FMJ3748 Research Methodology and Theory of Science 7.5 credits

Forskningsmetodik och vetenskapsteori

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

Establishment

Course syllabus for FMJ3748 valid from Spring 2019

Grading scale

P, F

Education cycle

Third cycle

Specific prerequisites

Eligible for third-cycle education

Language of instruction

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

Intended learning outcomes

The course in Research Methodology and Theory of Science will give you deeper understanding of science and its different paradigms. The course will improve your skills in doing research projects and facilitate in carrying out your Master thesis work.

After finishing the course, you should be able to:

- Reflect on what science is and over underlying ideas for different paradigms
- Debate about the role of science in society
- Explain the meaning of "scientific attitide" and requirements on scientific work.
- Explain the most common scientific methods and tools for sustainability research, such as case study, participatory backcasting, surveys, interviews, modelling, data analysis and field and experimental methods.
- Explain and apply rules for copying, citation and referencing.
- Search scientific literature and handle references
- Write scientific text (on a basic level)
- Critically review and constructively comment on a finalized thesis work/scientific paper according to aims, relevance, objectives, methods/theory, evidence and uncertainty of results and conclusion and application.
- Design and present a framework for own PhD or Lic thesis work/research paper, including structure, research question/hypothesis, objectives, relevance, methods and generalization of results, referencing.

Course contents

- Quantitative and qualitative methods for sustainability research
- Scientific approach
- What is science? Paradigms? Science in society?
- Scientific writing
- Interviews/surveys
- Field investigation methods
- Modelling
- Transdisciplinary research
- Case study/Scenario methods
- Data analysis
- Literature review; searching information and handling scientific references
- Peer-review and opposition

Course literature

Will be announced on the course homepage in advance of the course start.

Examination

- RED1 - Reporting, 7.5 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.

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

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.