HS1001 Structure and Design 7.5 credits

Konstruktion och design

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 HS1001 valid from Autumn 2012

Grading scale

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

Education cycle

First cycle

Main field of study

Architecture,Technology

Specific prerequisites

Students in year 3 of the Bachelor of Science in Engineering programmes Constructional Engineering and Design or Engineering and Economics specialising in Constructional Engineering and Design

AF1730 Building Information Modeling
or equivalent course

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, the students shall have basic knowledge for planning of the connection between structure and design in the planning phase. Structural engineering comprises choice of framework, construction technique, building physics, and installation. Design covers basic planning skills for housing and architecture. The student shall also have basic knowledge of the design of timber structures.

Upon completion of the course, students shall:

- Have basic knowledge of housing planning and be able to apply this knowledge in a major housing project
- Have basic knowledge of the design of timber structures
- Be able to apply basic concepts used in the planning of housing for structural engineering, building physics, heat, moisture, sound, and fire as they relate to choice of framework, design, and installation techniques
- Have knowledge of the importance of "sustainable construction”
- Have thorough knowledge of a BIM programme and have applied this knowledge in a project
- Have basic knowledge of the importance of good architectural design, the connection between form, materials, construction techniques, and building

Course contents

Planning the construction of building works, including construction, building physics and architectural design. Basic design of timber structures.The project integrates design, construction, building physics, and installation techniques. Lectures, exercises and study visits will be assigned. Their purpose is to provide students with the theoretical background and insight to complete a proposal for a medium-sized housing project/block of flats.

Course literature

Bärande konstruktioner, del 1, CTH Rapport 2011:11 (del träkonstruktion)
Sandin, Kennneth , Praktisk byggnadsfysik, Studentlitteratur
Arkitektens handbok, Anders Bodin med flera. Bygghandlingar 90 skolversionen samt utdelat material.

Rekommenderad läsning:
Bostaden som arkitektur, Ola Nylander
Bostaden och kunskapen - Arkus
Bostadens rum - Chalmers arkitekter om bostadens kvaliteter
Att bygga ett land, arkitekturmuseet-byggforskningsrådet

The literature list is subject to change at the beginning of the course.

Examination

- PROA - Project, 4.0 credits, grading scale: A, B, C, D, E, FX, F
- TENA - Examination, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- ÖVNA - Exercises, 1.5 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.

The written exam, which covers lectures on the following course subjects: constructional engineering, building physics, building services engineering, and structures.

Other requirements for final grade

Passing grade on project work (PROA, 4,0 credits), grading scale A-F
Passing grade on exercises (ÖVNA, 1.5 credits), grading scale P/F
Passing grade on examination (TENA 2,0 credits), grading scale A-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.