



ML1612 Energy Technology in Industrial Production 7.5 credits

Energiteknik inom industriell produktion

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

Establishment

Course syllabus for ML1612 valid from Spring 2019

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Specific entry requirements: The courses ML1600, ML1000, AL1106, ML1605, ML1608, or the equivalent.

Language of instruction

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

Intended learning outcomes

On completion of the course, the student should be able to:

- describe and explain energy engineering concepts as well as connect these to industrial production
- show skills in fluid mechanics, hydromechanics and heat transfer
- calculate heat flow in different media
- carry out calculations on turbo machinery, such as for example pumps and fans
- illustrate different methods for energy storage
- sketch and interpret state diagrams
- account for different energy resources from a community perspective
- apply the term of efficiency in different energy processes
- explain and describe methods for transformation between different energy forms as well as analyse efficiency of different energy sources (compressed air, water, oil, electricity, etc)
- account for how to improve the energy system of a factory from a sustainability perspective, as well as the role of industrial maintenance in this
- account for laws and rules as well as economic policy instruments with relevance for industrial production
- account for how cooperation in technical systems can increase the energy efficiency through synergies

Course contents

- Different energy forms
- Fluid mechanics
- Thermodynamics
- Heat transfer
- Fans and pumps
- Combustion Technology
- Heat and cooling processes
- Efficiency
- Energy storage methods
- Industrial applications
- Sustainable production

Course literature

Meddelas tio veckor före kursstart

Examination

- INLA - Assignment, 1.0 credits, grading scale: A, B, C, D, E, FX, F
- PROA - Project Work, 1.0 credits, grading scale: P, F

- TENA - Written examination, 3.5 credits, grading scale: A, B, C, D, E, FX, F
- LABA - Laboratory 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.