Scientific Method

Programme course

6 credits

Vetenskaplig metod

TDDD89

Valid from: 2017 Spring semester

Determined by
Board of Studies for Computer Science
and Media Technology

Date determined
2017-01-25

Main field of study
Information Technology, Computer Science and Engineering, Computer Science

Course level
Second cycle

Advancement level
A1X

Course offered for
- Computer Science and Engineering, M Sc in Engineering
- Industrial Engineering and Management - International, M Sc in Engineering
- Industrial Engineering and Management, M Sc in Engineering
- Computer Science, Master's programme
- Information Technology, M Sc in Engineering
- Computer Science and Software Engineering, M Sc in Engineering

Entry requirements
Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites
30hp advanced courses in students' topic area. Experience in reading scientific peer-reviewed papers in students' topic area.

Intended learning outcomes
After the course, students shall be able to
- Evaluate texts with respect to scientific and engineering standards.
- Describe and select relevant scientific and engineering methods in the topic area for each student.
- Compare and evaluate scientific and engineering methods in the topic area selected by each student.
- Formulate a scientific text using generally accepted standards.
- 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, quantiative 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	2 credits	U, G
UPG1	Hand-in assignment	4 credits	U, G

Grades are given as ’Fail’ or ’Pass’.

Grades

Two-grade scale, U, G

Department

Institutionen för datavetenskap

Director of Studies or equivalent

Ahmed Rezine

Examiner

Ola Leifler

Education components

Preliminary scheduled hours: 36 h
Recommended self-study hours: 124 h

Course literature

Additional literature

Other

Anslås på kurswebbplatsen.

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.