COURSE DESCRIPTION

1. GENERAL

SCHOOL	ENVIRONMENT, GEOGRAPHY AND APPLIED ECONOMICS
DEPARTMENT	GEOGRAPHY
LEVEL OF COURSE	UNDERGRADUATE
COURSE CODE	GEO317 **SEMESTER** 7th
COURSE TITLE	ECOSYSTEM SERVICES – ASSESSMENT AND MAPPING

STRUCTURE OF TEACHING ACTIVITIES	TEACHING HOURS PER WEEK	NUMBER OF CREDITS ALLOCATED (ECTS)
Lectures and Laboratory Classes	3	5

TYPE OF COURSE	ELECTIVE
PREREQUISITES	-
LANGUAGE OF INSTRUCTION	GREEK
COURSE OFFERED TO ERASMUS STUDENTS	YES, ENGLISH / FRENCH (UPON REQUEST)
(URL)	

2. EXPECTED LEARNING OUTCOMES

Learning outcomes

Describe the objectives of the course as well as the expected learning outcomes

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.

By the end of this course, the students will be able to:
1. **Explain** the basic terms and classification systems of ecosystem services
2. **Differentiate** between the notions of supply, use, flow, value and demand for ES
3. **Interpret** ecosystem service information for at least three different systems (marine, terrestrial, rural)
4. **Use** data and mapping tools for the **assessment** of ecosystem service values for a given area
5. **Evaluate** and **choose** among the different methods of ES for a given case
6. **Understand and evaluate** the pros and cons of the use of geographic information for ecosystem service assessments.

General skills

Search, analysis and synthesis of data and information with the use of relevant technology
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

TYPE OF LECTURES	Face to face • Classroom lectures • Hands-on practical exercises
ICT USE	Use of online lecturing facilities, use of e-class platform and freeware use for practical exercises.
TEACHING STRUCTURE	

Activity	Hours per semester
Lectures	20
Supervised practicals	20
Seminars	3
Field work	6
Project work	30
Self study	48
TOTAL	127

ASSESSMENT METHODS	Assessment methods
	• Written exam on the course theory (50%) including:
	   - Multiple choice questions
	   - Short open ended questions
	• Group assignment (50%)

5. RECOMMENDED READING

Burkhard B, Maes J (Eds) (2017) Mapping Ecosystem Services. Advanced Books. https://doi.org/10.3897/ab.e12837
(Open Access)

-Relevant international journals:
Ecosystem Services
Ecosystems and People
OneEcosystem
People and Nature