HS1020 Moisture Related Damages 7.5 credits

Skademekanismer av fukt

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

Establishment

Course syllabus for HS1020 valid from Autumn 2017

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 in Engineering programmes Constructional Engineering and Design or Engineering and Economics specialising in Constructional Engineering and Design

AF1710 Building Technology 1, Constructional Engineering and Design
5.5 credits or more from course AF1711 Building Technology 2, Building Physics and Materials
or equivalent courses

Language of instruction

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

Intended learning outcomes

Upon completion of this course, the student shall:

- Be able to identify moisture damages in the most common risk structures in buildings and recommend possible measures
- Make simple moisture calculations for various structural elements
- Be aware of the effect of moisture on indoor climate and "sick building syndrome"
- Be able to calculate necessary drying times for concrete beams
- Have tested timber and concrete moisture meters and be aware of the accuracy of various measurement methods
- Be aware of the risks of moisture in timber and know how timber should be stored at the worksite
- Be familiar with the types of moisture-related damage and their causes in special buildings such as indoor swimming pools and ice rinks

Course contents

- Lectures on damages and risk structures with respect to moisture in building structures
- The effects of moisture, mainly on concrete and timber
- Lectures on indoor climate
- Calculations of drying time for concrete
- Laboratory work with measurement of relative humidity in concrete and moisture ratio in timber
- Lectures and field trips concerning moisture damage in indoor swimming pools and ice rinks
- Write and orally present, in groups, a technical report on moisture safety project planning

Course literature

Kristina Norling Mjörnell, ByggaF, Sveriges Byggindustrier
L. E. Nevander, B Elmarsson, Fukthandbok, AB Svensk Byggtjänst
RBK:s manual, fuktmätning i betong

Referenslitteratur:
B Esping, J-G Salin, P Brander, Fukt i trä för byggindustrin, SP Trätek
K Sandin, Praktisk byggnadsfysik, Studentlitteratur

Examination

- RED1 - Account, 1.5 credits, grading scale: P, F
- TEN1 - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory Work, 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.

If the course is discontinued, students may request to be examined during the following two academic years.

Other requirements for final grade

Approved examination (TEN1, 4.5 credits), grading scale A-F
Approved lab work (LAB1, 1.5 credits)
Approved project work and oral presentation (RED1, 1.5 credits)
A final grade requires attendance at compulsory study visits, as per course information.

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.