

## COURSE DESCRIPTION

### 1. GENERAL

<b>SCHOOL</b>	ENVIRONMENT, GEOGRAPHY AND APPLIED ECONOMICS		
<b>DEPARTMENT</b>	GEOGRAPHY		
<b>LEVEL OF COURSE</b>	UNDERGRADUATE		
<b>COURSE CODE</b>		<b>SEMESTER</b>	7 <sup>th</sup>
<b>COURSE TITLE</b>	ECOSYSTEM SERVICES – ASSESSMENT AND MAPPING		
<b>STRUCTURE OF TEACHING ACTIVITIES</b>		<b>TEACHING HOURS PER WEEK</b>	<b>NUMBER OF CREDITS ALLOCATED (ECTS)</b>
Lectures and Laboratory Classes		3	5
<b>TYPE OF COURSE</b>	ELECTIVE		
<b>PREREQUISITES</b>	-		
<b>LANGUAGE OF INSTRUCTION</b>	GREEK		
<b>COURSE OFFERED TO ERASMUS STUDENTS</b>	YES, ENGLISH / FRENCH (UPON REQUEST)		
<b>(URL)</b>			

### 2. EXPECTED LEARNING OUTCOMES

<p><b>Learning outcomes</b> <i>Describe the objectives of the course as well as the expected learning outcomes</i></p>
<p>The course of assessment and mapping of ecosystem services (ES) aims to introduce the students to the various biophysical processes that are able to supply benefits to people, those being defined as services. The students will be able to familiarize themselves with the notions of nature's contributions to people, social-ecological systems and ecosystem services. Through lectures, practical, hands-on exercises and small projects, students will acquire the necessary skills to be able to assess and map ecosystem services.</p> <p>By the end of this course, the students will be able to:</p> <ol style="list-style-type: none"> <li>1. <b>Explain</b> the basic terms and classification systems of ecosystem services</li> <li>2. <b>Differentiate</b> between the notions of supply, use, flow, value and demand for ES</li> <li>3. <b>Interpret</b> ecosystem service information for at least three different systems (marine, terrestrial, rural)</li> <li>4. <b>Use</b> data and mapping tools for the <b>assessment</b> of ecosystem service values for a given area</li> <li>5. <b>Evaluate</b> and <b>choose</b> among the different methods of ES for a given case</li> <li>6. <b>Understand and evaluate</b> the pros and cons of the use of geographic information for ecosystem service assessments.</li> </ol>
<p><b>General skills</b></p>
<p>Search, analysis and synthesis of data and information with the use of relevant technology</p>

Decision making  
 Autonomous independent project  
 Group work  
 Respect to the natural environment  
 Self- and peer-review  
 Free, creative and inductive reasoning

### 3. COURSE CONTENTS

1. Social-ecological systems: theory and conceptual frameworks
2. Biophysical processes, environment and ecosystem services
3. Classification systems of ecosystem services
4. Natural capital, supply, use, value and demand of ecosystem services
5. Assessment of ecosystem services: methods and tools
6. Applications of ES assessments in different systems (marine, terrestrial, rural)
7. Methods of ES mapping and introduction to basic tools for ES assessments (participatory mapping, crowdsourcing, earth observation, R, ArcGIS, InVEST)
8. Data for ES assessments: prerequisites, major data sources, challenges
9. Use of reading of ES maps, user-centered design and thinking
10. Comparative analysis and choices for ES mapping methods for given examples.

### 4. TEACHING AND ASSESSMENT METHODS

<b>TYPE OF LECTURES</b>	Face to face <ul style="list-style-type: none"> <li>• Classroom lectures</li> <li>• Hands-on practical exercises</li> </ul>	
<b>ICT USE</b>	Use of online lecturing facilities, use of e-class platform and freeware use for practical exercises.	
<b>TEACHING STRUCTURE</b>	<b>Activity</b>	<b>Hours per semester</b>
	Lectures	20
	Supervised practicals	20
	Seminars	3
	Field work	6
	Project work	30
	Self study	48
	<b>TOTAL</b>	<b>127</b>
<b>ASSESSMENT METHODS</b>	Assessment language: Greek (English or French upon request)  Assessment methods <ul style="list-style-type: none"> <li>• Theoretical written exam (50%) that will include:             <ul style="list-style-type: none"> <li>- Multiple choice questions</li> <li>- Open ended questions</li> </ul> </li> <li>• Group work report (50%) with short oral presentation.</li> </ul>	

## 5. RECOMMENDED READING

*Books:*

1. Burkhard B, Maes J (Eds) (2017) Mapping Ecosystem Services. Advanced Books. <https://doi.org/10.3897/ab.e12837> (open access)
2. Δημόπουλος Π. & Ι. Κόκκορης (2017): Χαρτογράφηση και Αξιολόγηση των Οικοσυστημάτων και των Υπηρεσιών τους. Εκδόσεις ΚΑΤΑΓΡΑΜΜΑ. ISBN 978-960-9407-39-7 (in Greek).

*-Relevant scientific journals:*

1. Ecosystem Services
2. Ecosystems and People
3. OneEcosystem