AE1601 Fluid Mechanics for Architecture and Built Environment 7.5 credits

Strömningsmekanik för samhällsbyggnad

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

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

Establishment

Course syllabus for AE1601 valid from Autumn 2007

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

SG1107 (prior 5C1107)Elementary courses in physics and mechanics

Language of instruction

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

Intended learning outcomes

The course gives an introduction to basic theory and gives computational ability in fluid mechanics and heat and mass transfer

Course contents

Fluid properties
Hydrostatics
Continuity, energy and momentum principles
Flow in closed conduits, pumps
Heat and mass transfer in building components
Air movements and the dispersion of airborne pollution
Flow in open channels
Forces on immersed bodies
Discharge, flow measurement
Navier-Stokes equations
Potential theory, flow nets
Darcy´s law

Course literature

- Häggström, S: Hydraulik för V-teknologer, CTH (1999). In Swedish.
  Bergh, H: Exempelsamling i strömningsmekanik Avd Vattenbyggnad, KTH (2006) In Swedish.
- Kompendium i teknisk termodynamik, särtryck för Installationsteknik, KTH (2006). In Swedish.

Examination

- TEN1 - Examination, 3.8 credits, grading scale: A, B, C, D, E, FX, F
- TEN2 - Examination, 2.2 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - Exercises, 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.

Other requirements for final grade

Approved written examination (TEN1; 3,75 cr and TEN2; 2,25 cr) and approved assignment and laboratory course (ÖVN1;5 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.