AF2511 Building Service Technologies and Systems, Applied Course 7.5 credits

Installationstekniska system, tillämpad kurs

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

Establishment

Course syllabus for AF2511 valid from Spring 2021

Grading scale

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

Education cycle

Second cycle

Main field of study

The Built Environment

Specific prerequisites

AF2508 Building Service Technologies and Systems or equivalent course

Language of instruction

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

Intended learning outcomes

The main goal for this course is to create an understanding at system level around the relationships between indoor climate, occupant satisfaction, building energy performance, environmental impact and building economy (profitability).

On completion of the course, students are expected to:

- Be able to explain how thermal comfort, air quality, lighting quality and acoustic quality influence the overall perceived comfort and productivity of users.
- Be able to analyse and explain the relationships between the indoor climate, energy efficiency, environmental impact and profitability of buildings.
- Have a good understanding of advanced building service and energy systems for high-performance buildings (such as passive, near-zero-energy and positive energy buildings)
- Evaluate the indoor climate and energy performance of buildings by means of advanced simulation tools.
- Explore by means of advanced simulation tools the indoor climate and energy performance of buildings in relation to building certification schemes such as LEED, BREEAM and MiljÃ¶byggnad.

Course contents

- User- and application-adapted lighting technologies (including daylight optimization) and lighting quality in buildings
- Building acoustics and acoustic comfort in buildings
- Building automation and control technologies
- Impact of building service and energy systems on profitability
- Building service and energy system design for high-performance buildings (such as passive, near-zero-energy and positive energy buildings)
- Methods and tools for evaluating and visualising the indoor climate and energy performance of buildings
- Use of simulation tools (e g IDA ICE) for evaluating the indoor climate and energy performance of buildings in relation to certification schemes such as LEED, BREEAM and MiljÃ¶byggnad.

Examination

- PRO1 - Project Assignment, 5.0 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Exam, 2.5 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.

Other requirements for final grade

Passed components PRO1 and TEN1

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.