AE2503 Environmental Data 7.5 credits

Miljödata

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus for AE2503 valid from Autumn 2007

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Built Environment,Environmental Engineering

Specific prerequisites

Three years (at least 180 higher education credits) of academic studies within applied physics and chemistry, land surveying, agricultural technology, engineering geology or geosciences.

Documented proficiency in English B or equivalent.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

Aim of the course is to give knowledge and experience in theory and practice of geographic information systems (GIS) – a set of computer tools to handle spatial (georeferenced) data. GIS is a typical decision support tool for spatial planning and an analysis tool for environmental studies. GIS capabilities include geodatabase, geovisualization and geoprocessing functions. During the course the students will get familiar with the raster and vector view of the world and practice data visualization and manipulation tasks applied to real environmental datasets, such as remote sensing, geochemical, geophysical and digital elevation data.

After the course the students should be able to:

- Describe the way geographical information systems (GIS) are built up and operate.
- Give examples of and describe data collection methods and input techniques, and have some basic knowledge of remote sensing data and related physical characteristics.
- Choose and justify appropriate data processing and analysis approaches according to the characteristics of data and intended analysis outcome.
- Construct models including a sequence of GIS operations, and perform and evaluate sensitivity analysis.
- Be able to interpret and relate the GIS analysis outcomes to metadata and source data quality, discuss errors and suggest ways of improving the quality of analysis result.
- Be able to design a GIS case study to solve a specific task/problem.
- Communicate the results of a GIS study in a scientific report.

Course contents

Geographic Information Technology. Remote Sensing and Image Analysis.

Course literature

Course compendium, lecture notes and exercise instructions (available from the course homepage).

Examination

- LAB1 - Laboratory Work, 3.0 credits, grading scale: P, F
- TEN1 - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

Other requirements for final grade

Written open book examination, participation in obligatory computer labs, submitted lab reports.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.