matter and to appraise their strengths and weaknesses.

The capacity to be aware of the limitations of existing knowledge and understanding and to recognize the relevance of developing new approaches to situations and problems.

Learning logical thinking through taking the important ideas, facts and conclusions involved in a problem and arranging them in a chains like progression that takes on a meaning in and of itself.

- Communication skills

Speak with more confidence and listen carefully to build rapport.

Students will be encouraged to express themselves more effectively

Assessment instruments

<u>Allocation of Marks</u>	
Assessment Instruments	Mark
First examination	20
Second examination	20
Final examination: 50 marks	50
Reports, Quizzes, Home works.	10
Total	100

Course/module academic calendar

week	Basic and support material to be covered
(1)	Introduction to modern Cell Biology
(2)	Cell Chemistry:
(3)	Types of prokaryotic cell, viruses, prions & viroids
(4)	Enzyme kinetics & regulation
(5)	Membrane: structure, function & signaling
(6)	Transport across membranes
First examination	
(7)	Membrane potential
(8)	Signal transduction mechanisms: messengers and receptors.
(9)	Extracellular matrix, cell adhesion, cell-cell recognition and junctions
(10)	Intracellular components, golgi , lysosomes, ER
(11)	The mitochondria: respiration
Second examination	
(12)	The chloroplast: photosynthesis
(13)	The nucleus: DNA & chromosomes
(14)	Cell cycle
(15)	Meiosis and genetic recombination
(16)	The cytoskeleton and cell mobility
Final Examination	

Expected workload:

On average students need to spend 3 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the faculty of science shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Module references

Books

Cell Biology (2002)
Pollard, T.D. and Earshaw, W.C.
Saunders
ISBN 072166062-2