



MJ2438 Modeling of Energy Systems - Heat and Power Generation 6.0 credits

Modellering av energisystem - kraft och värme produktion

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 MJ2438 valid from Spring 2020

Grading scale

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

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Language of instruction

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

Intended learning outcomes

After successfully completed the course the student should

1. Formulate the simulation schematics and develop skills for computer modeling of complex power cycles and systems.
2. Analyze the layout, simulate the performance and evaluate the sensitivity parameters for various integrated polygeneration cycles and systems.

Course contents

The course is structured in the form of a project to be implemented using a modeling tool for power 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.

Specific prerequisites

MJ2405 "Sustainable Power Generation", 9 credits or equivalent, and the knowledge required for MJ2405:

- 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.

Examination

- PROA - Project, 5.0 credits, grading scale: A, B, C, D, E, FX, F
- SEMA - Seminar, 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.

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.