## **Environmental Applications of GIS: Spatial Analysis and Modeling**

**Coordinator:** Dr Themistoklis Kontos

**Lecturers/Instructors**: Dr Themistoklis Kontos

**ECTS Credits**: 2

**Duration**:   April – May 2019

**Pre-requisites**:  Spatial Analysis with GIS in Winter Semester @ CEU (or equivalent)

**Course e-learning site:** <https://aegeanmoodle.aegean.gr>

### Aims, Objectives and Learning Outcomes

The aim of the course "Environmental Applications of GIS: Spatial Analysis and Modeling" is to introduce the students to environmental applications using Spatial Analysis and Modeling. The content outline of the course comprises of the following lectures and laboratories:

* Spatial Analysis of Vector Data
* Spatial Analysis of Raster Data
* Spatial Modeling: Model Builder
* Environmental Application of GIS: Delineation of Climatic Zones and Trends

The students will be assigned in groups to develop spatial models to analyze timeseries of large-scale spatial data, in order to assess the trend of climatic parameters and to delineate the climatic zones.

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| **Learning Outcome** | **Assessment** | **Activities** | **Estimated Workload** |
| * Understand the overall concept of spatial analysis
* Be familiar with large-scale spatio-temporal data
* Learn about different techniques for spatial modeling using GIS tools and scripting languages
* Learn about different methods for assessing trends in spatial variables
 | Students will be individually graded based on:* Individual Assessment of Laboratory Exercises (30%)
* Evaluation of Group Written Report and Oral Presentation – Case Study (70%)
 | Lectures LaboratoriesCase study  | 10h10h30h |
| Total hours 50 |   |   | 50 |

**Additional information including a full description of course assessments, schedule, and readings can be found in the full course syllabus located in at the course’s e-learning site.**