HM1018 Innovation and Design Process 7.5 credits

Innovations- och designmetodik

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

Establishment

Course syllabus for HM1018 valid from Autumn 2007

Grading scale

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

Education cycle

First cycle

Main field of study

Mechanical Engineering, Technology

Specific prerequisites

Proficiency:

6S2900/HN1900, information technology and engineering,
CAD part of 6S2402/HM1002 computer-based design tools and
6S2412/HM1009, industrial design with color and craft

Language of instruction

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

Intended learning outcomes

The aim of this course is to give a holistic view of and basic knowledge about different methods used in the product development work. The course will provide skills in several modern engineering-related support methods for product development.

After the course, the student should be able to:

- Identify the problem and be able to translate customer needs into measurable parameters and appropriate criteria for concepts.
- Describe the workflow in a product development project and explain the various stages of product development work.
- Compare and choose payment methods in product development work.
- Implementing the various phases of a product development project up to the point of choosing a concept basis.
- Use at least one decision-making model for evaluation of different concepts.
- Present problems as well as the concepts of the solutions in a clear and persuasive oral or written way and by the use of appropriate cad and physical models.
- Identify and take into account the different perspectives and positions regarding environmental stress, ethnicity, diversity, gender, and various physical conditions.
- Identify and take into account the errors and risks associated with technical issues.
- Account for how to protect an idea or a product (patents, designs, copyright and proprietary rights).

Course contents

- The product development process, including:
  -customer perspective
  -market perspective
  -requirement specification
  -idea-and concept generating
  -concept evaluation
  -fmea
- Modularisation
- Cad
- Protection of the idea and product (patents, designs, copyright and proprietary rights)
- Product development projects from idea to concept and customer wishes

Course literature

Ullman, David G., The Mechanical Design Process, McGraw Hill

Distributed materials

Examination

- PRO1 - Projct, 2.0 credits, grading scale: P, F
- ÖVN1 - Exercises, 3.0 credits, grading scale: P, F
- TEN1 - Examination, 2.5 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.

Other requirements for final grade

Pass a written exam (TEN1, 2,5 hp) A-F grading scale
Approved practice tasks (ÖVN1; 3 hp), of which 1.5 hp CAD grading scale P/F
Approved projects (PRO1; 2 hp) grading scale P/F

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.