AF1033 Building Technology and Building Services Engineering 7.5 credits

Husens teknik

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

Establishment

Course syllabus for AF1033 valid from Autumn 2010

Grading scale

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

Education cycle

First cycle

Main field of study

The Built Environment, Technology

Specific prerequisites

Basic eligibility and passed Buildings and Civil Engineering Structures (AF1002) or equivalent.

Language of instruction

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

Intended learning outcomes

After having passed the course the student should be able to:

- Identify common building materials in houses from different periods and have knowledge of their most important properties especially the degradation processes and durability.
- Know the most important materials in Swedish buildings that can be hazardous to people and the environment.
- Describe the building technique in houses with frame work in wood, brick, concrete and steel and discuss aspects of maintenance and reconstruction.
- Explain the causes of maintenance need of roofs, façades, windows and internal surfaces as well as be able to judge proper methods for maintenance of these surfaces.
- Describe different types of painting material and the application of painting treatment for different cases.
- Know the basics and specific applications regarding installations especially heating, ventilation, sanitation and electricity.
- Know how the indoor climate is regulated, different kinds of control and monitoring systems and operation and maintenance of installation systems.
- Know how to reach a good reliability of service and an economic operation of buildings and how to handle and use statistics as a base for maintenance need including need for energy saving measures
- Know about operation and maintenance instructions and maintenance plans and how they are made.
- Know the most important principles for architectonic fire prevention.
- Know the basics of architectural acoustics.

Course contents

- Degradation processes and durability of building materials.
- The environmental influence of building materials. Environmental inventory of buildings.
- Building technique in houses with frame work in wood, brick, concrete and steel. Aspects of maintenance and reconstruction.
- Maintenance of roofs, façades, windows and internal surfaces including cleaning.
- Painting material and painting treatment.
- Heat demand and energy cost.
- Heating systems.
- Ventilation processes.
- Ventilation systems.
- Moist air and conditioning of rooms.

- Air treatment.
- Electrical installations.
- Sanitary technology.
- Operation and maintenance of installation systems.
- Architectonic fire prevention.
- Architectural acoustics.

Course literature

Så byggdes husen 1880 - 2000. Arkitektur, material och konstruktion i våra flerbostadshus under 120 år. Formas, Stockholm 2003. In Swedish

Kompendier i installationsteknik. Avd för installationsteknik. In Swedish

Kompendium ”Underhåll av ytskikt” (Folke Björk) In Swedish

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.

Written examination 4,5 cr

Approved exercises 3 cr

Other requirements for final grade

Passed examination and approved exercises

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.