COURSE OUTLINE

(1) General information

FACULTY/SCHOOL	TECHNOLOGY			
DEPARTMENT	ENVIRONMENTAL SCIENCES			
LEVEL OF STUDY	*Undergraduate*			
COURSE UNIT CODE	**NEW COURSE**	**SEMESTER**	**2th**	
COURSE TITLE	ECOLOGY			
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 TEACHNG HOURS**	**CREDITS**
THEORETICAL BACKGROUND			4	4
COURSE TYPE Background knowledge, Scientific expertise, General Knowledge, Skills Development	BACKGROUND			
PREREQUISITE COURSES:	NO			
LANGUAGE OF INSTRUCTION &EXAMINATION/ASSESSMENT:	GREEK			
THE COURSE IS OFFERED TO ERASMUS STUDENTS	YES			
COURSE WEBSITE (URL)				

(2) LEARNING OUTCOMES

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:

APPENDIX A

- *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*

ECOLOGY is an introductory module that serves as a prerequisite for several modules of the Environmental Curriculum.
The introductory module sin the cientific field of Ecology, aims in providing the background knowledge for the understanding and interpreting of biological processes in natural phenomena. The basic concepts of Ecology Science are explored in addressing and explaining current environmental issues. The concept and operation of Biocommunities (flora and fauna), populations and ecosystems are analyzed. The relationships and interactions between biotic and abiotic factors, food chains and food levels are also

studied in detail. In addition, the basic processes of energy and nutrient transfer (biogeochemical cycles), ecosystems, basic processes of primary and secondary productivity, ecology of populations, etc. are discussed. The knowledge and methods are useful in the proposition of effective measures and actions for the prevention and suppression of environmental degradation, in the context of the principle of sustainability and the conservation of biodiversity.

Upon successful completion of the course, the student will be able to:

1. Understand the basic principles and concepts of Ecology, Biocommunities, Populations, and Ecosystems.
2. Understand the evolutionary, theoretical and functional principles of Ecology.
3. Understand the flow of energy and natural ways of recycling in nature, as well as anthropogenic effects and disturbances.
4. Understand the general principles regarding the study of population dynamics, the assessment of population changes. Understand the characteristics of basic life strategies, as well as the types of population distribution in the area.
5. Appreciate contemporary issues and applications of Ecology with a critical and scientifically based approach.
6. Be able to apply the knowledge gained in the course, in other courses of the next semesters, related to Ecology, such as, Land ecosystems, Conservation of Biodiversity, etc.).
7. Be able o apply the knowledge they will acquire in the lesson, to solve environmental problems.

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?

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
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.)
…….

- Search, analyze and synthesize data and information, using the necessary technologies
- Decision making
- Autonomous work
- Teamwork
- Project design and management
- Respect for the natural environment
- Promoting free, creative and inductive thinking

(3) COURSE CONTENT

Theory

1. Introduction to the science of Ecology - General principles
2. Biocommunications - Ecosystems
3. Ecosystems and energy flow
4. The flow of nutrients (Biogeochemical cycles)
5. Productivity (primary - secondary)
6. Ecological Succession
7. Environmental Factors and Plants - Plant Adaptations
8. Population Ecology - Demographic events and population sizes
9. Biological Interactions - Survival Strategies
10. Immigration and distribution standards
11. Biogeography of islands
12. Anthropogenic effects on Ecosystems - Environmental protection
13. Conservation of Biodiversity.

(4) TEACHING METHODS-ASSESSMENT

<table>
<tr><td>MODES OF DELIVERY
Face-to-face, in-class lecturing, distance teaching and distance learning etc.</td><td>• Lectures in the classroom or by distance
• Team discussion</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY
Use of ICT in teaching, Laboratory Education, Communication with students</td><td>• Powerpoint.
• View video material
• e-mail.
• e-class</td></tr>
<tr><td>COURSE DESIGN
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.</td><td><table><tr><th>Activity/Method</th><th>Semester workload</th></tr><tr><td>Lectures</td><td>52</td></tr><tr><td>Theory study</td><td>28</td></tr><tr><td>Team working</td><td>20</td></tr><tr><td>Course total (25 hours of workload per credit unit)</td><td>100</td></tr></table></td></tr>
<tr><td>STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS
Detailed description of the evaluation procedures:

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,</td><td><u>Students are assessed in Greek. The final grade is formed by tests which include:</u>

• Written exam: 80% of the final grade (A)
• Tasks: 20% of the final grade (B)

Final grade = 80% (A) + 20% (B)</td></tr>
</table>

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:***

1. Paraskevopoulos S., 2019. (In Greek) Introduction to Ecology and Environmental Sciences, Disigma Publications.

2. Vokou, A. , 2009.(In Greek) General Ecology: An Introduction. University Studio Press, Thessaloniki

3. Veresoglou D., 2010. (In Greek) Ecology. Athens: Gartaganis Publications

4. Nentwig W., Bacher S., Brandl R. 2011. (In Greek) *Ecologie. Manuel de synthèse , Kleidarithmos Publications*

5. Molles M.C. 2009. (In Greek) Ecology, Athens: Metechmio Publications

6. Emberlin J.C., 2002.(In Greek) Introduction to Ecology) Typotheto Publications

Additional Bibliography:

-Begon, M., Harper J.L., Townsend, C.R. 2006. Ecology: Individuals, Populations and Communities, Blackwell Science Inc.

-Townsend, C.R., Begon, M., Harper J.L., 2014. Essentials of Ecology (4th edition), Wiley

Web References:

- Hellenic Ecological Society http://www.helecos.gr

-European Ecological Federation: http://www.europeanecology.org

-Ecological Society of America: http://www.esa.org