

# Optional Module: IDRISI - Applications in Coastal Zone Research and Management



Course code	IDRISI_E_COSTAL
Dates	2 times per year
Duration	2 months
Accreditation	Elective Subjects UNIGIS MSc, UNIGIS Professional
Registration deadline	2 weeks before course starts
Credits	3 ECTS
Module Language	English

## Course Description and Course Objectives

This module explores the implementation of GIS techniques in the research and management of coastal zones. It will also identify the difficulties that arise due to their dynamic character, linear feature and their three dimensional aspect. The available exercises will introduce you to some of the GIS applications (and their complexity) in the study of coastal zones. The course objective is not to teach the IDRISI software per se but to demonstrate some of the methods used to implement IDRISI software applications related to coastal zone research.

## Course Outline

- Coastal fisheries management
- Mapping seagrass
- Modeling bathymetry
- Coastal change detection
- Monitoring coastal erosion
- Modeling the impact of sea level rise
- Aquaculture suitability
- Planning for coastal development

## Methods

Suitability analysis using at the beginning simple, and later more advanced GIS procedures - mapping seagrass using unsupervised classification and Principle Component Analysis (PCA) on satellite images - modeling bathymetry based on remotely sensed data and using both Map Algebra and PCA - change detection over time by using pairwise comparison techniques and Change Vector Analysis - distance operations and modeling sand erosion and deposition in time - modeling future sea level rise and its impact, including also uncertainty in the model - distance analysis - viewshed analysis.

Module meets  
[www.euromastergi.org](http://www.euromastergi.org)  
requirements

Elective Modules  
SYLLABUS



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**Instruction:**  
**Anna Karnassioti**

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Born in Athens (Greece) Anna Karnassioti holds a University Degree in Geology (School of Geology - Faculty of Sciences of the Aristotle University of Thessaloniki, Greece). Since 2007 works for the UNIGIS International team of the University of Salzburg Centre for Geoinformatics and part of her tasks are the provide feedback to a student based on availability of correct answers. These should be organization and maintenance of the LMS (Learning Management System) content. Staff member of the IDRISI Resource Centre SALZBURG (IRC).

## Methods

The module is delivered in form of an instructed self-study that is based on explorative learning process. Theoretical concepts are complemented with practice oriented examples and demonstrated with help of multimedia elements. A discussion forum is used for communication among students and the instructor. Upon completion of the module students are requested to evaluate the module, which is a part of our quality assurance policy and practice.

## Software Requirements

IDRISI software from Clarklabs

## Prerequisites

Good command of English, be acquainted with the IDRISI system environment and its basic applications.

## Assessment and Grading

Instructor assessment is the part of a course that reflects student's achievements in this module and is conducted through assessing module assignments. It counts towards the academic qualification.



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