



# AK2050 Theory and Methodology of Science with Applications (Medical Ethics) 6.0 credits

Vetenskapsteori och vetenskaplig metodik med tillämpningar (medicinsk etik)

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

Course syllabus for AK2050 valid from Spring 2024

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Built Environment

## Specific prerequisites

General requirements for master's programmes. Proficiency in English corresponding to English B / English 6 in Swedish gymnasium.

# Language of instruction

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

## Intended learning outcomes

After having completed the course, the student should, with regards to the theory and methodology of science, both orally as well as in writing, be able to:

- Identify definitions and descriptions of concepts, theories and problem areas, as well as identify the correct applications of these concept and theories.
- Account for concepts, theories and general problems areas, as well as apply concepts and theories to specific cases.
- Critically discuss the definitions and applications of concepts and theories as they apply to specific cases of scientific research.

These learning objectives are examined in writing via an exam and orally via seminars.

- Describe and apply the most common theories and methods in applied ethics as well as describe their relevance for medical ethics.
- Implement independent moral reflections with respect to practical problems in the ethics of medical technology.

These learning objectives are examined in writing via a project work.

## Course contents

The following is an incomplete list of topics covered in the course.

- Scientific knowledge
- Definitions
- Hypothesis testing
- Observations and measurements
- Experiments
- Models
- Statistical reasoning
- Causes and explanations
- Qualitative methods
- Engineering design
- Risk and decisions of risks
- Research ethics

## Examination

- PRO1 - Project, 1.5 credits, grading scale: P, F
- SEM1 - Seminars, 1.5 credits, grading scale: P, F
- TENB - Written exam, 3.0 credits, grading scale: A, B, C, D, E, FX, 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.

A student can be examined in SEM1 with written assignments that replace attendance at seminars, provided that an agreement is in place for the student to take the course remotely.

## Other requirements for final grade

Fullfilled seminar requirements, project requirements and written 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.