



MJ2386 Energy Storage Technology 6.0 credits

Energilagring

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

Establishment

On 15/10/2021, the Dean of the ITM School has decided to establish this official course syllabus to apply from autumn term 2022 (registration number M-2021-2012). M-2021-2012.

Grading scale

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

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

Degree of Bachelor/3 year engineering degree, prior knowledge in thermodynamics (equivalent to the course MJ1112), electrical engineering and heat transfer (equivalent to the course MJ1401) and energy engineering.

Language of instruction

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

Intended learning outcomes

After passing the course, students should be able to:

1. Classify energy storage technologies
2. Conceptualise and design energy storage systems with appropriate control strategies
3. Evaluate techno-economic, social and environmental performance with Performance Indicators (Key Performance Indicators, KPI)
4. Suggest business scenarios with energy storage technologies

Course contents

Energy storage technologies for integration of renewable energy, improvement of energy efficiency and energy handling for reduction of emissions are in focus. This course covers different categories of energy storage technologies that mainly include mechanical storing, thermal storing and electrochemical storing. The students will work with techno-economic aspects in

1. work principles
2. evaluation of performance and
3. control strategies for systems integration.

Examination

- TENA - Exam written, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- PROA - Project, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- LABA - Lab work, 2.0 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.

If the course is discontinued, students may request to be examined during the following two academic years.

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.