



# AF1031 Building Technology and Building Services Engineer- ing 7.5 credits

Bygg- och installationsteknik

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

## Establishment

Course syllabus for AF1031 valid from Autumn 2007

## Grading scale

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

## Education cycle

First cycle

## Main field of study

Technology

## Specific prerequisites

Buildings and Civil Engineering Structures

## 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:

- fundamental building mechanical and building physical terms in the fields deformation, heat and humidity,
- the main processes for moisture transport in building materials and through the envelope of the building and how they may result in unfavourable moisture content leading to damage,
- the basics and specific applications concerning installations for building services, especially heating, ventilation, sanitary and electricity,
- building materials from different periods and basic characteristics of the materials,
- the basics of building acoustics,
- the basics of building fire protection,
- how building technology and building services installations together can realize a healthy and energy efficient house.

## Course contents

- Building materials from different periods
- Diffusion. Vapour permeability. Moisture resistance. Moisture distribution in a multilayered construction under stationary conditions. Saturated vapour content. Condensation
- Capillarity. Capillary height. Permeability. Capillary resistance
- Convection. Pressure gradient. Air leakage through gaps and porous materials. Amount of condensed moisture.
- Heat demand and energy costs
- Heating systems
- Ventilation
- Humid air and Climatisation
- Air treatment
- Tapwater
- Waste- and rainwater
- Electrical installations

## Course literature

- Burström, PG.: Byggnadsmaterial, Studentlitteratur. In Swedish

- Byggnadsteknikens grunder. Kompendium i byggnadsteknik. Inst för byggnadsteknik. 1994. In Swedish
  - Så byggdes husen 1880 - 2000. Arkitektur, material och konstruktion i våra flerbostadshus under 120 år. Formas, Stockholm 2003. In Swedish
  - Kompendier i installationsteknik (VVS och el), Avd för installationsteknik. In Swedish
- Additional literature will be announced at the beginning of the course.

## 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.

## 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.