



**Philadelphia University
Faculty of Science
Department of Biotechnology
Fall semester, 2014/2015
Course Syllabus**

Course code: 240233	Course Title: Cell Biology
Course Level: 2 nd year	Course prerequisite (s): General Biology (240107).
Lecture Time: 11:10 -12:00 (Sunday, Tuesday and Thursday)	Credit hours: 3 hours Lecture Hall: 902

Academic Staff Specifics

Name	Rank	Office Number	Office Hours	Email Address
Dr. Lolita Qouta	Assistant Professor	816	11:0 – 12:0 Sunday, Tuesday & Thursday	lqouta@philadelphia.edu.jo

Course module description

This is a mandatory second year level course. It overviews and illustrates the basic information concerning the structural, molecular, biochemical and genetic basis of the biological activities taking place in the world of the cell. The lectures will provide sufficient background to enable the students to comprehend more specialized advanced courses. It is a 3 credit hour course in which 3 lectures each of 50 minutes will be given per a week.

Course module objectives

This course was designed to introduce the students to the basic concepts of cell biology, including cell structure, macromolecules, biochemistry, development and cell communications. The course will mainly concentrate on:

1. The molecular organization of eukaryotic cells, function and structure of different organelles, regulatory mechanisms of vital processes like cell communication, and flow of information and transport across membranes.
2. The important features and functions of biological membranes and the machinery of endomembrane transport and trafficking pathways.
3. The features of the cytoskeleton as well as basic mechanisms of cell communication.

Course/ module components

Text books and web sites

- ◆ Hardinm J. M., Bertoni, G., Kleinsmith, L.J., Becker, W. M. 2012. The world of the Cell. 8th Edition. Benjamin Cummings publishing company, USA
ISBN: 978-0-321-709783
- ◆ Alberts, B., Bray, D., Hopkin, K., Johnson, A.D., Lewis, J., Raff, M., Roberts, K., and Walter, P. 2013. Essential Cell Biology. 4th Edition. Garland Science (Taylor and Francis Group).
ISBN-13: 978-0815344544
- ◆ Some assigned readings from recent publications that will be distributed in the class.

Learning outcomes

Upon the completion of this course, the students should have developed a basic knowledge and are able to discuss and analyze the information in:

- ◆ The structure and functions of cellular organelles; transport through membranes, and cell-cell communication based on specific vital interactions between macromolecules.
- ◆ The cellular mechanisms that allow and coordinate reception and transduction of environmental information.
- ◆ The cytoskeleton and molecular machines of cellular motility.

Communication skills (personal and academic).

The students will be encouraged and trained to do presentations illustrating the ideas and concepts discussed in class. Each student will work on his project alone. You'll be given a list of the different suggested topics. Start preparing for your talk early and don't wait till the last minute

Assessment instruments

Assessment Instruments	Mark
First hour exam	20
Second hour examination	20
Quizzes & (a total of 3 quizzes) + Worksheets	20
Final examination	40
Total	100

Expected workload

The students are encouraged to attend all the lectures and keep good notes of every topic discussed in class. Reading the covered material in advance will definitely enrich the student's vocabulary and enable him/her to follow the subjects discussed in the lecture. Every student is expected to spend 4 hours per week to prepare and/or study the assigned material.

Course/module academic calendar

Week	Subject
<i>October 19, 21, 23 & 26</i>	Chapter 4: Cells and organelles (Revision: Worksheet I)
<i>October 28 & 30 November 2, 4, 7 & 6</i>	Chapter 7: Membranes: Their structure, function and chemistry
<i>November 9, 11, 13 & 16</i>	Chapter 8: Transport across membranes: overcoming the permeability barrier
<i>November 18, 20, 23, 25 & 27</i>	Chapter 12: The endomembrane system and peroxisomes
<i>November 30 December 2, 4, 7 & 9</i>	Chapter 14: Signal transduction mechanisms. III. Messengers and receptors
<i>December 11, 14, 16, 18 & 21</i>	Chapter 15: Cytoskeletal system
<i>December 23, 28, 30 January 4, 6 & 8</i>	Chapter 16: Cellular movement. Motility and contractility
<i>January 11, 13, 15, 18 & 21</i>	Chapter 17: Cell adhesions. Cell junctions and extracellular
<i>Important Dates for</i>	<p>*****19-27/11/ 2014 period of First Hour Exams *****</p> <p>***** Thursday 25/12/2015 Christmas Holiday *****</p> <p>***** 28-6/1/2015 period of Second Hour Exams *****</p>

<i>your calendar</i>	**** Thursday 1/1/2015 New Year Holiday**** **** Thursday 22/1/2015 Last day to withdraw **** **** 1-9/2/2015 Final Exams ****
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Attendance policy

Students are expected to be punctual and attend all the lectures. Absence from lectures should not exceed 15% (6 lectures). Students, who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the Faculty of Science will receive a mark of zero for the course. Quizzes will be given at the beginning of class. There will be no make-up quizzes and your lowest quiz grade will be dropped.

Module references

In addition to the texts listed above, the students are requested to read the publications that will be assigned to the students during the course; each student should prepare and submit a talk summarizing the outcomes of his/her research.