COURSE OUTLINE "EVOLUTIONARY BIOLOGY"

1. GENERAL

SCHOOL	HEALTH SCIENCES		
DEPARTMENT	MOLECULAR BIOLOGY AND GENETICS		
LEVEL OF STUDIES	ISCED LEVEL 6		
COURSE CODE	**MBG220**	**SEMESTER**	2nd
COURSE TITLE	EVOLUTIONARY BIOLOGY		

TEACHING ACTIVITIES *If the ECTS Credits are distributed in distinct parts of the course e.g. lectures, labs etc. If the ECTS Credits are awarded to the whole course, then please indicate the teaching hours per week and the corresponding ECTS Credits.*	**HOURS/WEEK**	**ECTS CREDITS**
	3	4

COURSE TYPE *Background, General Knowledge, Scientific Area, Skill Development*	SCIETIFIC AREA
PREREQUISITES:	NO
TEACHING & EXAMINATION LANGUAGE:	GREEK ENGLISH FOR ERASMUS STUDENTS
COURSE OFFERED TO ERASMUS STUDENTS:	YES
COURSE URL:	https://eclass.duth.gr/courses/HEALTH149/

2. LEARNING OUTCOMES

Learning Outcomes

Please describe the learning outcomes of the course: Knowledge, skills and abilities acquired after the successful completion of the course.

The purpose of the course is to introduce students to the basics of evolutionary biology, both through the acquisition of knowledge about the concepts, processes, mechanisms that control evolution and its outcome, as well as the way scientific research approaches the basic questions that arise about evolution in a multitude of scientific fields. Through an interdisciplinary approach, from molecular biology and genetics to mathematical models and the philosophical extensions of evolutionary theory, students cultivate their own point of view and critical thinking.

Students who successfully complete the course will have achieved the following learning objectives:
- they will know the basic concepts of Evolutionary Biology,
- they will understand the action of evolutionary forces,
- they will understand the effects of the combined action of the forces of evolution on organisms,
- they will have familiarized themselves with the methodology of studying evolution.

General Skills

Name the desirable general skills upon successful completion of the module

Search, analysis and synthesis of data and information,
ICT Use
Adaptation to new situations
Decision making
Autonomous work
Teamwork
Working in an international environment
Working in an interdisciplinary environment
Production of new research ideas
Project design and management
Equity and Inclusion
Respect for the natural environment
Sustainability
Demonstration of social, professional and moral responsibility and sensitivity to gender issues
Critical thinking
Promoting free, creative and inductive reasoning

Search, analysis and synthesis of data and information, ICT Use
Working in an interdisciplinary environment
Production of new research ideas
Respect for the natural environment
Critical thinking
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3. COURSE CONTENT

Lectures:
1. Introduction to evolutionary thought, historical overview, basic concepts, Darwin
2. Adaptive evolution, natural selection
3. Neutral evolution, drift, bottleneck, founder effect
4. The evolution of phenotypes
5. Adaptive traits, maintaining diversity
6. Evolution of life traits, sex, development, co-evolution
7. Speciation
8. Phylogenetic relationships, classification
9. Evolutionary history of the earth, mass extinctions
10. Evolution of plants
11. Evolution of animals
12. Human evolution
13. Evolution of pathogenic organisms

4. LEARNING & TEACHING METHODS - EVALUATION

TEACHING METHOD *Face to face, Distance learning, etc.*	Face to face
USE OF INFORMATION & COMMUNICATIONS TECHNOLOGY (ICT) *Use of ICT in Teaching, in Laboratory Education, in Communication with students*	Use of ICT in Teaching Use of ICT in Communication with students
TEACHING ORGANIZATION *The ways and methods of teaching are described in detail.* *Lectures, Seminars, Laboratory Exercise, Field Exercise, Bibliographic research & analysis, Tutoring, Internship (Placement), Clinical Exercise, Art Workshop, Interactive learning, Study visits, Study / creation, project, creation, project. Etc.* *The supervised and unsupervised workload per activity is indicated here, so that total workload per semester complies to ECTS standards.*	

Activity	*Workload/semester*
Lectures	40
Seminars	5
Bibliographic research & analysis	75
Course Total	**120**

STUDENT EVALUATION *Description of the evaluation process* *Assessment Language, Assessment Methods, Formative or Concluding, Multiple Choice Test, Short Answer Questions, Essay Development Questions, Problem Solving, Written Assignment, Essay / Report, Oral Exam, Presentation in audience, Laboratory Report, Clinical examination of a patient, Artistic interpretation, Other/Others* *Please indicate all relevant information about the course assessment and how students are informed*	**Student evaluation languages** Greek, English **Method (Formative or Concluding)** Summative **Student evaluation methods** Written exam with multiple choice test (25%) Written Exam with Short Answer Questions (25%) Written Exam with Essay Development Questions (25%) Written Exam with Problem Solving (25%)

1. SUGGESTED BIBLIOGRAPHY

Εξέλιξη-Κατανοώντας το Χρονικό της Ζωής. Έκδοση: 1/2021, Συγγραφείς: Emlen J. Douglas, Zimmer Carl. ΕΥΔΟΞΟΣ: 94644874, ISBN: 9789925576074, Διαθέτης (Εκδότης): BROKEN HILL PUBLISHERS LTD

Εξέλιξη. Έκδοση: 4η αμερικανική-1η ελληνική/2019, Συγγραφείς: Douglas Futuyma, Mark Kirkpatrick. ΕΥΔΟΞΟΣ: 86197244, ISBN: 978-618-5173-46-3, Διαθέτης (Εκδότης): UTOPIA ΕΚΔΟΣΕΙΣ Μ. ΕΠΕ.