



IC2002 Philosophy of Science

7.5 credits

Vetenskapsteori

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

Establishment

Course syllabus for IC2002 valid from Spring 2009

Grading scale

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

Education cycle

Second cycle

Main field of study

Specific prerequisites

For single-course students:

Bachelor degree/180 hp (120 old credits) in information technology, information systems, computer science or computer and systems sciences.

Language of instruction

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

Intended learning outcomes

The student upon completion of the course will be able to:

- give an account of important events in the history of science
- explain the (ideal and factual) requirements on scientific work
- describe his or her own view on science, and compare this to his or her view on engineering
- apply scientific theory to practical problems
- give an account of fundamental concepts of philosophy of science, and of ethics in science
- survey and present original texts in the area of philosophy of science
- instrumentalise scientific problems.

Course contents

The contents of the course will follow the main book closely, and deal with the following topics in the natural sciences.

- I. Science and Pseudoscience
- II. Rationality, Objectivity, and Values in Science
- III. The Duhem-Quine Thesis and Underdetermination
- IV. Induction, Prediction, and Evidence
- V. Confirmation and Relevance: Bayesian Approaches
- VI. Models of Explanation
- VII. Laws of Nature

The compendium deals with those aspects of the philosophy of science that are special to the social sciences, and with other aspects not directly covered by the course book.

Disposition

In the first two weeks of the course, the teaching consists of two lectures each week. The guest lectures later in the course also deal with the social science aspects of the philosophy of science.

The five concluding weeks of the course consist of one 2-hour lecture in the morning, and one 2-hour discussion group in that afternoon. Students moderate some of the discussion groups. This means that the student (together with 2-3 fellow students, depending on the number of attendees) leads and moderates the discussion at one weekly group discussion. An examiner will participate, since the group discussions are part of the examination. Lectures are not mandatory, but each student must attend at least 70 per cent of the discussion group meetings, as an active participant.

The lectures will be given in English, and all kinds of student presentations are required to be in English.

Parts of the first seven out of nine chapters total in the main book will be part of the course. The book consists of about 1000 pages of original manuscripts, with an additional 400 pages of editorial comments. Students are recommended to do a substantial amount of reading before the course starts, in order to keep up with lectures.

Course literature

Preliminary:

Martin Curd and J. A. Cover (eds.): Philosophy of Science (Upplaga: 1), W W Norton & Co Inc, 1998, 0-393-97175-9

Compendium of papers and book excerpts. Exact contents will be determined closer to the start of the course.

Examination

- SEM1 - Active Participation, 3.0 credits, grading scale: P, F
- PRO1 - Report, 4.5 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.

Mandatory group discussions with active participation and moderation will be graded as pass or fail. At the end of the course there is also a written exam, in the form of an essay, to test individual abilities and understanding, graded on the ordinary 7-step scale A/B/C/D/E/Fx/F.

To pass the course, both the essay and group discussion part must be graded pass, and the course mark will be based on that of the essay.

Students close to the requirements for passing the written exam will be given the opportunity to complete, to reach grade E, but not higher. Students will be notified of this opportunity at the time of return of examinations, and any completion must meet the time deadline set.

To pass the mandatory group discussions, the student should actively participate in (at least) all but two discussion groups, as well as moderate one discussion group should the examiner so require.

The marking of an essay start upon received proof that the student has read especially developed material and instructions on plagiarism, to be made available during the course.

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.