AF1032 Operation, Maintenance and Reconstruction of Buildings 7.5 credits

Drift- och underhållsteknik samt ombyggnad

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

Establishment

Course syllabus for AF1032 valid from Autumn 2007

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Building Technology and Building Services Engineering

Language of instruction

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

Intended learning outcomes

After the course the students should:

Know basic characteristics of building materials concerning durability and environmental aspects

Explain reasons for the need of maintenance of roofs, facades and of indoor surfaces.

Explain the principal differences between flat and steep roofs. Describe different types of maintenance of these.

Describe different types of paints and how a surface treatment should be designed.

Make a simple examination of a facade and discuss how it should be maintained

Know how to control the indoor climate, different control systems, operation and maintenance of building services installations.

Work for safety and economics in building operation and be able to analyze consumption statistics as a base for maintenance and energy saving measures.

Know operation and maintenance routines, operation instructions, how they are made and the organization of technical administration.

Know and how to handle public demands on maintenance and retrofitting.

Estimate/analyze deficiencies and retrofitting needs in the building stock.

Know different solutions to common retrofitting problems and be able to analyze the prerequisites to use them

Course contents

Degradation and durability of building materials. Environmental influence of building materials. Environmental inventory of buildings. Maintenance of building surfaces. Inspection of facades.

Operation and maintenance of building services installations. Safety and economics in building operation. Operation and maintenance routines. Consumption statistics. Energy management. Maintenance planning. Organization of technical administration.

Retrofitting methods, analysis of retrofitting needs and possibilities, public demands and planning of retrofitting.

Course literature

- Burström, PG.: Byggnadsmaterial, Studentlitteratur. In Swedish.
- Så byggdes husen 1880 - 2000. Arkitektur, material och konstruktion i våra flerbostadshus under 120 år. Formas, Stockholm 2003. In Swedish.
- Compendiums in Building Service Engineering from former courses. (1L1026 and 1L1041), Avd för installationsteknik. In Swedish
- Compendium ”Underhåll av ytskikt” (Folke Björk). In Swedish
- Compendium ”Ombyggnadsteknik” (BOOM-gruppen). In Swedish

Additional literature will be announced at the beginning of the course

Examination

- INL1 - Assignments, 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.

Other requirements for final grade

Examination (TEN1; 4,5 cr)
Exercises (ÖVN1; 3 cr)

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.