



MJ1014 Fluid Machinery and Heat Transfer 9.0 credits

Strömningsmaskiner och värmeöverföring

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

Establishment

The official course syllabus is valid from the spring semester 2026 in accordance with the decision by the Faculty Board: M-2024-0018. Date of decision: 2024-10-14.

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Completed modules LAB1 and LAB2 in course MJ1015.

Intended learning outcomes

After passing the course, the student should be able to:

1. formulate, model and solve problems for technical systems and devices in fluid machinery at a basic level.

2. formulate, model and solve problems for technical systems and devices in heat transfer at a basic level.
3. present written solutions to problems in the course field that are stringent and understandable.

For higher grades, the student should furthermore be able to:

4. for grade C: fulfill requirements for grade E and apply calculations on more complex problems in all subareas of the course.
5. for grade A: fulfill requirements for grade C and analyse solutions and assess assumptions and the reasonableness and validity of results for problems in all subareas of the course .

Course contents

- Hydromechanics - hydrostatics, hydrodynamics
- Turbomachinery – hydraulic and thermal turbomachines
- One-dimensional heat conduction – conduction, convection, radiation)
- Combined heat presentation (conduction, convection, radiation)
- Heat exchangers - types, performance analysis, dimensioning methods

Examination

- TEN1 - Written exam, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN2 - Written exam, 3.5 credits, grading scale: A, B, C, D, E, FX, F
- KON1 - Partial exam, 0 credits, grading scale: P, F
- KON2 - Partial exam, 0 credits, grading scale: P, F
- KON3 - Partial exam, 0 credits, grading scale: P, F
- KON4 - Partial exam, 0 credits, grading scale: P, F
- LAB1 - Laboration, 1.0 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.

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

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.