



F1H5129 System Analysis 7.5 credits

Systemanalys

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 F1H5129 valid from Autumn 2009

Grading scale

undefined

Education cycle

Third cycle

Language of instruction

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

Intended learning outcomes

After the course you should be able to:

- Account for various systems analysis approaches – both hard and soft ones – to analyse important societal issues, characterise problems suitable for systems analysis, and discuss the relevance of systems analysis for different decision problems.

- Discuss typical analytical tools and other techniques applied in systems analysis studies and account for their applicability and limitations to provide decision support.
- Identify typical steps in a systems analysis study and discuss how the systems analysis approach could be applied in your own research.
- Apply the approach, ideas, tools and/or techniques of systems analysis in your own research.
- Communicate results from a systems analysis study to the scientific community, stakeholders and the public.

Course contents

Systems analysis deals with integration of knowledge from different areas in order to handle complex problems, often focusing on applications requiring actions and decisions. Analytical tools, such as mathematical and statistical models, play a crucial role. For utilising these tools, a good overview of theories and methods is required, and knowledge about their applicability and limitations. Furthermore, combinatory skill and creativity are required in mobilising and integrating knowledge from different subject areas together with an understanding of the problems and the contexts in which the results are to be implemented, as well as an ability to communicate insights and results both in a cross disciplinary sense and to various stakeholders.

Initially, the systems analysis approach and its relationship with network thinking and complexity will be presented in a number of lectures. This is followed by a number of lectures where experienced researchers discuss systems analysis applications from different fields. Case study presentations by young researchers, or senior PhD students, further illustrate the range of ongoing research that makes use of systems analysis approaches. The students will be given the opportunity to apply problem-structuring approaches of systems analysis to some societal problem in a workshop setting. The students will also present their own research from a systems analysis perspective in a brief written report and orally in a seminar.

Specific prerequisites

Admitted to a PhD programme

Course literature

To be announced at the course start.

Examination

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

A written examination (TEN1), 5 ECTS credits, grading scale P/F

Participation in mandatory lectures and workshops and written project report (PRO1), 2.5 ECTS credits, grading scale P/F

Requirement for final pass (P) grade is approved written examination (TEN1) and approved mandatory participation and written project report (PRO1)

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.