AF1402 Building Physics 7.5 credits

Byggfysik

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

Establishment

Course syllabus for AF1402 valid from Autumn 2020

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

AF1002 Buildings and Civil Engineering Structures

AF1301 Building Materials, Basic Course

AE1601 Fluid Mechanics for Architecture and Built Environment

or equivalent courses

Language of instruction

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

Intended learning outcomes

After the course student should be able to:

- Understand basic definitions and concepts in Building Physics that are related to heat and moisture.

- Identify the physical processes relevant to the transport of heat and moisture for a problem with given preconditions.

- Mathematically describe basic processes for the transport of heat and moisture.

- Carry out calculations with given preconditions and to recognize implausible results.

- Clearly present the results to a problem.

Course contents

Heat transfer, conduction, radition, convection. Vapour content of air and moisture content of materials. Diffusion, convection and capillary transport of moisture. The effect on building material and constructions. Applications on thermal insulation, air tightness, moisture safety and durability as well as on the internal and external environment.

Examination

- ÖVN1 - Exercises, 3.0 credits, grading scale: P, F
- TEN1 - Examination, 4.5 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.

- TEN1 - Examination, 4.5 cr, grade scale: A, B, C, D, E, FX, F
- ÖVN1 - Exercises, 3.0 cr, grade scale: P, F

Written exam, TEN1 4.5 hp
Exercises and laboratory work, ÖVN1 3hp

Other requirements for final grade

Passed in TEN1 and ÖVN1

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.