MF2089 Challenge Driven Innovation for Sustainable Development 22.5 credits

Utmaningsdriven innovation för hållbar utveckling

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

Establishment

Course syllabus for MF2089 valid from Autumn 2019

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

Degree of Bachelor in mechanical engineering or the equivalent. Furthermore, completed the courses MF2084 Management of research and development, MF2046 Product innovation, MF2085 Innovation and product development processes, or courses with equivalent contents.

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:

- Apply, critically evaluate and adapt working methods to handle challenge driven innovation projects connected to sustainable development
- Tackle complex (vague, ambiguous) innovation related challenges in a structured way
- Develop business plans and prototypes for challenge driven innovation projects
- Justify innovation solutions and the choices that have led to the solutions, from both a value adding and a technical perspective
- Reflect about and promote sustainable development in innovation/product development work
- critically reflect and draw conclusions from challenge driven innovation
- communicate his/her innovation work and its results in oral and written presentations for various types of target groups
- Develop skills in working in interdisciplinary and international project teams

Course contents

In the course, a real challenge driven innovation and product development project that have clear connections to sustainable development, is carried out in collaboration with a project sponsor. The work is carried out in groups, and in the course, the work is supported through seminars about e g design thinking, business model canvas and industrialisation. In the course, seminars are are also carried out, where organisation and management of the projects are discussed and critically reviewed, as well as seminars about the progress in the innovation and product development solutions.

Course literature

The reading list is announced in the course memo.

Examination

- PRO1 - Practical training, 9.0 credits, grading scale: P, F
- PRO2 - Practical training, 9.0 credits, grading scale: P, F
- PRO3 - Written reflections, 4.5 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.

Examiner determines, in consultation with KTH's coordinator for disabilities, about possible adapted examination for students with documented, permanent disabilities. The examiner may permit other examination formats at the re-examination of individual students.

Other requirements for final grade

A Pass grade for the entire course requires 80% participation in seminars as well as active participation in the project, and that assignments in the different parts PRO1, PRO2 and PRO3 are carried out.

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.