FME3513 Philosophy of Science and Knowledge Formation of Engineering 10.0 credits

Vetenskapsfilosofi och ingenjörsarbetets kunskapsbildning

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 FME3513 valid from Spring 2019

Grading scale

P, F

Education cycle

Third cycle

Specific prerequisites

Enrolled as a doctoral student in the PhD programme Industrial economics and management.

Language of instruction

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

Intended learning outcomes

After finishing the course, the student shall be able to:

- Understand and explain puzzles about what science describes and seeks to explain;
- Describe the range of explanatory narratives at hand in the social sciences broadly conceived;
- Demonstrate the ability to critically evaluate various aspects of the scientific endeavor.
- Position their own research with respect to competing social theories and research methodologies in terms of their ontological and epistemological presuppositions;

Course contents

The course encompasses an introduction to the main philosophical questions concerning scientific knowledge and methodology, such as the following themes: natural vs. social sciences, positivism, rationalism, relativism, falsification theory, hypothetic-deductive method, induction and deduction, description vs. explanation, notions, models and scientific frameworks.

Part of the course is dedicated to the logic and craft of research, from the statement of the research problem to the assessment of a finalized dissertation. During the course, tools are provided for assessing scientific publications and especially for taking a critical approach to one's own scientific endeavor.

Examination

- INL1 - Assignment, 10.0 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.

Other requirements for final grade

Active, well prepared, participation in the seminars of the course

Written home assignment - Critical analysis of a published article

Presentation of a pre-structured analysis of a dissertation (seminar)

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.