

## COURSE OUTLINE “BIODIVERSITY AND NATURE CONSERVATION”

### (1) GENERAL

<b>SCHOOL</b>	ENGINEERING SCHOOL		
<b>ACADEMIC UNIT</b>	CIVIL ENGINEERING DEPARTMENT		
<b>LEVEL OF STUDIES</b>	POSTGRADUATE		
<b>COURSE CODE</b>	661002	<b>SEMESTER</b>	1 <sup>st</sup>
<b>COURSE TITLE</b>	<b>BIODIVERSITY AND NATURE CONSERVATION</b>		
<b>INDEPENDENT TEACHING ACTIVITIES</b> <i>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</i>		<b>WEEKLY TEACHING HOURS</b>	<b>ECTS Credits</b>
Lectures		<b>3</b>	<b>6</b>
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).			
<b>COURSE TYPE</b> <i>general background, special background, specialised general knowledge, skills development</i>	Scientific Area		
<b>PREREQUISITE COURSES:</b>	NO		
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	Greek		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	NO		
<b>COURSE WEBSITE (URL)</b>	<a href="http://www.environmentalprotection.gr/?page_id=152">http://www.environmentalprotection.gr/?page_id=152</a>		

### (2) LEARNING OUTCOMES

<p><b>Learning outcomes</b></p> <p><i>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.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> <li>• <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i></li> <li>• <i>Descriptors for Levels 6, 7 &amp; 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i></li> <li>• <i>Guidelines for writing Learning Outcomes</i></li> </ul>
<p>Upon completion of the course, students will have:</p> <ul style="list-style-type: none"> <li>▪ In-depth knowledge and critical understanding of the theory and principles of biodiversity and the interrelationships of its levels with the basic effects from infrastructure development in nature conservation areas.</li> <li>▪ Knowledge and skills to realize and combine the complexity of the relations and interactions between the ecosystem structures and functions and the human impacts from the one side with the sustainable management aiming at the conservation of species and habitats.</li> </ul>

- Knowledge of the tools for applied policy measures in the section of nature conservation and management in Greece and EU, as well as how to focus and contribute to the problems solving from their implementation methodology in Greece.
- Analyze the possible effects to the natural environment and to the biodiversity elements and propose measures to minimize the consequences with the priority given to the conservation of the important for the national and European legislation for species, habitats and areas.
- Cooperate and synthesize (as a member of a group) an integrated management and restoration plan for the biodiversity and the natural ecosystems of an area where a development work (environmental or not) is under preparation.
- Know and apply the rules and recommendations related to environmental protection.

#### **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*  
*Adapting to new situations*  
*Decision-making*  
*Working independently*  
*Team work*  
*Working in an international environment*  
*Working in an interdisciplinary environment*  
*Production of new research ideas*

*Project planning and management*  
*Respect for difference and multiculturalism*  
*Respect for the natural environment*  
*Showing social, professional and ethical responsibility and sensitivity to gender issues*  
*Criticism and self-criticism*  
*Production of free, creative and inductive thinking*  
*.....*  
*Others...*

- Search for, analysis and synthesis of data and information, with the use of the necessary technology
- Adapting to new situations
- Decision-making
- Working independently
- Team work
- Working in an interdisciplinary environment
- Production of new research ideas
- Project planning and management
- Respect for the natural environment
- Showing social, professional and ethical responsibility and sensitivity to gender issues

### **(3) COURSE CONTENT**

- Basic principles on the ecology and biodiversity of Greece – Basic guidelines for the Greek and European legislation on nature conservation.
- Protected areas – at global level, at the European level and at the National level where the main emphasis is given (Institutional framework for the conservation and management: Directive 79/409 on the protection of birds and Directive 92/43 on the protection of species and habitats within protected areas categories. Horizontal management measures for the Special Protection Areas. European ecological network NATURA 2000 (list of protected NATURA 2000 areas, maps in the NATURA 2000 areas,

implementation report in NATURA 2000 areas).

- Protected areas management – Management Institutions, legislation, problems, perspectives.
- National Biodiversity Strategy and its implementation in the frame of the EU Biodiversity Strategy 2020.
- Invasive Alien Species.
- Specific Environmental Studies for Nature protected Areas, Ornithological Studies (templates and how to work such a study, implementation problems and solutions.
- International Conventions (Global Convention for the Biodiversity Conservation. Vision and Targets.
- Ecosystems and Ecosystem Services. Mapping and Assessment, economic valuation of the ecosystems and of the biodiversity. Funding.
- Protection of the marine biodiversity. Access to genetic resources and sharing of benefits.
- Cartagena Protocol on Biosafety. Strategic goals and topics of particular interest (assessment and risk management, liability and restoration, transboundary movement of living organisms, etc.). Strategic Plan for the implementation of the Protocol. Evaluation Protocol.
- Genetically Modified Organisms. Introduction – development of agricultural policy in Europe. Genetically Modified Organisms – benefits and problems. European legislation – authorization process. List of authorized GMOs by the EU Directive 2001/18 "for the deliberate release of GMOs the environment "and relevant Resolutions.
- Regulation 1829/2003 on GM food and feed. Regulation 1946/2003 on the transboundary movement of GMOs Regulation 1830/2003 on traceability and labeling of GMOs and traceability of food and feed produced from GMOs and amending Directive 2001/18. Evaluation procedure GMO authorization applications the EU by EFSA. Political and economic aspects of the mentioned issues.

