HN2016 Evaluation and Measures of the Physiological and Acoustic Work Environment 7.5 credits

Bedömningar och åtgärder av den fysiologiska och akustiska arbetsmiljön

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

Establishment

Course syllabus for HN2016 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

Academic first degree, 180 higher education credits in engineering or natural sciences or equivalent education. 15 credits in mathematics or statistics.

Language of instruction

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

Intended learning outcomes

The overall aim is to provide knowledge about the impact on health and performance from the physiological, visual and acoustic work environment, and how to improve these factors.

By the end of the course, the students should be able to:

- describe, exemplify and explain how work related factors within the field of physiological load, visual ergonomics, noise and vibrations affect safety, health, wellbeing, and performance.
- describe and reflect on theories about mechanisms linked to the above mentioned factors in causing work-related symtoms, disorders and performance effects.
- perform exposure measurements and risk assessments relating to the above mentioned factors.
- propose work environment improvements concerning the above mentioned factors and to identify facilitators and barriers for implementation.
- critically evaluate risk assessments and work environment improvements including relevant work environment regulations and scientific literature.

Course contents

- Work physiology
- Work related musculoskeletal disorders
- Visual ergonomics
- Noise
- Vibrations
- Theories on acute and long term health effects
- Methods for exposure measurement and risk assessment
- Intervention strategies

Course literature

Technology and work on human terms, Prevent, ISBN 9789173650588

Helander, M, A guide to human factors and ergonomics, Second edition, CRC Press

Toomingas et al. 2011. Occupational Physiology. ISBN 9781439866962.

Wilson and Sharples, Evaluation of Human work, Taylor and Francis, 2015.

Anshel, J Visual ergonomics Handbook, CRC Press, 2005 (parts)

Scientific papers and e-books presented at the course start and listed at the course web

Examination

- ÖVN1 - Exercises, 2.0 credits, grading scale: P, F
- TEN1 - Examination, 4.0 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory work, 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.

Requirements for final grade:

Active participation in laboratory and other exercises

Written presentation of assignments

Written exam 4 credits 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.