



CH2004 Evaluation and Measures of the Physical Work Environment 7.5 credits

Bedömningar och åtgärder av den fysiska arbetsmiljön

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

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

On 2021-04-15, the Head of School of CBH has decided to establish this official course syllabus to apply from autumn semester 2021 (registration number C-2021-0713).

Grading scale

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

Education cycle

Second cycle

Main field of study

Technology and Health

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 thermal climate and ventilation; lighting and visual ergonomics; electromagnetic radiation at the workplace and their impact on safety, health, well-being, and performance. The objective is also to provide knowledge about how to manage these factors and reduce risks for illness and accidents, through technical and organisational design of work, workplaces and the work environment.

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

1. Describe, exemplify and explain how all the above-mentioned factors affect safety, health, well-being and performance.
2. Perform measurements and risk assessments relating to all the above-mentioned factors. Describe and motivate the choice of different measurement strategies; be able to interpret and draw conclusions from measurement results, be able to understand and evaluate the causes of exposure and, when required, propose countermeasures to eliminate or reduce exposure. In order to conduct measurements knowledge about measuring methods and strategies is required.
3. Propose work environment improvements according to the hierarchy of control concerning the above-mentioned factors and by reflections regarding the interactions among sociotechnical (human, technology and organisation) perspectives.
4. Describe the EU regulations and Swedish legislation and provisions for all the above-mentioned factors and critically discuss risk assessments and work environment improvements in relation to relevant work environment regulations.

Course contents

- Thermal climate and ventilation
- Lighting and visual ergonomics
- Electromagnetic radiation
- Physiology and injury mechanisms
- Theories on acute and long-term health effects
- Measurement methods, measurement strategies and risk assessment
- Intervention strategies
- Work environment regulations in the field

Specific prerequisites

Academic first degree, 180 higher education credits in engineering or natural sciences or equivalent education and English language skill equivalent to English B/English 6. 15 credits in mathematics or statistics.

Examination

- OVN1 - Exercises, 1.0 credits, grading scale: P, F
- RED1 - Project work, 2.5 credits, grading scale: P, F
- TENA - Written exam, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- TENB - Oral exam, 1.0 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.

Intended learning outcome number 1 is examined in RED1 and TENA.

Intended learning outcome number 2 is examined in OVN1, RED1, TENA and TENB

Intended learning outcome number 3 is examined in RED1 and TENA.

Intended learning outcome number 4 is examined in TENA.

Requirements for final grade: Passed written and oral presentation of assignments and active participation in exercises and laboratory work. Completion of these and a grade A-F on written examinations are used to determine the final grade (A–F) for the entire course.

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.