

MODULE DESCRIPTION

General

School	Geotechnical Sciences
Department	Forest and Natural Environment Sciences

Module Information

Title	PRINCIPLES OF SPATIAL ANALYSIS
Course Code	OPT.19
Level of Studies	UNDERGRADUATE
Teaching Period	AUTUMN TERM
Attendance Type	ELECTIVE COMPULSORY
Prerequisites	GEOGRAPHIC INFORMATION SYSTEMS

Orientation	Weekly Hours		Year	Semester	ECTS
	Lectures	Laboratory work			
LANDSCAPE ARCHITECTURE AND RESTORATION	2	1	4	7	3

Faculty Instructor

PANTELEIMON XOFIS

Type of Module

- General Foundation
- Specific Foundation / Core
- Knowledge Deepening / Consolidation

Mode of Delivery

- Face to face
- Distance learning

Digital Module availability

- E-Study Guide
- Departments Website
- E-Learning

Language

	Teaching	Examination
Greek	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
English	<input type="checkbox"/>	<input type="checkbox"/>

Erasmus

- The course is offered to exchange programme students

Learning Outcomes

The aim of the course is to present methods used for the analysis and interpretation of spatial data. The course includes a theoretical framework with many practical applications of examples, in a Geographic Information Systems environment. According to the desired learning outcomes, after the successful completion of the course, the students will be able to know and analyze concepts of spatial statistics such as spatial autocorrelation, spatial pattern analysis, spatial boundary effect, spatial density calculation and hot spot mapping. They will also be able to understand the meaning of spatial interpolation, Geostatistics and Kriging.

List of General Competences

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

Module Content (Syllabus)

- Introduction to spatial analysis
- Network Analysis
- Spatial pattern analysis with spatial-quantitative indicators
- Proximity Analysis.
- Spatial autocorrelation assessment.
- Spatial interpolation Methods, Inverse Distance Weighting Method (IDW) and Kriging
- Spatial Regression

Educational Material Types

- Book
- Notes
- Slide presentations
- Video lectures
- Multimedia
- Interactive exercises
- Other:

Use of Information and Communication Technologies

- Use of ICT in Course Teaching
- Use of ICT in Laboratory Teaching
- Use of ICT in Communication with Students
- 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	13
Field Trip/Short Individual Assignments	20
Independent Study	16
Total	75

* 1 ECTS unit corresponds to 25 hours of workload

Student Assessment Methods

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

Suggested Bibliography (Eudoxus and additional bibliography)

1. Κουτσόπουλος Κωστής Χ., (2017), Γεωγραφικά Συστήματα Πληροφοριών και Ανάλυση Χώρου 2^η Έκδοση., Εκδόσεις Παπασωτηρίου.