



DA2210 Introduction to the Philosophy of Science and Research Methodology for Computer Scientists 6.0 credits

Vetenskapsteori och vetenskaplig metodik för datorer

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

Establishment

The official course syllabus is valid from the autumn semester 2024 in accordance with the decision from the director of first and second cycle education: J-2024-1117. Decision date: 2024-04-15

Grading scale

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

Education cycle

Second cycle

Main field of study

Computer Science and Engineering

Specific prerequisites

- Knowledge in basic computer science, 6 credits, corresponding to completed course DD1338/DD1320-DD1327/DD2325/ID1020/ID1021.

- Knowledge of probability theory and statistics, 6 credits, equivalent to completed course SF1910-SF1924/SF1935.

Language of instruction

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

Intended learning outcomes

Having passed the course, the student should be able to:

- explain and analyse scientific theories relevant for research in computer science,
- explain and analyse scientific methods relevant for research in computer science,
- review scientific articles in computer science with regard to theory, method and result critically
- identify methodological problems in a study
- identify ethical problems in different scientific situations and discuss them
- plan and carry out the writing of a scientific report.

Course contents

- The basic concepts within philosophy of science and research methodology, such as causality, data, correlation, hypothesis, inductive-deductive methods.
- Special methods and problems within computer science and mathematics.
- Research methodology within engineering projects.
- Experimental methodology.
- Ethics in science and the role of science in society.
- How to read and write scientific reports.
- Practical training in writing of scientific reports (similar to degree projects).

Examination

- HEM1 - Exercises, 1.5 credits, grading scale: P, F
- HEM3 - Essay, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- QUI1 - Digital quizzes, 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.

Written and oral examination is done for higher grades on QUI1.

Other requirements for final grade

Attendance at the seminars is mandatory.

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.