



UNIVERSITY OF NICOSIA

ΠΑΝΕΠΙΣΤΗΜΙΟ ΛΕΥΚΩΣΙΑΣ

Course Code BIOL-122	Course Title Cell Biology /Κυτταρική Βιολογία	Credits (ECTS) 6
Department Life & Health Sciences	Semester Fall	Prerequisites None
Type of Course Required	Field Pharmacy	Language of Instruction Greek/English
Level of Course 1 st Cycle	Year of Study 1 st year	Lecturer Maria Christofidou/ Phoebe Stavridou

Objectives of the Course:

This course aims to introduce the foundational theories, concepts and practices in cell biology. This course will enable you to:

- Understand the structure and function of the cell as the basic unit of life;
- Appreciate the differences between eukaryotic and prokaryotic cells as well as viruses;
- Understand the ways eukaryotic cells move substances through the cell membrane, how they communicate between them, as well as the involvement of the cytoskeleton in these processes;
- Start developing the skills necessary for the design, presentation, analysis and interpretation of experimental data.

Learning Outcomes:

Upon the successful completion of this course, you should be able to:

- Compare and contrast structures of prokaryotic and eukaryotic cells and understand the significance of these differences in patterns of evolution and treatment of disease.
- Explain the structure and function of various types of eukaryotic cells.
- Understand the relationship between the structure of organelles and their function – i.e. “form follows function” at the cellular level.
- Understand the methods of moving substances in and out of the cell.
- Understand cell communication and connection.
- Explain the processes of cell division, cell cycle and differentiation.
- Appreciate the structure and division of viruses, as well as their differences from

eukaryotic and prokaryotic cells.

- Develop the skills to search the literature for, read and understand scientific publications on course related information.
- Develop laboratory skills related to cell biology techniques, equipment, instruments and projects.
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Course Contents:

Introduction to prokaryotic and eukaryotic cells and evolution of cells. Organic molecules and chemical composition of cells. Organelles of the eukaryotic cell (nucleus, ribosomes, endomembrane system, mitochondria, chloroplasts, cytoskeleton, extracellular structures). Cell membrane and movement through the membrane (secretion, phagocytosis, pinocytosis). Cell communication. Cell cycle and division (mitosis, meiosis). Structure and division of prokaryotic cells. Structure and division of viruses. Instruments and techniques for the study of cells and organisms.

Laboratory and Workshops:

Exercise 1: Microscopy and Microscopes

Exercise 2: Eukaryotic cells: Structure and Function

Exercise 3: Prokaryotic cells: Structure and Function

Learning Activities and Teaching Methods:

Lectures, class discussion, assignments, laboratory and laboratory reports, workshops

Assessment Methods:

Examination, coursework

Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Campbell-Reece et al	Biology	Pearson, Benjamin, Cummings	2008	
Alberts B.,Bray D.,Hopkin K.,Johnson A.,Lewis J.,Raff M.,Roberts K.,Walter P	Βασικές Αρχές Κυτταρικής Βιολογίας	BROKEN HILL PUBLISHERS		

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
ΒΑΣΙΛΗΣ ΜΑΡΜΑΡΑΣ & ΜΑΡΙΑ	Βιολογία Κυτάρου	ΤΥΠΟΡΑΜΑ -		

ΛΑΜΠΡΟΠΟΥΛΟΥ- ΜΑΡΑΜΑΡΑ		Αγοργιανίτης Σπ. Μον. ΕΠΕ		
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