HS1013 Building Services and Energy 7.5 credits

Installationsteknik och energi

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

Establishment

Course syllabus for HS1013 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 3 of the Bachelor of Science Engineering programme Constructional Engineering and Design.

AF1733 Building Technology 3, Building Physics and Materials
HS1007 Fluid Mechanics
or equivalent courses

Language of instruction

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

Intended learning outcomes

The course leads to basic knowledge of heat transfer and dimensioning principles for installing heat, water and ventilation. Energy, environment and climate aspects are central. The engineering and design of building installations are dealt with both in theory and practice.

After completing this course the student is familiar with:

- design routines in heating, ventilation and sanitation
- healthy and energy efficient indoor climate solutions
- safety aspects in building services design

Course contents

Both theoretical and practical design aspects are considered, and modern design tools are included.

The following parts are included:

- Indoor climate requirements
- Thermal considerations including heat transfer and heat recovery
- Moisture and the Mollier chart
- Energy conservation in buildings
- Heat pumps and solar energy
- Space heating and ventilation system design
- Air conditioning, sanitation, and electrical installations
- BIM (Building Information Modeling)

Course literature

Warfvinge, C. och Dahlbom, M.: Projektering av VVS-installationer, Studentlitteratur, Lund
Tillägg 1: Installationsteknik - tillägg av Sture Holmberg
Tillägg 2: Elinstallationer i Byggnader (på Bilda
Tillägg 3: Installationsteknik - Projekt
Tillägg 4: Installationsteknik - Tentor med lösningar

Examination

- PROA - Project, 1.5 credits, grading scale: P, F

• TEN1 - Examination, 6.0 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.

A student who is 0.5 points, 1 point or 1.5 points away from a passing grade (30 points) on the exam will be entitled to take supplementary exam. A request to take a supplementary exam should be submitted to the examiner promptly after the exam result has been communicated. Passing the supplementary exam result in an E grade.

Other requirements for final grade

To receive a final grade for this course, a passing grade on the submitted assignments as well as a grade E or higher on the written examination are required.

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.