



Course syllabus

Faculty Board of Science and Engineering
School of Engineering

1MT007 Energiteknik I, 7,5 högskolepoäng
Thermodynamics, Fluid Mechanics and Heat Transfer, 7.5 credits

Main field of study

Mechanical Engineering

Subject Group

Mechanical Engineering

Level of classification

First Level

Progression

G1F

Date of Ratification

Approved by Organisational Committee 2009-12-15

The course syllabus is valid from autumn semester 2010

Prerequisites

NO VALUE DEFINED

Expected learning outcomes

The aim of the course is to give the students:

- a broad general orientation in energy education
- knowledge of the function of components and constructions and fundamental theory
- the ability to apply theoretical knowledge in practical calculations, such as calculating main data for components and constructions
- familiarity with energy technology measuring instruments, the theory and use of measuring methods
- in-depth ability to use engineering technology tools as well as the ability to present completed work

Content

The course comprises the following elements:

- Hydromechanics
- Hydrostatics
- Hydrodynamics
- Dynamic forces and the impulse law
- Flow uniformity laws

- Pressure loss in pipes
- Acceleration pressure fall
- Flow technology pipe dimensioning
- Thermology
- Gas compounds
- Heat quantity change. Specific heat capacity
- Work
- The First Law of Thermodynamics for closed systems
- Internal energy
- Enthalpy
- The Second Law of Thermodynamics. Entropy
- Thermodynamic changes in closed systems
- Circuit process
- The First Law of Thermodynamics for open systems
- Steam thermodynamics
- Heat transfer

Type of Instruction

The teaching consists of lectures, laboratory work and exercises. Participation in the course laboratory work is compulsory.

Examination

The course is assessed with the grades U,3,4 or 5.

On request, students may have their credits translated to ECTS-marks. Such a request must be sent to the examiner before the grading process starts.

The assessment of student performances normally takes place during special examination periods and is usually written. The assessment may also be based on submitted presentations of laboratory work and exercises. For students who have not passed during a regular examination a re-sit is arranged, usually during special re-examination periods.

Course Evaluation

A written course evaluation will be carried out at the end of the course in accordance with the guidelines of the University. The course evaluation will be filed at the department.

Credit Overlap

This course cannot be part of a degree in combination with another course in which the content fully or partly correspond to the content of this course: Overlaps entirely with MTB943

Required Reading and Additional Study Material

Required reading

Alvarez, H Energiteknik del 1, Studentlitteratur: Lund

Mörtstedt S-E Data och diagram, Esselte Studium AB