

COURSE LAYOUT

1. GENERAL

SCHOOL	APPLIED BIOLOGY AND BIOTECHNOLOGY		
DEPARTMENT	BIOTECHNOLOGY		
STUDY LEVEL	<i>Undergraduate</i>		
COURSE CODE	1960	SEMESTER	4th
COURSE TITLE	EVOLUTION		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	ECTS
Lectures		3	0,12
Practical (lab work)		2	0,08
Group and/or individual works		1	0,04
COURSE TYPE	Scientific background / Skills development/ General and specialized knowledge		
PREREQUISITES	No		
LANGUAGE	Greek with English support in terminology		
IS THE COURSE OFFERED for ERASMUS STUDENTS?	YES (in English)		
COURSE WEB PAGE	https://mediasrv.aua.gr/eclass/courses/BIOTECH133/		

2. LEARNING OUTCOMES

Learning Outcomes
<p>On completion of the course the student will:</p> <ul style="list-style-type: none"> • Have a knowledge of the history, the theories and the analytical methods of the evolution of the species theory. • Have knowledge of the species evolution from the beginning of the planet Earth until now. • Be able to comprehend the mechanisms of Evolution in phenotypic and molecular level and classify the species according to their phenotypic and molecular homology. • To learn of methods and techniques that are used for the study of evolutionary mechanisms as well as the formation of evolutionary trees. • Be able to distinguish basic and specific roles of various evolutionary processes at molecular level. • To acquire knowledge on the primate and human evolution. • Be able to apply, analyze, evaluate and decide on the applicability of methodology on species relationship at molecular or phenotypic level. • To be able to collaborate with fellow students to create written work and oral presentation on the application of the evolution theory on the living world, as well as the ability for online access and retrieval of information from electronic libraries and scientific journals.
General Competences
<ul style="list-style-type: none"> • Working independently • Team work • Production of new research ideas • Decision-making • Project planning and management

- Adapting to new situations
- Search for, analysis and synthesis of data and information, with the use of the necessary technology

3. COURSE CONTENT

- Evolutionar theories.
- History of the Evolution theory.
- Definitions, Classifications.
- Histoty of Evolution of Species.
- Mechanisms of Evolution.
- Evolution of Species.
- Molecular Evolution.
- Protein Evolution
- Phylogenetics Analysis.
- Human Evolution.
- Cases and Arguments in Evolution
- Chromosome comparisons

4. TEACHING and LEARNING METHODS - Evaluation

TEACHING METHOD	In suitably equipped teaching rooms. Distant Learning													
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education, communication with students	The course is completely computerised in the form of Powerpoint, Web linking, etc. Computer programmes and applications are taught and distributed to students, for the analysis of financial information. The support of learning process and the necessary materials are facilitated by the electronic, web based e-class platform (http://geneticslab.gr).													
TEACHING ORGANISATION <i>The manner and methods of teaching are described in detail.</i> <i>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.</i> <i>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</i>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;"><i>Activity</i></th> <th style="text-align: center;"><i>Work Load</i></th> </tr> </thead> <tbody> <tr> <td>Lectures (direct)</td> <td style="text-align: center;">39 h (1.56 ECTS)</td> </tr> <tr> <td>Laboratory work</td> <td style="text-align: center;">12 h (0,48 ECTS)</td> </tr> <tr> <td>Group and/or individual works</td> <td style="text-align: center;">13 h (0.52 ECTS)</td> </tr> <tr> <td>Autonomous study</td> <td style="text-align: center;">61 h (2,44 ECTS)</td> </tr> <tr> <td><i>Total contact hours and training</i></td> <td style="text-align: center;">125 h (5 ECTS)</td> </tr> </tbody> </table>		<i>Activity</i>	<i>Work Load</i>	Lectures (direct)	39 h (1.56 ECTS)	Laboratory work	12 h (0,48 ECTS)	Group and/or individual works	13 h (0.52 ECTS)	Autonomous study	61 h (2,44 ECTS)	<i>Total contact hours and training</i>	125 h (5 ECTS)
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STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure</i> <i>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</i> <i>Specifically-defined evaluation criteria are given and if and where are accessible to students</i>	<p>I. Written final examination (40%) of different difficulty, based on the lectures offered, containing:</p> <ul style="list-style-type: none"> - Questions of multiple choice. - Questions of theoretical knowledge. - Problems based on lecture material. <p>II. Laboratory exercises/practicals (30%).</p> <p>III. Group and small autonomous works (20%).</p> <p>IV. Internet questions (10%)</p>													

5. BIBLIOGRAPHY

-Προτεινόμενη Βιβλιογραφία :

- 1) Ροδάκης Γεώργιος, Εισαγωγή στην εξελικτική βιολογία, Κ. & Ν. ΛΙΤΣΑΣ Ο.Ε., Έκδοση: 1η έκδ./2001 ISBN: 960-372-049-6
- 2) FUYUMA DOUGLAS ΕΞΕΛΙΚΤΙΚΗ ΒΙΟΛΟΓΙΑ ΔΡΥΜΑ ΤΕΧΝΟΛΟΓΙΑΣ & ΕΡΕΥΝΑΣ-ΠΑΝΕΠΙΣΤΗΜΙΑΚΕΣ ΕΚΔΟΣΕΙΣ ΚΡΗΤΗΣ, Έκδοση: 1η/1995 ISBN: 960-7309-20-0

-Συναφή επιστημονικά περιοδικά:

Science

Nature

Journal of Molecular Evolution

BMC Biology