



AE2104 Environmental Measuring and Monitoring 7.5 credits

Miljömätning och monitoring

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

Establishment

The official course syllabus is valid from the spring semester 2026 as decided by the Director of First and Second Cycle Education: HS-2025-1700. Date of decision: 2025-09-25.

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 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 basic knowledge in mathematics, physics, chemistry or earth sciences for at least 30 higher education credits. Proficiency in English (English B or equivalent).

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.

Examination

- ÖVNA - Laboratory work, 0.5 credits, grading scale: P, F
- ÖVNB - Case study exercise, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- FÄL1 - Fieldwork and data presentation, 2.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN2 - Written exam, 3.0 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

The grading scale is A–F. The final grade is based on a weighted assessment of the different components of the course: 50% written exam, 20% case study report, and 30% field report.

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.