MJ2437 Modeling of Energy Systems - Energy Utilization 6.0 credits

Modellering av energisystem - energianvändning

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 MJ2437 valid from Spring 2011

Grading scale

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

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

MJ2407 Sustainable Energy, 9 credits or equivalent, and the knowledge required for MJ2407:
- Science / Engineering with kandidatexamen/3-årig degree or equivalent education and
- Knowledge corresponding MJ1112 Thermodynamics 9hp, MJ1401 Heat transfer 6hp and

SG1220 Engineering Fluid Mechanics 6hp or a combination of these courses of at least 15 credits.
- Documented knowledge of English B or equivalent.

Language of instruction

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

Intended learning outcomes

After the course the student:

- Be familiar with a modeling tool for analysis of energy systems, such as a building
- Based on the vaguely specified data to build a model of energy use in a defined system
- Be able to assess the reasonableness of the result of an energy analysis
- Have knowledge of models limitations
- Be able to select relevant data in a model and presenting them in writing and orally
- Be familiar with the sensitivity analysis

Course contents

The course is structured in the form of a project to be implemented using a modeling tool for energy analysis. In some cases, the project will have clients from industry. The course begins with lectures relevant support for the project and the software to be used and then the project will be conducted in groups or individually, where follow-up workshops are in support of the project. The results of the study will be presented in a report and an oral presentation.

Course literature

Handouts from the course instructor.

Examination

- PRO1 - Project, 6.0 credits, grading scale: A, B, C, D, E, FX, F
- SEM1 - Seminars, - 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.

Project 6 credits
Workshops 0 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.