COURSE OUTLINE

(1) GENERAL

SCHOOL	NATURAL SIENCES		
ACADEMIC UNIT	BIOLOGY		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	BIO_ΣΤΥ3	**SEMESTER**	6th
COURSE TITLE	ECOLOGY I		

INDEPENDENT TEACHING ACTIVITIES *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*	**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures, Laboratory Exercises	3 (lec) + 3 (lab)	6
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Field of Science Skills Development
PREREQUISITE COURSES:	NO
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes (in English)
COURSE WEBSITE (URL)	https://eclass.upatras.gr/courses/BIO200/

(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*

In the end of the course the student should be able to:
1. perceive ecology as a science and comprehend the content, principles, modern issues and approaches
2. approach and discuss everyday issues concerning the environment based on the knowledge on the structures, functioning and mechanisms determining the condition and the future of ecosystems
3. comprehend the effect of the environmental conditions on organisms as well as the reactions and adaptations of organisms to environmental fluctuations
4. comprehend the concept of populations, know the population main demographic characteristics and how they determine the dynamics of populations
5. assess parameters (fecundity and mortality in relation to age) and use them in order to predict the population dynamics
6. understand the basic mathematical models and their use in population ecology
7. be aware of the role of basic mechanisms, such as predation and competition, in determining

population abundance
8. perceive the principles of the management of biological resources and the main characteristics of their sustainable exploitation
9. understand the significance of overexploitation and maximum sustainable yield and use them

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	*Project planning and management*
Adapting to new situations	*Respect for difference and multiculturalism*
Decision-making	*Respect for the natural environment*
Working independently	*Showing social, professional and ethical responsibility and sensitivity to gender issues*
Team work	*Criticism and self-criticism*
Working in an international environment	*Production of free, creative and inductive thinking*
Working in an interdisciplinary environment	*……*
Production of new research ideas	*Others…*
	…….

By the end of this course the student will have developed the following **General Abilities**:
1. Autonomous (Independent) work
2. Group work
3. Generation of new research ideas
4. Respect for the natural environment
5. Development of free, creative and inductive thinking

Additionally, by the end of this course the student will have developed the following **Special skills/competences**:
1. understanding of the content and usage of the basic mathematical models of population dynamics
2. estimation and assessment of the main parameters determining population dynamics
3. estimation of critical points and parameters for the rational exploitation of biological resources
4. analysis of demographic characteristics and prediction of the dynamics of population abundance
5. ability to record and analyse environmental data with the use of autonomous data loggers

(3) SYLLABUS

The science of Ecology: principal concepts and modern approaches. The abiotic environment: spatial heterogeneity, temporal fluctuations and change trends. Effects of the environmental conditions on the organisms. The concept of population and its role in the ecosystem. Abundance and distribution of populations. Demographic characteristics. Survival-Fecundity-Life tables. Models of population dynamics (logistic population growth, predation, competition). Exploitation of biological resources and surplus production models. Management of harmful organisms.

Methodology and Implementation of the teaching and pedagogical approach in Ecology.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face-to-face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Powerpoint presentations. Population dynamics simulations. Interactive simulation software of population dynamics and exploitation. Data-loggers use and data analysis. Support of educational procedure through the use of the e-class electronic platform.
TEACHING METHODS *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.* *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*	
STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure* *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* *Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*	Written exams (at the semester's end), in Course theory and lab. Language: Greek. Exams through multiple choice questions (including negative marks), problem solving, short answer questions. Final Course Grade: Theory Grade x 0.7 + Laboratory Grade x 0.3 Grading scale: 1-10. Passing grade: 5 Grading: 3 correspond to ECTS grade F. Grade 4 corresponds to ECTS grade FX. Passing grades correspond to ECTS grades as follows: 5=E, 6=D, 7=C, 8=B, 9=A.

Activity	***Semester workload***
Lectures (13 weeks x 3 hours per week)	39
Laboratory exercises (6 weeks x 2 hours per week)	12
Home study	99
Course total	***150***

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

1. Lykakis J. 1996. Ecology. Symmetria editions, 468 pages (in Greek)
2. Molles, M. C. Jr. 2009. Ecology: Concepts and Applications (translated by Th. Georgiadis). Metehmio editions (in Greek)

- Related academic journals: