



DA2205 Introduction to the Philosophy of Science and Research Methodology 7.5 credits

Vetenskapsteori och forskningsmetodik

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

Establishment

Course syllabus for DA2205 valid from Spring 2019

Grading scale

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

Education cycle

Second cycle

Main field of study

Computer Science and Engineering

Specific prerequisites

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 to provide a deeper understanding of the methodological and underlying philosophical issues that arise in science, in particular the computational sciences, and inspire to reflection on such issues within the student's own area of study. The course introduces key concepts in the philosophy and methodology of science such as knowledge, truth, belief, subjectivity, intersubjectivity and objectivity, causality vs. covariation, scientific explanation, the nature and epistemology of models and simulation, the path from science to policy, hypothesis testing, verifying and falsifying hypotheses, research ethics.

After having taken the course the student should be able to

- present the foundational issues in the methodology and philosophy of science, especially as regards the natural, technological and computational sciences.
- present the history of computation and computers
- do a library search within the subject
- write a technical report within the subject

Course contents

Scientific knowledge, hypothesis testing, scientific texts, observations and experiment, explanation and laws, models and simulation, paradigms. Short history of computation and computers, writing technical reports and thesis reports, overview of important journals and textbooks, library search within some specific area.

Examination

- HEM1 - Assignments, 1.5 credits, grading scale: P, F
- HEM2 - Assignments, 3.0 credits, grading scale: P, F
- TEN1 - Examination, 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.

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

Other requirements for final grade

Examination: (TEN1; 3 university credits)

Home assignments: (LAB1; 1,5 university credits, LAB2; 3 university credits)

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.