AE2104 Environmental Measuring and Monitoring 7.5 credits

Miljömätning och monitoring

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 AE2104 valid from Spring 2014

Grading scale

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

Education cycle

Second cycle

Main field of study

Built Environment,Environmental Engineering

Specific prerequisites

Proficiency in English (English B or equivalent). Bachelor's degree in the field of civil engineering, environmental engineering, or another subject with clear relevance to the course, of at least 180 higher education credits, which includes the following: Basic knowledge in mathematics for at least 20 higher education credits; Basic knowledge in numerical analysis, programming, or equivalent, for at least 6 higher education credits; Basic knowledge in earth sciences, or equivalent, for at least 6 higher education credits; Environmental Data (course AE2503), 7.5 credits.

Language of instruction

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

Intended learning outcomes

After the course is completed the student shall be able to:

- formulate, realize and analyse site investigation programmes for hydrological, hydrogeological and environmental monitoring
- Use field equipment and instruments (especially geophysical measurement techniques) for measurements of soil, water and environmental properties
- Scientifically select investigation strategies, estimate data quality and analyse and evaluate measurement data using statistical and modelling technique

Course contents

- Land and water investigation techniques
- Investigation strategies
- Formulation of monitoring programmes
- Applied measurement techniques for dynamic and static processes
- Flow measurements Field sampling techniques
- Groundwater sampling and hydraulic field tests Physical properties of soil and water
- Geophysical measurement techniques (a.o. electrical and electromagnetical measurements, seismic, ground penetrating radar, spectrometer)
- Evaluation techniques
- Statistical methods for time series and spatial analysis
- Modelling of geophysical data
- Evaluation of hydraulic tests

Examination

- TEN1 - Examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - GIS Laboratory Work, 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

Approved written examination (TEN1; 4c) and approved exercise and laboratory course (ÖVN1; 3.5c)

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.