



HN2023 Ergonomics in Product Development 7.5 credits

Ergonomi i produktutvecklingen

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

Establishment

Course syllabus for HN2023 valid from Autumn 2018

Grading scale

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

Education cycle

Second cycle

Main field of study

Technology and Health

Specific prerequisites

180 university credits (hp) in engineering or natural sciences, and documented proficiency in English corresponding to English B/English 6.

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 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, computer-based assessment methods, EMG- methods and sound measurement,
- Methodically and in a structured way develop a prototype, test and evaluate it from an ergonomic perspective,
- Find, read, summarize, and reflect over scientific papers,
- Document and communicate the result of their own work orally and in writing and study and judge others work 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, project leading, ergonomics, and design
- Personal injury risks, ergonomics and economics, real cases, and research

Course literature

Bohgard, M, Karlsson, S, Lovén, E, Mikaelsson, L-Å, Mårtensson, L, Osvalder, A-L, Rose, L, & Ulfvengren, P (Eds) (2009) Work and technology on human terms. Prevent (Work environment in association with the Confederation of Swedish Enterprise, LO & PTK). ISBN 978-91-7365-058-8, Stockholm, Sweden.

Material provided during the course.

Examination

- PRO1 - Project, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - Exercises, 1.5 credits, grading scale: P, F
- TEN1 - 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.

Requirements for final grade:

Written exam (TEN1; 3 cr.), grading scale A-F

Passed project (PRO1; 3 cr.), oral and written presentation, grading scale A-F

Lab assignments and report on scientific paper (ÖVN1; 1.5 cr.), grading scale P/F

Final course grade according to grading scale A-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.