



ML1618 Industrial Technology and Production 10.0 credits

Industriell teknik och produktion

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

Establishment

This official course syllabus is valid from the autumn semester 2022 in accordance with decision M-2021-1694 by the Dean of the ITM School:

Grading scale

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

Education cycle

First cycle

Main field of study

Mechanical Engineering

Specific prerequisites

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, the student should be able to:

1. describe and discuss for basic concepts in industrial production
2. describe and discuss relevant concepts that occur in the mechanical engineering field and based on these be able to carry out simple engineering problem-solving and calculations
3. describe properties and fields of use for common engineering materials
4. discuss basic manufacturing processes, machine types and material handling equipment and to be able to evaluate the suitability of the different kinds of such equipment as a basis for decision in industrial production
5. explain the concepts of ecologically, socially and economically sustainable development from a production and engineering perspective and argue for different positions based on a sustainability perspective

Course contents

- The course gives basic knowledge in industrial and production engineering, including an introduction to the mechanical engineering field (including introduction to mechanics, solid mechanics, fluid mechanics, energy engineering, machine components and transmissions)
- Introduction to industrial manufacturing processes (including forming, casting, cutting methods and additive methods) and process industry production, and an introduction to machine tools and production systems
- Introduction to materials science (including physical, chemical and metallographic bases of iron based and other metals, polymers, ceramics, composite material and powder metallurgical materials; test methods; corrosion)
- Study visits to manufacturing industry and contact with professional engineers
- Lab exercises that demonstrate and give possibility to examine aspects of industrial production, mechanical engineering, manufacturing technology and materials science
- Introduction to sustainable development; training of key competencies for sustainable development (systems thinking, normative skills and others); sustainable production development
- Introduction to engineering, technical communication and engineering ethics

Examination

- SEM1 - Lessons and ongoing exams, 4.0 credits, grading scale: A, B, C, D, E, FX, F
- SEM2 - Seminars, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory work, 3.0 credits, grading scale: P, F

- FÄL1 - Field study, 1.5 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.