HS1007 Fluid Mechanics 7.5 credits

Strömningslära

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 HS1007 valid from Autumn 2007

Grading scale

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

Education cycle

First cycle

Main field of study

Built Environment,Technology

Specific prerequisites

Construction mechanics, Mathematics

Language of instruction

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

Intended learning outcomes

After completing this course the student is familiar with:

- Static pressure and force calculations on plane and curved surfaces
- Basic principles of fluid flow, energy conservation and flow measurements
- Pipe system and open channel design with the Bernoulli and Manning approaches
- Power requirements in pump and fan supported systems
- Calculation tools (Excel)

Course contents

The course is a first course in hydrostatic and general fluid mechanics. Examples are mainly from building engineering applications. The following parts are included:

- Hydrostatic pressure and forces
- Continuity of flow and forces caused by flow
- The Energy Equation
- Flow in pipes and open channels
- Pumps, fans, and turbines
- The hydrological cycle, hydrological processes and prognoses
- Some groundwater flow
- Power and energy considerations in building applications
- Flow measurements

Course literature

Alvarez, Henrik & Holmberg, Sture: Strömningslära i ingenjörsutbildningen.
Available in the local book shop at Campus Haninge

Examination

- PRO1 - Project, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Examination, 6.0 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.

Other requirements for final grade

Written exam (TEN1; 6 cr.)
Approved project work (PRO1; 1.5 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.