#### (4) TEACHING & LEARNING METHODS – EVALUATION

<b>DELIVERY</b> <i>Face-to-face, Distance learning, etc.</i>	Face to face (lectures, laboratories), Distance Learning
<b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b> <i>Use of ICT in teaching, laboratory education, communication with students</i>	<ul style="list-style-type: none"> <li>▪ Access to database and specialized coding software related to environmental and spatial planning legislation.</li> <li>▪ Communication and Electronic Submission.</li> <li>▪ Support of teaching through the website.</li> <li>▪ Presentation in PP, video and linking with specialized websites through the Internet.</li> </ul>

<p style="text-align: center;"><b>TEACHING METHODS</b></p> <p><i>The manner and methods of teaching are described in detail.</i></p> <p><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></p> <p><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></p>	<table border="1"> <thead> <tr> <th style="text-align: center;"><i>Activity</i></th> <th style="text-align: center;"><i>Semester workload</i></th> </tr> </thead> <tbody> <tr> <td>Lectures</td> <td style="text-align: center;">29</td> </tr> <tr> <td>Interactive teaching</td> <td style="text-align: center;">10</td> </tr> <tr> <td>Field work and data collection</td> <td style="text-align: center;">6</td> </tr> <tr> <td>Study and literature analysis</td> <td style="text-align: center;">45</td> </tr> <tr> <td>Educational trips</td> <td style="text-align: center;">6</td> </tr> <tr> <td>Elaboration of a small project</td> <td style="text-align: center;">30</td> </tr> <tr> <td>Preparation for team work writing</td> <td style="text-align: center;">24</td> </tr> <tr> <td><i>Course total</i></td> <td style="text-align: center;"><b>150</b></td> </tr> </tbody> </table>	<i>Activity</i>	<i>Semester workload</i>	Lectures	29	Interactive teaching	10	Field work and data collection	6	Study and literature analysis	45	Educational trips	6	Elaboration of a small project	30	Preparation for team work writing	24	<i>Course total</i>	<b>150</b>
	<i>Activity</i>	<i>Semester workload</i>																	
	Lectures	29																	
	Interactive teaching	10																	
	Field work and data collection	6																	
	Study and literature analysis	45																	
	Educational trips	6																	
	Elaboration of a small project	30																	
	Preparation for team work writing	24																	
<i>Course total</i>	<b>150</b>																		
<p style="text-align: center;"><b>STUDENT PERFORMANCE EVALUATION</b></p> <p><i>Description of the evaluation procedure</i></p> <p><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></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<ul style="list-style-type: none"> <li>▪ Written examination: 80%</li> <li>▪ Interactive teaching and participation in the projects discussions: 20%</li> </ul>																		

## (5) ATTACHED BIBLIOGRAPHY

- Science for Environment Policy (2015). Ecosystem Services and the Environment. In-depth Report 11 produced for the European Commission, DG Environment by the Science Communication Unit, UWE, Bristol.
- European Commission (2013). Mapping and Assessment of Ecosystems and their Services. An analytical framework for ecosystem assessments under Action 5 of the EU Biodiversity strategy to 2020. Technical Report – Discussion paper
- European Commission (2014). Mapping and Assessment of Ecosystems and their Services. Indicators for ecosystem assessments under Action 5 of the EU Biodiversity strategy to 2020. Technical Report - Discussion paper
- Υπουργείο Περιβάλλοντος, Ενέργειας και Κλιματικής Αλλαγής (ΥΠΕΚΑ) (2014). Εθνική Στρατηγική και Σχέδιο Δράσης για τη Βιοποικιλότητα. Παναγιώτης Δημόπουλος, Επιστημονική Επιμέλεια έκδοσης. ISBN: 978-960-7284-31-0, Αθήνα, 134 σελ.
- Δημόπουλος Π., Παντής Ι., Τζανουδάκης Δ. & Δ. Βαγενάς (2008): Εγχειρίδιο Αειφορικής Διαχείρισης Προστατευόμενων Περιοχών, Εκδόσεις ΠΑΠΠΑΣ Ο.Ε., σελ. 643. ISBN 978-960-89071-2-6, Αθήνα.
- Δημόπουλος Π., E. Bergmeier, K. Θεοδωρόπουλος, P. Fischer & M. Τσιαφούλη (2005): Οδηγός Παρακολούθησης Τύπων Οικοτόπων και Φυτικών Ειδών στις περιοχές του Δικτύου Natura 2000 με Φορείς Διαχείρισης. ISBN 960-233-168-2. Πανεπιστήμιο Ιωαννίνων, Υ.ΠΕ.ΧΩ.Δ.Ε., 172 σελ.

### Scientific Journals:

- Journal for Nature Conservation, Biodiversity Conservation, Biological Conservation