



# MJ1150 Energy and Systems, Innovation and Entrepreneurship

## 10.5 credits

Energisystem, innovation, entreprenörskap

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 MJ1150 valid from Autumn 2012

### Grading scale

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

### Education cycle

First cycle

### Main field of study

Technology

### Specific prerequisites

MJ1112 Applied Thermodynamics, MJ1145 Energy system, MJ1520 Statistics, Risk management and EI1120 Electric Circuit Analysis for Energy and environment, KE1060 Material and Energy Balances (or the equivalent courses)

# Language of instruction

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

## Intended learning outcomes

### Knowledge and understanding

- knowledge of entrepreneurship and enterprise with emphasis on innovation processes, business development and creating business
- Knowledge of how a simple business plan can be devised
- Knowledge of different alternatives and analysis methods to stimulate the innovation process
- General knowledge about energy system development and the history of innovation
- Knowledge of preconditions for 'intrapreneurship' (entrepreneurship within company and organisations)
- Knowledge of policy instruments and their importance to introduce new technology in the energy system.

### Skills and abilities

- ability to formulate problems and plan scientific studies, and ability to analyse basic entrepreneurial processes
- understanding about the importance of a processor-oriented multidisciplinary approach
- ability to use different software tools for energy system analysis
- present work both orally and written in a professional way

### Judgement and approach

- ability to evaluate critically and reflect on the entrepreneurship role in the society
- present, for example, various information and analyses that are required to evaluate an idea to new enterprises, and have explored means to collect and analyse relevant information

## Course contents

The course is divided into four parts:

Part 1 treats innovation and innovation processes, and a project is carried out by the participants (including topic selection, formulation, and planning)

Part 2: treats different aspects on entrepreneurship, and participants take the results from subproject 1 and search find forms for continued activity. A business plan is designed whose aim is to complete the selected project according to the results of subproject 1.

Part 3: treats various types of policy that occurs for support of the development of new technology of the energy field for example green and white certificates, feed-in tariffs etc

Part 4: treats tools for the analysis of new energy technologies and their role in the energy system (Essentially, one can say that this parts teaches different tools for energy system analysis)

## Course literature

Osterwalder, Business Model Generation. Litteratur runt innovationer och innovationsteori.

Fördjupad litteratur om systemanalys och system teori. Litteratur om energy policy och energimarknad

Litteratur meddelas vid kursstart

## Examination

- PRO1 - Project 1, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- PRO2 - Project 2, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- PRO3 - Project 3, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- PRO4 - Project 4, 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.

## 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.