HM1025 Ergonomics in Product Development 6.0 credits

Ergonomi i produktutvecklingen

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

Establishment

Course syllabus for HM1025 valid from Autumn 2010

Grading scale

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

Education cycle

First cycle

Main field of study

Technology, Mechanical Engineering

Specific prerequisites

Language of instruction

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

Intended learning outcomes

The overall aim of the course is that the students as engineers shall be able to contribute to the development of better work environments/products and reduce personal injuries. Through practical work in the field of ergonomics the students concur basic knowledge in ergonomics and its importance in product development.

- With their own words explain fundamental concepts and fields such as personal injuries, human physical and psychological possibilities and constraints, over-exertion injuries and methods for risk management and product development,
- Explain and practically use some methods used in ergonomics, e.g. Borg's subjective rating scales, the mannequin programme Jack, emg- methods and sound measurement,
- Methodically and in a structured way develop a prototype, test and evaluate it from en ergonomic perspective,
- Document and communicate the result of their own work orally and in writing and study and judge the work of others in a structured way

Course contents

Contents of the lectures:

- Survey, physical ergonomics, system ergonomics, cognitive ergonomics
- Personal injuries, the human body, anthropometry
- Methods, limitations, and recommendations
- Sound and vibrations, biomechanics, technical work psychology
- Product development: methods, creativity, patent, project leading, ergonomics and design
- Personal injury risks, ergonomics and economics, real cases and research

Three two-hour laboratory experiments.
A project with practical product development with focus on ergonomics.

Course literature

- Boghard, M, m.fl. (Red) (2008) **Arbete och teknik på människans villkor.** Prevent.ISBN 978-91-7365-037-3.
- Power Tool Ergonomics, Evaluation of Power Tools. Atlas Copco, Bo Lindqvist, 2007. Delas ut.
- Utdelat material på föreläsningar samt föreläsningsmaterial som finns på kursens Bilda-hemsida.

Examination

- PRO1 - Project, 3.0 credits, grading scale: P, F
- ÖVN1 - Laboratory Work, 1.5 credits, grading scale: P, F
- TEN1 - Examination, 1.5 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.

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.