AF2510 Energy and Indoor Climate Modelling in Buildings 7.5 credits

Energi- och inomhusklimatmodellering i byggnader

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 AF2510 valid from Autumn 2013

Grading scale

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

Education cycle

Second cycle

Main field of study

Built Environment

Language of instruction

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

Intended learning outcomes

The course aims at establishing a good basic proficiency in energy and indoor climate modeling in buildings by providing key knowledge relevant to:

- Methods for modeling energy services and indoor climate in buildings
- Using the IDA ICE modeling tool for modular simulation
- System analysis of key thermal processes and air flows in buildings, as well as performance analysis of climate control devices and installations
- Analysis of the function and energy performance of climate control devices and installations

Course contents

Upon successful completion of the course, students are intended to have gained a good basic understanding of following aspects related to energy and indoor climate modeling in buildings:

- Simulation of buildings, possibilities and limitations
- Different simulation tools
- Neutral Model Format (NMF)
- IDA ICE tool for modular simulation
- Component models in NMF
- Methods for visualizing modeled and measured data
- Conducting and evaluating system studies of energy and indoor climate in buildings

Specific prerequisites

For students not registered on a KTH programme:

180 university credits (hp) including courses in Including the courses in Building Service Technologies and Systems, Building Physics and Buildings and Civil Engineering Structuresequivalent to at least 3·times 7,5 ECTS points. Documented proficiency in English corresponding to English B.

For students registered on a KTH programme:

AF2508 Service Technologies and Systems or equivalent

AF1402 Byggfysik

AF1002 Hus och anläggningar

Course literature

Särtryck

Litteraturen kan komma att kompletteras under kursens gång

Examination

- PRO1 - Project, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Examination, 3.0 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.

PRO1- Project assignment; 4,5 ECTS; Grade scale A-F

TEN1 - Written exam; 3 ECTS; Grade scale A-F

Other requirements for final grade

Passed in 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.