HN2025 Ergonomics, Human Factors and Patient Safety 7.5 credits

Ergonomi och patientsäkerhet

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

Establishment

Course syllabus for HN2025 valid from Autumn 2019

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

By the end of the course each student should be able to:

• describe, exemplify and reflect on methods for applying knowledge about humans in the design, development and evaluation of medical technology.

• describe and discuss different approaches in analyses of incidents in complex systems.

• describe, exemplify and reflect on the main principles of system safety and how factors on different levels in the system can contribute to patient safety and the safety of the healthcare personnel.

• describe, exemplify and explain how organizational issues and the work environment affects patient safety.

• describe, exemplify and reflect on how medical technology affects the work environment and patient safety.

• describe, exemplify and reflect on how medical technology engineers actively can contribute to improve the work environment and patient safety in healthcare.

Course contents

• Background, development and relationship between ergonomics, human factors and patient safety.

• Humans cognitive and physical capacities, as individuals and in work.

• The systems view and sociotechnical systems.

• Risks in healthcare.

• Methods and tools for analysis, design and evaluation of work, work environment and products.

• Human factors and ergonomics concepts and terminology.

• Methods for risk analysis from a systems perspective.

• Patient safety concepts and terminology.

• Measures for increased safety in healthcare systems.

• Read and discuss scientific papers within the area of patient safety and worker safety.

Course literature

Scientific papers presented at the course start and listed at the course web

Examination

- SEM1 - Seminars, 2.0 credits, grading scale: P, F
- INL1 - Assignments, 2.0 credits, grading scale: P, F
- TEN1 - Examination, 3.5 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.

Requirements for final grade:

Active participation in seminars 2 credits P/F

Written presentation of assignments 2 credits P/ F

Written home exam 3.5 credits A-F

Other requirements for final grade

INL1 - Assignments, 2.0, grade scale: P, F

SEM1 - Seminars, 2.0, grade scale: P, F

TEN1 - Examination, 3.5, grade scale: A, B, C, D, E, FX, 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.