MJ2146 Energy Systems, Business and Management 15.0 credits

Energisystem, ekonomi och ledarskap

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

Establishment

Course syllabus for MJ2146 valid from Autumn 2019

Grading scale

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

Education cycle

Second cycle

Main field of study

Industrial Management, Mechanical Engineering

Specific prerequisites

Courses at undergraduate level that are included within the technical profile of the engineering programme in Industrial engineering and management: Energy systems and sustainable development.

ME1312 Understanding the Interface of Technology and Business

English B/English 6 or the equivalent

Language of instruction

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

Intended learning outcomes

The course intends to give the students professional skills that are needed to solve energy systems engineering problems that are so composite and complex that they require knowledge both within energy engineering and within industrial economics for their solution.

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

Knowledge and understanding

Apply models and practical methods to prepare and suggest a solution on a composite energy systems engineering problem that requires knowledge both within energy systems and within industrial economics for its solution.

Account for common actors, services and strategies in the energy system, and the business models that are applied in the different parts of the system

Competence and skills

Identify, compare and critically assess aspects of a composite energy systems engineering problem that requires knowledge both within energy systems and within industrial management for its solution.

organise, handle and lead a complex project that runs over a long period of time, in collaboration with employers and project members

Present the work both in writing and orally, in a scientific and convincing way

Judgement and approach

Account for and discuss the different perspectives on the current sustainability challenges of the energy systems and how these challenges can lead to new possibilities for innovative companies.

Self-critically review and discuss the proposed solutions, business models and other results of the group as well as ones own role in the work of the group

Course contents

The course consists of two parts.

(i) (i) Background study- specialisation within energy systems and systems analysis

(ii) Company analysis (initial project study)

(iii) Project in collaboration with external employer (implementation)

(iv) Academic paper

The background study (i) includes literature studies and seminars that give specialisation in energy systems systems analysis, etc
The company analysis (ii) consists of a study of the company/organisation that is employers to the project/projects as well as of its environment, technical operating conditions etc. The analysis is done in groups and reported after about a month in the form of a written report and an oral presentation.
The project (iii) is also carried out in groups and as a cooperation between Department of Energy engineering, Department of Industrial economics and organisation and a company or other organisation at which the project is placed. The project is reported in writing and orally. The course is completed with an individual essay (iv) with a focus on how technical, business and management issues influence one another in the projects and examples that have been treated in the course.

Course literature

Meddelas vid kursstart

Examination

- PROA - Project, 2.0 credits, grading scale: P, F
- PROB - Project, 9.0 credits, grading scale: A, B, C, D, E, FX, F
- SEMA - Seminar assignment, 2.0 credits, grading scale: P, F
- SEMB - Seminar assignment, 2.0 credits, grading scale: A, B, C, D, E, FX, 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.

Other requirements for final grade

Final mark is calculated based on mean of the two items with A-F grades as well as passed (P) on other. Exact calculation of the grade will be stated in the course memo.

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.