

Course Outline: “1102 - Biology”

1. General information

FACULTY/SCHOOL	Physical Education, Sport Science & Nutrition		
DEPARTMENT	Nutrition & Dietetics		
LEVEL OF STUDY	Undergraduate		
COURSE UNIT CODE	1102	SEMESTER	1st
COURSE TITLE	Biology		
INDEPENDENT TEACHING ACTIVITIES in case credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the entire course, give the weekly teaching hours and the total credits		WEEKLY TEACHING HOURS	CREDITS
Lectures		3	
Laboratory Exercises		2	
<i>Add rows if necessary. The organization of teaching and the teaching methods used are described in detail under section 4</i>		5	5
COURSE TYPE <i>Background knowledge, Scientific expertise, General Knowledge, Skills Development</i>	General Knowledge		
PREREQUISITE COURSES	No		
LANGUAGE OF INSTRUCTION	GREEK		
LANGUAGE OF EXAMINATION/ASSESSMENT	GREEK		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	YES (in English)		
COURSE WEBSITE (URL)	https://eclass.uth.gr/courses/DND_U_277/		

2. LEARNING OUTCOMES

<p>Learning Outcomes The course learning outcomes, specific knowledge, skills and competences of an appropriate (certain) level, which students will acquire upon successful completion of the course, are described in detail. It is necessary to consult: Συμβουλευτείτε το APPENDIX A</p> <ul style="list-style-type: none"> Description of the level of learning outcomes for each level of study, in accordance with the European Higher Education Qualifications' Framework. Descriptive indicators for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B Guidelines for writing Learning Outcomes 			
<p>Biology is the main introductory course on the concepts of cell structure and function and the effect of genetics and heredity on the occurrence of genetic diseases. Upon successful completion of the course, the students will have the required background to understand the content of relevant courses in the following semesters. Specifically, he/she will have acquired the knowledge regarding the basic functions of the cell, the mechanisms of DNA replication, transcription and translation as well as the basic fields of ecology and evolution.</p>			
<p>General Competences Taking into consideration the general competences that students/graduates must acquire (as those are described in the Diploma Supplement and are mentioned below), at which of the following does the course attendance aim?</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none; vertical-align: top;"> <p><i>Search for, analysis and synthesis of data and information by the use of appropriate technologies, Adapting to new situations Decision-making Individual/Independent work Group/Team work Working in an international environment Working in an interdisciplinary environment Introduction of innovative research</i></p> </td> <td style="width: 50%; border: none; vertical-align: top;"> <p><i>Project planning and management Respect for diversity and multiculturalism Environmental awareness Social, professional and ethical responsibility and sensitivity to gender issues Critical thinking Development of free, creative and inductive thinking (Other.....citizenship, spiritual freedom, social awareness, altruism etc.)</i></p> </td> </tr> </table>		<p><i>Search for, analysis and synthesis of data and information by the use of appropriate technologies, Adapting to new situations Decision-making Individual/Independent work Group/Team work Working in an international environment Working in an interdisciplinary environment Introduction of innovative research</i></p>	<p><i>Project planning and management Respect for diversity and multiculturalism Environmental awareness Social, professional and ethical responsibility and sensitivity to gender issues Critical thinking Development of free, creative and inductive thinking (Other.....citizenship, spiritual freedom, social awareness, altruism etc.)</i></p>
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<ul style="list-style-type: none"> Search for, analysis and synthesis of data and information Adapting to new situations Working in an interdisciplinary environment Acquisition of the appropriate theoretical cognitive background so that further 			

education is possible.

3. COURSE CONTENT

1. Introduction to Biology
2. Fundamental knowledge of biological chemistry
3. Chemical composition of the cell
4. Structure and organization of the cell
5. Cellular functions
6. DNA replication, Transcription and Translation
7. Cell Cycle and Division
8. Mutations and Polymorphisms
9. Inheritance Patterns
10. Applied Genetics-Genetic Syndromes
11. Photosynthesis
12. Evolution
13. Ecology

Laboratory

1. Introduction to Biology
2. Safety and Hygiene rules in a laboratory setting
3. Optical microscopy
4. Observation of samples in the microscope
5. Eukaryotic and prokaryotic cells
6. Animal and plant cells
7. The blood
8. DNA isolation from kiwi
9. Mitosis –Meiosis
10. Karyotype analysis-Chromosomes
11. Observation of animal tissues
12. Educational visits
13. Videos

4. TEACHING METHODS - ASSESSMENT

<p style="text-align: center;">MODES OF DELIVERY</p> <p style="text-align: center;"><i>Face-to-face, in-class lecturing, distance teaching and distance learning etc..</i></p>	Face to face	
<p style="text-align: center;">USE OF INFORMATION AND COMMUNICATION TECHNOLOGY</p> <p style="text-align: center;"><i>Use of ICT in teaching, Laboratory Education, Communication with students</i></p>	<ol style="list-style-type: none"> 1. Lectures in power point documents 2. Research or review papers in pdf documents 3. Laptops for the projection of relevant videos 4. The lectures in pdf documents that are announced to the students through the eclass platform <p>The students get in touch with the instructor either directly (through face to face contact or email) or indirectly (through notes posted on the poster boards and the website of the Department).</p>	
<p style="text-align: center;">COURSE DESIGN</p> <p style="text-align: center;"><i>Description of teaching techniques, practices and methods: Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, Internship, Art Workshop, Interactive teaching, Educational visits, projects, Essay writing, Artistic creativity, etc. The study hours for each learning activity as well as the hours of self-directed study are given following the principles of the ECTS.</i></p>	Activity/Method	Semester workload
	Lectures	3 × 13 = 39
	Laboratory exercises	2 × 13 = 26
	Literature analysis	15
	Preparation for the exams	454
	Total	125
<p style="text-align: center;">STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS</p> <p style="text-align: center;"><i>Detailed description of the evaluation procedures:</i></p>	For both the Theory and the Lab, the performance of the students is assessed through written exams (100%).	

Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice tests, short- answer questions, open-ended questions, problem solving, written work, essay/report, oral exam, presentation, laboratory work, other.....etc.
Specifically defined evaluation criteria are stated, as well as if and where they are accessible by the students.

5. SUGGESTED BIBLIOGRAPHY

- *Suggested bibliography:*
- Campbell Biology: Concepts & Connections (8th Edition), Pearson, 2020.
- Alberts B, Bray D, Johnson A et al. Essential Cell Biology. 5th edition London: Garland Publishing, 2019.

- *Scientific journals:*
- Biochemistry
- Biochemical journal
- Journal of Biological Chemistry
- PNAS
- EMBO Journal