AF1713 Technical Work, Methods and Tools 7.5 credits

Tekniskt arbete, metoder och verktyg

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 AF1713 valid from Autumn 2011

Grading scale

P, F

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Knowledge equivalent to entry requirements for bachelor of science programmes or basic and advanced requirements for the construction management programme.

Language of instruction

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

Intended learning outcomes

The overall purpose of the course is to give students an introduction to constructional engineering and insight into what it means to work as an engineer. Students will become acquainted with the interpretation of drawings and CAD. Students will participate and actively contribute to running a project.

In the project work element, after completion of the course, students will be able to:

- Actively participate in project work and contribute to the project group's result
- Perform a prestudy and define realistic goals
- Make a project schedule, associate it with project time reporting, and analyze the outcome
- Formulate background, problem, goal, limitations, and solution methods
- Express themselves in writing, both formally and informally
- Search scientific databases for information
- Evaluate sources
- Use MS Office to write and present a report
- Present a technical report logically and in an easily understood manner that catches the interest of the audience
- Lead meetings and, as project manager, lead the work group
- Compose a summons and agenda for a meeting and write a meeting protocol
- Produce documentation for project control and follow-up.
- Explain the importance of common rules in a group.
- Describe the role of group dynamics when a project group is formed.

In the exercise element, after completion of the course, students will be familiar with:

- Various types of drawings in the construction process
- Dimensioning principles
- The significance of different line types
- The content of architectural, construction design and survey drawings
- How to perform simple quantitation
- Geodetic coordinates
- Drawing and editing objects in CAD model environment
- the difference between relative and absolute coordinates
- How to create and manage layers
- How to write text in a construction specification
- Variables related to scale
- Creating and managing blocks and symbols

- How to cross-hatch and customize settings for a 2D object
- Develop setting out data from a CAD drawing

Course contents

Projects

- Project methodology and implementation of a project
- Computerized exercises in Excel, Word and PowerPoint
- Information searches
- Group dynamics
- Presentation techniques
- Lectures on constructional engineering
- Study visit

Exercises

- Drawings in the construction process
- Dimensioning, scales
- Architectural drawings
- Construction drawings
- Survey drawings
- Quantitation
- Interface and drawing environment in CAD
- Coordinate systems, lines, line types, and handling line types in scale
- Drawing and editing commands
- Layers
- Text and measurements
- Cross-hatching of 2D surfaces
- Blocks
- Site plan in a geodetic coordinate system

The use of site plans in setting out.

Course literature

Andersson, Erling S; Schwencke, Eva: Projektarbete – en vägledning för studenter.

Björk, Cecilia; Reppen, Laila: Så byggdes staden.

Björk, Cecilia et al: Så byggdes husen 1880 – 2000.

For project assignment, the requisite drawings from Stockholm's urban planning office

Reference literature:

Sandin, Kenneth: Praktisk husbyggnadsteknik.

Other suitable literature as support for project work

Examination

- PRO1 - Project, 4.5 credits, grading scale: P, 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.

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.