

Course Syllabus

Energy Storage 5 Credits*, Second Cycle Level 2

Learning Outcomes

On completion of this course, students shall be able to:

- describe, analyse and compare different storage technologies for electricity as well as for heating and cooling
- describe a method for calculating the storage capacity of a chosen piece of storage technology and do a substantiated estimation of said capacity
- formulate a complete system with storage including suitable energy sources and loads as well as suggest and briefly describe a suitable operational strategy for the system
- present the project and also objectively be an opponent to another project, both orally and in writing

Course Content

The course covers electrical energy storage as well as various types of storage of heat and cold. The need for storage in both space and time is dealt with first. The basics for several storage technologies are given in lectures, for example sensible heat storage, phase change materials, chemical heat storage, electromechanical and electrochemical storage as well as hydrogen and fuel cells.

Following this, students choose a technology to study in depth and define the aims and scope of this study. Students search for suitable material themselves from scientific publications and other sources in order to gain a deeper knowledge of the technology. The students then design a complete system including the chosen storage technology and present both the technology and the system in a written report together with an oral presentation where the students will also act as opponents of other students as they present their work.

Assessment

Active participation at seminars (1 credit)
Oral presentation and opposition (1 credit)
Written report (3 credits)

Forms of Study

Lectures, self-study with active literature search, compulsory seminars, oral and written

presentation of individual studies, opponent of other students in their presentations.

Grades

The Swedish grades U–VG.

Seminars U, G

The overall grade is based on individual grades from the written report and the oral presentation and opposition, where the written report has the highest weighting.

Prerequisites

30 credits in the Master's Programme in Solar Energy Engineering

Other Information

This course is planned to be taken together with the course Scientific Information and Communication.

Replaces MÖ4003.

Subject:

Energy Technology

Group of Subjects:

Energy Technology

Disciplinary Domain:

Technology, 100%

This course can be included in the following main field(s) of study:

1. Solar Energy Engineering

Progression Indicator within (each) main field of study:

1. A1F

Approved:

Approved 17 May 2017

Valid from 8 August 2017