MF2046 Product Innovation 6.0 credits

Produktinnovation

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

Establishment

Course syllabus for MF2046 valid from Autumn 2019

Grading scale

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

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

Bachelor of Science degree in mechanical engineering or the equivalent.

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:

- define different typologies of innovation and explain how they relate to business strategy, business models and industrial transformation.
- describe current practices and trends concerning the management and organization of innovative activities.
- explain how ideas, knowledge and learning can be managed in order to support innovation.
- analyze strategic and organizational problems related to innovation work and apply suitable solutions.
- use analytical tools, frameworks and methods to generate and manage innovation activities in organisations.
- make assessments of the commercial potential of innovations.
- write a brief business plan or gather information needed for assessing the potential of an innovation.
- describe business and customer value of sustainability and how this can be used when developing innovations.

Course contents

The course consists of a series of lectures and exercises, and a project assignment performed in groups of five to six students. Lectures and exercises cover the following areas:

- Introduction to innovation engineering and management
- Industrial dynamics of technological innovation
- Sources, types, and patterns of innovation
- Company- and innovation strategy
- Business model innovation
- Disruptive innovation
- Management and organizing of innovation
- Collaborative and open innovation
- Evaluation and selection of innovation projects
- User- and customer focused innovation
- Managing ideas, knowledge and learning for innovation
- Innovation performance measurement and management.

Disposition

Emphasis during lectures is put on models, frameworks and tools that are practically useful for engineers engaged in innovation work.

A project assignment aiming at identifying a business opportunity and developing it into a draft business plan is performed during the course. For this project, deliverables consist of a draft business plan, a set of presentation material, and an oral presentation.

Course literature

Schilling, M. A., (2010), Strategic Management of Technological Innovation (3rd ed.), Mc-Graw-Hill, New York. (S)

Examination

- ÖVN1 - Assignments, 1.0 credits, grading scale: P, F
- PRO1 - Project, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Written Examination, 3.0 credits, grading scale: A, B, C, D, E, FX, 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.