



# AI2150 Theory of Science and Research Methods 7.5 credits

Vetenskaplig grundkurs

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

## Establishment

Course syllabus for AI2150 valid from Autumn 2019

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

The Built Environment

## Specific prerequisites

30 credits from Mastersprogram.

## Language of instruction

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

# Intended learning outcomes

The overall aim of the course is to provide basic knowledge of the theory of science and research method, with a particular focus on social science research. In the course, the ability to evaluate science, formulate a research project and the ability to present an own research project orally and in writing is also practiced.

After passing the course students will be able to:

- account for basic scientific theory concepts and reasoning
- account for different types of research methods and the conditions for using these in social science
- apply these skills to formulate their own research problem within the subject area the Built Environment, and make well-founded choices for research design in a chosen project and argue for these
- critically review a scientific work

## Course contents

Content that provides knowledge of the subject matter in the areas of science theory and research method

- Introduction to the theory of science
- Concepts in science (hypothesis, model, theory, correlation, definition, etc.)
- Research ethics
- Research design
- Research process
- Information sources
- Data collection, qualitative and quantitative
- Samples
- Measurement methods
- Preparation and analysis of field material / data
- Qualitative analysis
- Quantitative analysis
- Literature search and referencing

Content that highlights the research tradition in research fields included in the Real Estate and Construction Management program

- Content that exercises the ability to carry out a research study. The student should:
- Do a literature review within a selected area
- Identify a research problem in social science
- Identify theory within the chosen problem area
- Formulate a proposal for a research study (thesis proposal)

- Describe any ethical considerations linked to the proposed research
- Argue in writing for choices made in the thesis proposal
- Present the thesis proposal
- Discuss other students' thesis proposals (act as opponent)

In the examination, samples are taken from the course content.

## Course literature

Information about course literature is given in the course memo

## Examination

- SEMA - Seminars, 2.0 credits, grading scale: P, F
- INLA - Assignment, 3.0 credits, grading scale: P, F
- TEN1 - Exam, 2.5 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.

## Other requirements for final grade

Assignment (INL1), 3.0 credits, submission in time according to instructions and presentation and opposition at seminar gives the grade approved

Seminar (SEM1), 2.0 credits, attendance at seminars and assignments with grade approved

Examination (TEN1), 2.5 credits, grade A-F

## 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.