



# 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.