



CH2013 Introduction to Technology, Work and Health 7.5 credits

Introduktion till teknik, arbete och hälsa

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

The headmaster at the CBH school has 2021-10-15 decided to establish this syllabus to apply from Autumn 2022, registration number: C-2021-2075.

Grading scale

P, 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 and English language skill equivalent 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 aim of the course is for students to gain an introduction to the scope of ergonomics practice and learn about the scope and nature of contributions ergonomists and work environment engineers make in creating better physical work environments. The course includes a survey of theoretical frameworks and social contexts of workplace health, as well as a survey of workplace hazards that includes a more in-depth study of biomechanical exposures in the workplace.

On successful completion of this course each student should be able to:

1. Exemplify and describe different types of health hazards in the workplace, how these hazards may effect workers' health and performance, and how healthy and sustainable work environments contribute to achievement of the UN Sustainability Goals.
2. Understand laws, regulations, and standards in the subject area, and how they are used by ergonomists and work environment engineers to promote systematic work environment management.
3. Perform exposure measurements and risk assessments relating to biomechanical loads in accordance with relevant regulations.
4. Within the area of biomechanical exposure, critically evaluate measurements and risk assessments, in accordance with relevant regulations.
5. Reflect on different models & frameworks for analyzing and improving the work environment including population based adjustments within work systems (e.g. sociotechnical model of human, technology and organisation, HTO).

Course contents

In order to get as much as possible out of the course, each student has to participate actively and engage before, during and after the scheduled activities.

1. Ergonomics and HTO concepts, their background and development
2. Practical applications based on a system perspective from different view points
3. Systematic work environment improvement, including legal framework of provisions and inspections
4. Participatory ergonomics
5. Anthropometry
6. Industrial Hygiene paradigm (REC) and shallow survey of hazards in the workplace

7. Basic biomechanics and mechanisms for musculoskeletal disorders
8. Methods for biomechanical exposure measurement and risk assessment of musculoskeletal disorders
9. Hierarchy of Controls (i.e. prevention strategies)
10. Sustainability Goals including equality in health

Examination

- LAB1 - Laboratory work, 2.0 credits, grading scale: P, F
- PRJ1 - Project work, 1.5 credits, grading scale: P, F
- SEM1 - Seminars, 4.0 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.

Learning goal 1-2 and goal 5 is examined in SEM1. Learning goal 3-5 is examined in LAB1 and in PRJ1.

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.