



Course syllabus

Faculty Board of Science and Engineering
School of Engineering

1BT005 Energiteknik I, 7,5 högskolepoäng
Energy Technology I, 7.5 credits

Main field of study

Bioenergy Technology

Subject Group

Energy Technology

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

General entry requirements and Chemistry A, Mathematics D, Physics B or Chemistry 1, Mathematics 3c, Physics 2 (Field-specific entry requirements 8/A8).

Expected learning outcomes

After completing the course the student is expected to have acquired:

- a broad general orientation in energy technology
- 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 measurement 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 change 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. Information on compulsory elements is given at the start of the course.

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 at the beginning of the course.

The assessment of student performances normally takes place during special examination periods and may take the form of project work, laboratory work, written assignments and written examinations. The examination may be both written and oral.

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 Energy Technology I
MTB943/MT9432, BT9062.

Other

On request, a Swedish University course certificate will be awarded upon successful completion of the course.

Required Reading and Additional Study Material