ME2321 Engineering and Global Challenges 3.0 credits

Ingenjörsarbete och globala utmaningar

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

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

Establishment

On 2024-03-15, the Director of First and Second Cycle Education has decided to establish this official course syllabus to apply from autumn semester 2024, registration number: M-2024-0550.

Grading scale

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

Education cycle

Second cycle

Main field of study

Industrial Management

Specific prerequisites

40 higher education credits in Industrial engineering

English B/English 6

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 students should be able to:

1. Analyse and discuss current global societal challenges, for example economic and social injustice, and environmental impact
2. Analyse and concretize what these challenges imply for engineers that develop technology in a Swedish context and identify tools that can be used in this engineering work
3. Identify and apply concepts, theories and methods in industrial engineering to describe and handle these complex challenges
4. Use a systematic, engineering working method to analyse organisational challenges and suggest how these can be handled.

Course contents

The course raises awareness of the challenges that engineers in industrial engineering face, and gives the students training in, and understanding of, their role in the development of sustainable companies and a sustainable society. This is achieved through:

· Overview and synthesis of industrial engineering at basic level through examples of current, interdisciplinary research,

· Reflection and awareness of current global societal challenges, e.g. connected to the UN sustainable development goals,

· Engineering methods and processes to handle complexity through a systematic way of working,

· Training in a systems engineering perspective, communication and understanding of complex problems from different perspectives.

Examination

- INL2 - Assignment, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- RAP2 - Report, 1.0 credits, grading scale: A, B, C, D, E, FX, F
- SEM1 - Seminars, 0.5 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.

Other requirements for final grade

Attendance at course seminars is compulsory.

Transitional regulations

Students from earlier course offerings that lacks examination item RAP1 (2 higher education credits) is offered to write the report individually (2 higher education credits) or to join in a new course offering and participate in a project group (1 higher education credit) and supplement with an additional individual submission on theory (1 higher education credit).

Students from earlier course offerings that lacks examination item INL1 (1 higher education credit) is offered to supplement with a compensatory assignment for the item that lack.

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.