

Scientific Method

Programme course

6 credits

Vetenskaplig metod

TNM107

Valid from: 2021 Spring semester

Determined by

Board of Studies for Computer Science
and Media Technology

Date determined

2020-09-29

Main field of study

Media Technology and Engineering

Course level

Second cycle

Advancement level

A1X

Course offered for

- Master's Programme in Computer Science
- Media Technology and Engineering, M Sc in Engineering

Specific information

The course is replaced by an elective course for students with TDIU14 in bachelor's degree.

The course can not be included in degree together with TDDD89.

Prerequisites

Prerequisites: (valid for students admitted to programmes within which the course is offered) 30hp on advanced level in main subject area. Experience in reading scientific peer-reviewed papers in main subject area.

Intended learning outcomes

After the course, students shall be able to:

- Evaluate texts with respect to scientific and engineering standards.
- Select and evaluate relevant scientific and engineering methods in the topic area for each student.
- Formulate a scientific text using an academic standard.
- Formulate and criticize a plan for a scientific study.
- Critically evaluate scientific works.
- Seek information about and evaluate references in their own topic area.
- Summarize scientific results in their topic area.
- Assess and manage ethical issues and societal aspects of science and engineering in their topic area.

Course content

- Scientific methods: their purpose, quantitative methods, qualitative methods.
- Engineering and science
- Scientific writing
- Literature search and summary
- Critical analysis of scientific work: reliability and validity
- Reference management: specificity and completeness.
- Ethics in research
- Societal aspects of research and technical development.

Teaching and working methods

The course is conducted as a series of lectures, seminars and hand-in assignments. The course is performed as a preparatory study before a master's thesis project, including formulating research questions, literature review and survey of theoretical reference material, and an initial description of a research method. In the course, scientific aspects of thesis projects are analyzed during seminars. During the course, scientific methods are presented in the main topic areas for students taking the course.

Examination

UPG2	Seminars	4 credits	U, G
UPG1	Hand-in assignments	2 credits	U, G

Grades

Two grade scale, older version, U, G

Department

Institutionen för teknik och naturvetenskap

Director of Studies or equivalent

Camilla Forsell

Examiner

Niklas Rönnerberg

Education components

Preliminary scheduled hours: 36 h

Recommended self-study hours: 124 h