ML231X Degree Project in Sustainable Production Development, second cycle 30.0 credits

Examensarbete inom hållbar produktionsutveckling, avancerad nivå

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

Establishment

Dean of the ITM School has 2021-06-21 decided to establish this official course syllabus to apply from spring term 2022 (registration number M-2021-1201).

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

The specific prerequisites for a degree project of 30 credits at advanced level are:

- at least 60 credits of courses at the advanced level must be completed.

Completed course in scientific theory and research methodology in Sustainable Production Development, ML2307.

These courses at advanced level must be completed: ML2300, ML2301, ML2305, ML2306 and ML2307 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 know:

1. demonstrate knowledge of the chosen subject area's scientific basis and proven experience, in-depth insight into current research and development work, as well as in-depth methodological knowledge.

2. demonstrate the ability to look for, collect and integrate knowledge with a holistic view, critically and systematically, and identify their need for additional knowledge.

3. show the ability to identify, analyze, assess and manage complex phenomena, issues and situations even with limited information.

4. demonstrate the ability to plan and with adequate methods carry out qualified tasks within given time frames and to evaluate this work.

5. demonstrate the ability to orally and in writing in dialogue with different groups clearly account for and discuss their conclusions and the knowledge and arguments that underlie these.

6. show the ability to make judgments with regard to relevant scientific, societal and ethical aspects.

7. demonstrate such skills as are required to participate in research and development work or to work independently in other qualified activities.

Course contents

This course consists of activities to carry out a degree project at second cycle level in a subarea of sustainable production development. This can concern industrial design, design, analysis, optimisation, choice of material, manufacturing and operation of different technical systems and products in the area of sustainable production development.

The main result will be a final written report, the degree project and an oral presentation. Relevant and scientifically valid results in the degree project require use of knowledge in different fields that are covered by earlier completed courses and additional studies and industrial experience based on need. The student develops proficiencies in the process to create new knowledge based on established theories and methods. The results of the work must have relevance for industrial application in addition to academic relevance.

The course contains seminars to develop the degree project. The continuous discussion about the degree project with supervisor and in seminars is an important part of the course.

Examination

- PROA - Project assignment, 30.0 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.

Other requirements for final grade

Completion of seminars or other activities that have been established by supervisor/examiner as milestones for progress in the degree project.

Students who are registered as five year engineering students must check that other intended learning outcomes satisfy other requirements that apply to their programme and for final mark.

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.