



# HS1005 Surveying and Mathematical Statistics 7.5 credits

Fältnätningsteknik med matematisk statistik

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 HS1005 valid from Spring 2012

## Grading scale

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

## Education cycle

First cycle

## Main field of study

Built Environment, Technology

## Specific prerequisites

Students in year 1 of the Bachelor of Science in Engineering programmes Constructional Engineering and Design or Engineering and Economics specialising in Constructional Engineering and Design

## Language of instruction

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

## Intended learning outcomes

Outcomes to receive an E grade.

Upon completion of the course, the student shall be able to:

Calculate polar stake-out data for points

Calculate plane coordinates for new points using these surveying methods:

- Polar coordinates
- Rectangular coordinates
- Tying in
- Intersection

Calculate elevation coordinates for new points using these surveying techniques:

- Levelling
- Trigonometric levelling

Set up and take measurements with theodolites and levelling instruments

Keep and calculate measurement protocols

Understand the structure and function of the GPS system

Give an account of the application of theory of errors in measurement technology

Transform points between two-dimensional uniform coordinate systems

## Course contents

Reference systems in a plane and elevation

Polar stake-out

Polar and rectangular measurements

Free station

Traverse

Levelling, trigonometric levelling

GPS

Theory of errors

Coordinate transformations

## Course literature

Reading materials will be announced at the start of the course.

## Examination

- TEN1 - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F

- ÖVN1 - Exercises, 3.0 credits, grading scale: P, 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

Passing grade on written examination (TEN1, 4.5 credits), grading scale A-F

Passing grade on field exercises (ÖVN1, 3.0 credits), grading scale P/F

Overall course grade is based on grading scale A-F.

## 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.