



# HN2021 Theory and Methodology of Science with Applications (Ergonomics) 7.5 credits

Vetenskaplig teori och metod med tillämpningar (ergonomi)

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

## Establishment

Course syllabus for HN2021 valid from Autumn 2018

## 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

The students shall after their studies be able to:

- understand differences and relationships between different scientific perspectives and methods and have well grounded reflections about this
- understand how scientific knowledge is generated and related to theory of science
- understand and be able to apply qualitative and quantitative methodology approaches
- apply knowledge of how to design a study, as well as propose suitable methods and techniques for collection, analysis and interpretation of data for various types of studies.
- apply commonly used methods within research and development in the field of ergonomics and work environment engineering
- understand differences between research and development work
- be able to report studies according to standards within the field of ergonomics and work environment engineering
- critically review and evaluate research reports and other studies within the fields of work ergonomics and environment engineering

## Course contents

Concepts of theory of science and research ethics

Overview of common methods applied within the field of ergonomics and work environment engineering

Epidemiology and statistical methods

Qualitative methods

Interactive research approaches

Scientific writing and reporting

Workshops, laboratories and seminars for training and reflections on applications different methods

## Course literature

Williamson, K. (2002). Research methods for students, academics and professionals: Information management and systems. Elsevier.

Scientific articles, books and course material related to the content of the course

## Examination

- SEM1 - Assignment and seminar for quantitative methods, 1.5 credits, grading scale: P, F
- SEM2 - Assignment and seminar for qualitative methods, 1.5 credits, grading scale: P, F
- TEN1 - Examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- SEM3 - Assignment and seminar on reporting of studies, 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.

SEM1 - Assignment and Seminar for quantitative methods, 1.5, grade scale: P, F

SEM2 - Assignment and Seminar for qualitative methods, 1.5, grade scale: P, F

SEM3 - Assignment and Seminar on reporting of studies, 1.5, grade scale: P, F

TEN1 - Examination, 3.0, 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.