



# HN2022 System Safety and Risk Management 7.5 credits

## Systemsäkerhet och riskhantering

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 2023-04-11, the Head of School CBH has decided to revise this official course syllabus to apply from the autumn semester 2023 (registration number C-2023-0707).

## 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

You as a student should be able to:

- 1.... Describe, exemplify and reflect about the system perspective on human, technological and organizational aspects of the concept HTO.
- 2.... Argue for and identify risks in socio-technical systems (HTO), both risk that contribute to the system safety failure as well as workplace accidents and events.
- 3.... Describe, exemplify and reflect about risk management from an organizational perspective like safety management systems.
- 4.... Analyse identified weaknesses in risk management processes and suggest improvements.
- 5.... Analyse identified weaknesses in safety in a work place in and suggest actions for mitigating risk and improvements.
- 6.... read, understand and discuss international scientific publications in the area of system safety and risk management.

## Course contents

- Theory and models of systems, safety, human-machine systems, human factors, risk and system analysis.
- Riskmanagement including methods and tools for analysis, assessment and evaluation.
- System analysis for risk management processes in an organisation.
- Applying methods and tools for risk management in a work place case. Discussion and recommendations for mitigation and implementation of change of these.
- Occupational health and safety assessment series (OSAHS).
- Work law and prescriptions.

### Learning activities

The teaching consists of lectures and workshops as well as compulsory exercises in the form of seminars and webinars. In addition to scheduled learning activities, there is time for your own studies.

### Compulsory attendance

Applies to all exercises conducted in the form of seminars and webinars included in the exercise series (ÖVN2).

### Course literature

Scientific articles and documents presented at the start of the course that are listed and available on KTH-Canvas.

## Examination

- INL1 - Hand-ins, 1.5 credits, grading scale: P, F
- PRO1 - Project, 2.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN2 - Exam, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN2 - Exercises, 2.0 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.

The exam (TEN2) is in writing. Learning outcome 1 is examined in TEN2. Learning outcome 2 is examined in parts of INL1, ÖVN2 and TEN2. Learning outcome 3 is examined in TEN2. Learning outcome 4, 5 and 6 are examined in parts PRO1 and TEN2.

INL1 – For grades P is required:

- covering the basic areas related to the given task.
- using literature and references to support their description and discussion of the given task.
- giving the assignment a structure that makes it easy to follow and that the assignment has a concluding summary and conclusion.

ÖVN2 – For grades P is required:

- that the literature has been read to the respective seminar and webinar prior to the exercise.
- that you actively participate in the exercises and together with other course participants discuss assigned literature and in group actively solve the given tasks.

PRO1 – The PRO1 (project work) module is intended to measure the progression of the student with regard to all six learning objectives and is judged based on how the student has completed the project assignment they have been assigned.

TEN2 - The TEN2 (exam) module aims to measure the progression of the student with regard to all six learning outcomes and is judged on how the student answers a number of questions given in a home exam.

Requirements for final grades

Active participation in exercises (ÖVN2), 2 credits, P-F

Written presentation of assignments (INL1), 1.5 credits, P-F

Written and oral presentation of the project work (PRO1), 2.5 credits, A-F

Written examination, 1.5 credits, A-F

The final grade on the course is based on a consideration of the grade the student achieved during the project work and the exam.

## Other requirements for final grade

Active participation in exercises (ÖVN2), 2 credits, P-F

Written presentation of assignments (INL1), 1.5 credits, P-F

Written and oral presentation of the project work (PRO1), 2.5 credits, A-F

Written examination, 1.5 credits, A-F

The final grade on the course is based on a consideration of the grade the student achieved during the project work and the exam.

## 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.