



# AF1714 Indoor Surveying 7.5 credits

Mätteknik, byggnads- och fastighetsdokumentation

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

## Establishment

Course syllabus for AF1714 valid from Spring 2011

## Grading scale

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

## Education cycle

First cycle

## Main field of study

Technology

## Specific prerequisites

Completed course in basic surveying techniques

## Language of instruction

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

# Intended learning outcomes

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

- Handle a laser scanner and perform laser scanning of objects such as internal and external structural walls with details
- Manage data from a laser scanner and produce models of a scanned object in software designed for this purpose
- Set up a total station and perform measurement of objects such as internal and external structural walls with details
- Code the objects to produce an automatic drawing with symbols
- Transfer survey data to a geodesic program. Use the program to edit and search for errors in measurement data.
- Plan photography of an object to produce the best possible photogrammetric result.
- Process images in photogrammetric software and use it to produce a 3D model of the object
- Process data from laser scanning, geodetic instruments, and photogrammetry in a CAD programme to produce a complete drawing.
- Perform an inventory and record technical information on materials and properties for operation and maintenance, energy declaration, environment, fire and safety.
- Perform an inventory and record legal documentation regarding a property with importance for management and real estate development

## Course contents

- Basic management of a laser scanner
- Planning and implementation of indoor surveying using a laser scanner
- Transfer to and editing of data in a program for processing laser scanner data.
- Creation of 3D CAD models based on data from a laser scanner
- Basics of terrestrial photogrammetry
- Handling of total stations
- Planning and implementation of indoor surveying using a total station
- Transfer to and editing of data in a geodesic programme
- Creation of a 3D CAD model using total station data
- Planning and implementation of photogrammetric inputs
- Processing data in a photogrammetric programme
- Creation of a 3D CAD model built on photogrammetric data
- Processing the produced CAD models in a CAD programme for creating dimensioned drawings
- Analysis and comparison of the three methods regarding costs, time and the precision of the results

- Techniques and methods for taking inventory and recording technical information on construction materials and installations, and their properties for operation and maintenance, energy declaration, environment, fire and safety.
- Technology to perform inventory and record legal documentation about a specific building and property of importance for management and real estate development

## Course literature

Compendiums in the respective subtopics

## Examination

- ÖVN1 - Exercises, 3.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Examination, 1.0 credits, grading scale: P, F
- LAB1 - 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.

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

TEN1 , Examination, 1 credit. Grading scale: P/F

LAB1, Laboratory work (laser scanning, geodetic surveying, and photogrammetry) 3 credits. Grading scale: P/F

ÖVN1, Submission of CAD exercises and documentation, 3.5 credits. 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.