AE2503 Miljödata 7,5 hp

Environmental Data

Fastställande

Betygsskala

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

Utbildningsnivå

Avancerad nivå

Huvudområden

Miljöteknik, Samhällsbyggnad

Särskild behörighet

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.

Undervisningsspråk

Undervisningsspråk anges i kurstillfällesinformationen i kurs- och programkatalogen.

Lärandemål

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.

Kursinnehåll

Geographic Information Technology. Remote Sensing and Image Analysis.

Kurslitteratur

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

Examination

- TEN1 - Examination, 4,5 hp, betygsskala: A, B, C, D, E, FX, F
- LAB1 - Laboratory Work, 3,0 hp, betygsskala: P, F

Examinator beslutar, baserat på rekommendation från KTH:s handläggare av stöd till studenter med funktionsnedsättning, om eventuell anpassad examination för studenter med dokumenterad, varaktig funktionsnedsättning.

Examinator får medge annan examinationsform vid omexamination av enstaka studenter.

När kurs inte längre ges har student möjlighet att examineras under ytterligare två läsår.

Övriga krav för slutbetyg

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

Etiskt förhållningssätt

- Vid grupparbete har alla i gruppen ansvar för gruppens arbete.
- Vid examination ska varje student ärligt redovisa hjälp som erhållits och källor som använts.
- Vid muntlig examination ska varje student kunna redogöra för hela uppgiften och hela lösningen.