



# MF2046 Product Innovation 6.0 credits

## Produktinnovation

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

Course syllabus for MF2046 valid from Autumn 2011

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Mechanical Engineering

## Specific prerequisites

CMAST, CDEPR, CFATE, TIPDM track IPDA and IPDB

CMAST, CDEPR, CFATE Year 4 or TIPDM year 1

## Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

## Intended learning outcomes

Students shall after the completion of the course:

- Have knowledge about different types of innovation and their interplay with firm strategy, business models, and industrial development.
- Have knowledge about different factors influencing the emergence and diffusion of innovations.
- Be able to skillfully apply a limited set of available analytical frameworks, tools and methods for generating and controlling business-focused innovation.
- Understand strategic and organizational problems related to innovation activities.
- Be familiar with present trends in innovation management.
- Understand how ideas, knowledge and learning can be managed in order to support innovation activities and be familiar with different methods, tools and ways of working available for this purpose.
- Be able to make basic business assumptions and judgements concerning potential innovations, in particular with respect to economic potential and feasibility.
- Have competence to write a draft business plan or a business case for a potential innovation that can serve as the basis for an investment decision.

## 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

Strategy and innovation

Business model innovation

Disruptive innovation

Organizing for 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.), McGraw-Hill, New York. (S)

Additional scientific articles, book excerpts, and project instructions.

## Examination

- 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
- ÖVN1 - Assignments, 1.0 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.

## 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.