ME2049 Frontiers in the Multi-dimensional Energy Society 6.0 credits

Forskningsfronter i det multidimensionella energisamhället

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

Establishment

Course syllabus for ME2049 valid from Autumn 2009

Grading scale

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

Education cycle

Second cycle

Main field of study

Industrial Management

Specific prerequisites

At least 180 hp including 30 hp in the field of energy technology.

The course is elective for master programmes with energy technology and for exchange students who fulfil the demands.

Language of instruction

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

Intended learning outcomes

After successful completion of this course the participant shall have:

• Knowledge on the conditions for a restructuring of today's energy system towards sustainability with respect to the following: energy markets and their functionality; identification of actors and their roles, competencies, and resources; energy resource availability; technology related to production, distribution, and utilization; and others.

• In-depth knowledge on research and practical applications within a number of areas. Of special importance is to judge how an area can contribute to sustainable development.

• Knowledge about economic, social, political, ecological and other conditions for the practical implementation of new technical solutions.

Course contents

Sustainable energy systems and their coupling to ongoing research lie at the heart of this course. The course is structured around a seminar series where different departments contribute with research experiences, both related to cutting-edge developments as well as practical applications. The seminars will also lend perspectives as to how these research fields relate to various energy systems as well as their contribution to sustainable development. Course literature will be provided to further elucidate the seminars and to provide general background information.

The course will start and stop with some more general seminars. The other seminars will be held by researchers located at various KTH departments. Participants will receive background information in advance of each seminar. This material will include articles, reports, select chapters in textbooks, etc.

The seminars are selected to cover a broad range of topics, i.e. presentation of various energy systems and their components, societal as well as technical aspects, and past-present-future elements.

Course literature

Silveira, Semida (ed.), 2001, Building sustainable energy systems. Swedish Energy Agency, Eskilstuna, 552 pgs.

Select articles, reports, textbook chapters, etc. (around 500 pgs.total)

Examination

- LIT1 - Project, 6.0 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

Firstly short summaries of the reading for each seminar, secondly a summarising report on a selected topic, e g the contribution of a specific technical solution to the energy system development in an industry, a region, a country.

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.