AF1726 Surveying and Mathematical Statistics. Civil Engineering B 7.5 credits

Fältmätningsteknik med matematisk statistik. Anläggning B

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

Establishment

Course syllabus for AF1726 valid from Spring 2020

Grading scale

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

Education cycle

First cycle

Main field of study

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 setting-out data for points

Calculate plannar coordinates for new points using the surveying methods:

- Polar survey
- Orthogonal survey
- Arc section
- Intersection

Calculate elevation coordinates for new points using these surveying techniques:

- Levelling
- Trigonometric levelling

Set up and take measurements with theodolites and levelling instruments
Field notes and their processing
Understand the structure and function of the GPS system
Give an account of the application of theory of errors in surveying techniques
Transform points between two-dimensional uniform coordinate systems

Be able to account for :

Civil Engineering: borrow pit, quarried rock

Field surveys, mapping of soil properties.

Course contents

Reference systems in a plane and elevation
Polar stake-out
Polar and Orthogonal survey

Free station
Traverse
Levelling, trigonometric levelling
GPS
Theory of errors
Coordinate transformations

Study visits

Civil Engineering: borrow pit, quarried rock

Field surveys, mapping of soil properties.

Course literature

Kurslitteratur meddelas vid kursstart

Examination

- ÖVN1 - Exercises, 3.0 credits, grading scale: P, F
- TEN1 - Written examination, 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.

If the course is discontinued, students may request to be examined during the following two academic years.

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.