AE2503 Environmental Data 7.5 credits

Miljödata

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

Establishment

Course syllabus for AE2503 valid from Autumn 2020

Grading scale

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

Education cycle

Second cycle

Main field of study

Environmental Engineering, The Built Environment

Specific prerequisites

Bachelor's degree or at least 150 ECTS credits in the field of Civil Engineering, Environmental Engineering, or another subject with clear relevance to the course. Proficiency in English (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

After the course the students should be able to:

•   Describe the way geographical information systems (GIS) are built up and operate.

•   Compare and evaluate data collection methods and input techniques.

•   Interpret remote sensing data and describe related physical phenomena.

•   Characterize different types of spatial data using visualization and statistics.

•   Choose and justify appropriate data processing and analysis approaches according to the characteristics of data and intended analysis outcome.

•   Build models comprising sequences of GIS operations, and perform and evaluate sensitivity analysis.

•   Interpret and relate the GIS analysis outcomes to source data quality, discuss errors and uncertainty and suggest ways of improving the result.

•   Design a GIS case study to solve a specific task.

•   Document and communicate the results of a GIS study.

Course contents

The course gives knowledge and experience in theory and practice of geographic information systems (GIS) – a set of computer tools to handle spatial (georeferenced) data. During the course the students will get familiar with the raster and vector view of the world and practice data visualization and analysis tasks applied to real environmental datasets. The course comprises collection of field data using GPS, data input and conversion, data visualization and statistics, data quality and integration, georeferencing, Remote Sensing data, multispectral classification, image enhancement and analysis, data interpolation.

Examination

 • DAT1 - Computer Assignment, 3.0 credits, grading scale: P, F

 • LEX1 - Continuous Assessment, 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.

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

Other requirements for final grade

Written open book examination (TEN1 4,5 credits), participation in obligatory computer labs, submitted lab reports (LAB1 3,0 credits).

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.