MODULE DESCRIPTION

General

School	Geotechnical Sciences
Department	Forest and Natural Environment Sciences

Module Information

Title	GEOGRAPHIC INFORMATION SYSTEMS
Course Code	E.Y.1
Level of Studies	UNDERGRADUATE
Teaching Period	AUTUMN TERM
Attendance Type	COMPULSORY
Prerequisites	

Orientation	Weekly Hours		Year	Semester	ECTS
	Lectures	Laboratory work			
ECOLOGY AND BIODIVERSITY CONSERVATION	2	2	3	5	4

Faculty Instructor

PANTELEIMON XOFIS

Type of Module

- [x] General Foundation
- [ ] Specific Foundation / Core
- [ ] Knowledge Deepening / Consolidation

Mode of Delivery

- [x] Face to face
- [x] Distance learning

Digital Module availability

- [x] E-Study Guide
- [x] Departments Website
- [ ] E-Learning

Language

	Teaching	Examination
Greek	☑	☑
English	☐	☐

Erasmus

- [x] The course is offered to exchange programme students

Learning Outcomes

Geographic Information Systems (GIS) are a modern and essential tool in the analysis and management of the environment, while the methods applied in GIS are constantly evolving. The course aims to give the student the necessary theoretical and technical knowledge so that he/she can create and analyze a GIS. Upon completion of the course the student: will know what a GIS is and will be able to create and find data. He/she will know methods of analyzing geographical data, transforming and modifying data in order to produce useful information from them. He/she will know the differences, advantages and disadvantages of different forms of geographic data. He/she will be able to create a geo-database. He/she will know what coordinate systems are and how to choose the right one in each case. Finally he/she will be able to visualize geographical data and produce cartographic backgrounds.

List of General Competences

- [x] Apply knowledge in practice
- [x] Work autonomously
- [x] Work in teams
- [x] Work in an international context
- [x] Work in an interdisciplinary team
- [x] Respect natural environment
- [x] Advance free, creative and causative thinking

Module Content (Syllabus)

- The Concept and historical evolution of Geographic Information Systems
- Geographic data formats - properties, advantages, disadvantages.
- Generate geographic data and search sources
- Coordinate systems, projection systems and georeferencing
- Descriptive information, tables, queries.
- Geographical data analysis and information generation
- Geo-databases
- Data visualization and production of cartographic backgrounds.
- Introduction to spatial analysis
- Introduction to spatial interpolation methods

Educational Material Types

- [x] Book
- [x] Notes
- [x] Slide presentations
- [ ] Video lectures

- [x] Multimedia
- [x] Interactive exercises
- [ ] Other:

Use of Information and Communication Technologies

- [x] Use of ICT in Course Teaching
- [x] Use of ICT in Laboratory Teaching
- [x] Use of ICT in Communication with Students
- [x] Use of ICT in Student Assessment

Module Organization

Please fill in the workload of each course activity

Course Activity	Workload (hours)
Lectures	26
Laboratory work	26
Field Trip/Short Individual Assignments	28
Independent Study	20
Total	100

* 1 ECTS unit corresponds to 25 hours of workload

Student Assessment Methods

- [x] Written Exam with Multiple Choice Questions
- [x] Written Exam with Short Answer Questions
- [x] Written Exam with Extended Answer Questions
- [x] Written Assignment
- [x] Report
- [x] Oral Exams
- [x] Laboratory Assignment

Suggested Bibliography (Eudoxus and additional bibliography)

1. Longley, P. A., Goodchild, M. F., Maquire, D. J., Rhind, D. W. (2010) Συστήματα και Επιστήμη Γεωγραφικών Πληροφοριών. Εκδοσεις Κλειδαριθμος.
2. Κουτσόπουλος Κωστής Χ., (2017), Γεωγραφικά Συστήματα Πληροφοριών και Ανάλυση Χώρου 2η Εκδοση. , Εκδόσεις ΠαπασωτηρίουForman, R. T. T. (1995) Land Mosaics, The ecology of landscapes and regions. Cambridge University Press

3. Συλλαίος Ν., Γήτας Ι., Συλλαίος Γ., (2007), Εισαγωγή στα γεωγραφικά συστήματα πληροφοριών και στην τηλεπισκόπηση, Εκδόσεις Γιαχούδη.