

COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Health Sciences		
ACADEMIC UNIT	Faculty of Medicine		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	IAY304	SEMESTER	3rd
COURSE TITLE	BIOLOGY II		
INDEPENDENT TEACHING ACTIVITIES <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>	WEEKLY TEACHING HOURS	CREDITS	
Lectures and laboratory exercises	10	7	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (4).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	General background		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes		
COURSE WEBSITE (URL)	http://ecourse.uoi.gr/course/view.php?id=209		

(2) LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Guidelines for writing Learning Outcomes

Through the lectures, students are expected to acquire a comprehensive theoretical background, but also an introduction to the experimental approaches of modern research. Within the course, students will familiarize themselves with the structure of the cell and its components and understand functions such as gene expression, protein sorting and transport, energy production in the cell, cell movement, death, cell renewal, etc. In addition, students will be informed about advanced approaches and techniques of modern scientific research through tutorials and seminars.

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology
Adapting to new situations
Decision-making
Working independently
Team work
Working in an international environment
Working in an interdisciplinary environment
Production of new research ideas

Project planning and management
Respect for difference and multiculturalism
Respect for the natural environment
Showing social, professional and ethical responsibility and sensitivity to gender issues
Criticism and self-criticism
Production of free, creative and inductive thinking
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Others...
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- Autonomous work
- Decision making
- Familiarity with simple laboratory techniques
- Search and compare data and information from the literature
- Importance of interdisciplinarity
- Understanding diversity and diversity
- Promotion of free, creative and inductive thinking

(3) SYLLABUS**The Nucleus**

The nuclear envelope and the transport of molecules between the nucleus and the cytoplasm, The organization of chromosomes, The nuclear bodies

Protein sorting and transport

The Endoplasmic Reticulum, The Golgi Apparatus, The Mechanism of Vesicular Transport, Lysosomes, Mitochondria, and Peroxisomes

The cytoskeleton and cell migration

Structure and organization of actin filaments, Myosin motors, Microtubules, Microtubule motors and movement, Intermediate filaments

The cytoplasmic membrane

The structure of the cytoplasmic membrane, Transport of small molecules, Endocytosis

Extracellular matrix and cell interactions

Extracellular matrix and cell-cell interactions, Cell-cell interactions

The cell cycle

The Eukaryotic Cell Cycle, Regulators of Cell Cycle Progression, The Events of M Phase, Mitigation and Fertilization

Cell death and cell renewal

Programmed cell death, Stem cells and tissue preservation in adults, Pluripotent stem cells, cellular reprogramming and regenerative medicine

Cancer

The development and etiology of cancer, Oncogenes, Tumor suppressor genes, Molecular approaches to cancer therapy

(4) TEACHING and LEARNING METHODS - EVALUATION

<p style="text-align: center;">DELIVERY <i>Face-to-face, Distance learning, etc.</i></p>	<p>The theoretical part of the course is taught through lectures (in the Lecture Halls, with direct physical presence and teacher-student interaction). Additionally, as part of the tutorial exercises, students attend lectures during which they become familiar with advanced scientific research techniques.</p>
<p style="text-align: center;">USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i></p>	<p>Presentation of slides (powerpoint slides) and videos as part of the course's delivery. All slides and videos are registered on the University's website, asynchronous distance learning platform (e-course) and are freely accessible by students. The course slides are updated at least once a year (each academic year). Also, through the e-course, students have access to additional educational material (eg important relevant articles from the international literature). Communication with the students for practical issues, announcements, but also questions regarding a better understanding of the course material and their preparation for the exams, is done through the e-course platform (see Messages, Discussion Forum at http://ecourse.uoi.gr/course/view.php?id=209), but also through messages to the available teachers' email addresses.</p>

TEACHING METHODS		
<p>The manner and methods of teaching are described in detail. Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</p> <p>The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</p>	Activity	Workload of each students group
	Lectures	46
	Tutorials	6
	Laboratory exercises	6
STUDENT PERFORMANCE EVALUATION	Evaluation language: Greek	
<p>Description of the evaluation procedure</p> <p>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</p> <p>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</p>	Written final exam	
	<p>The written exam includes:</p> <p>Short answer questions</p> <p>Questions of short development of a topic</p> <p>Questions combining material from various chapters</p> <p>Questions that require critical thinking/reasoning</p> <p>Multiple choice or double choice questions</p> <p>(The weight of the questions is weighted so that the average degree of difficulty of the set of questions is similar in each written exam)</p>	

(5) ATTACHED BIBLIOGRAPHY

Teaching - study material

Το κύτταρο- Μια Μοριακή Προσέγγιση,

(The Cell: A Molecular Approach, Geoffrey M. COOPER, Boston University, 8th Edition, 2019, Oxford University Press, Ακαδημαϊκές Εκδόσεις, Ι. ΜΠΑΣΔΡΑ & ΣΙΑ 2021.

e-course

<http://ecourse.uoi.gr/course/view.php?id=209>