



AI2609 Geodetic Sensor Technology 7.5 credits

Geodetisk sensorteknik

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

The course syllabus is valid from Fall 2023 according to the Head of school decision:A-2023-2330, 3.2.2.Decision date: 2023-09-29

Grading scale

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

Education cycle

Second cycle

Main field of study

Built Environment

Specific prerequisites

Bachelor's degree in civil engineering, geomatics, technical physics, computer science, statistics, or mathematics.

At least 3 credits in each of the following subjects: Programming, Linear Algebra, Single-Variable Analysis, Probability Theory, and Statistics.

English B/6 proficiency.

Language of instruction

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

Intended learning outcomes

After completing the course, the student should be able to:

- Explain the fundamental principles of geodetic sensor technology and describe their application areas
- Process data from the sensors, analyze, evaluate, and interpret the results.
- Apply geodetic sensor techniques for monitoring deformations/movements of natural and artificial objects
- Apply geodetic sensor techniques for Earth observations and studies related to climate change.

Course contents

- Differential Interferometry Synthetic Aperture Radar (DInSAR) and its application for monitoring movements of natural and artificial objects
- Satellite altimetry and its application for determining changes in water levels.
- GNSS-Reflectometry as a tool for monitoring water levels.
- Satellite gravimetry and its applications in climate research

Examination

- LAB1 - Laboratory work, 2.5 credits, grading scale: P, F
- PRO1 - Project, 3.5 credits, grading scale: P, F
- TEN1 - Written exam, 1.5 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.

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.