



COURSE SYLLABUS

Forskningsmetodik i datavetenskaper Research Methodology in Computing 7.5 credits (7,5 högskolepoäng)

Course code: PA1478

Main field of study: Software Engineering, Computer Science

Disciplinary domain: Technology

Education level: First cycle

Specialization: G2F - First cycle, has at least 60 credits in first cycle course/s as entry requirements

Language of instruction: English

Applies from: 2023-08-28

Approved: 2023-03-01

1. Decision

This course is established by Dean 2022-11-30. The course syllabus is approved by Head of Department of Software Engineering 2023-03-01 and applies from 2023-08-28.

2. Entry requirements

Admission to the course requires 60 completed credits of which at least 45 credits in computer science or software engineering.

3. Objective and content

3.1 Objective

The objectives of the course are to introduce, discuss and practice a scientific approach, to get acquainted with current research in a specific area and to practice scientific writing. A key issue in software engineering and computer science research is the development, evaluation and comparison of methods, tools, languages, design and algorithms and how these affect different systems, organizations and humans. This course introduces research methodologies that make such an evaluation and comparison possible. The student is also introduced to societal and ethical aspects of such research and evaluations and gets initial experiences in planning, conducting and reporting a research project.

3.2 Content

The course introduces scientific research methods, scientific writing and how to build and strengthen a well-founded argumentation.

The course includes the following elements:

- Searching for and evaluating literature
- Formulation of scientific questions

Introduction to methods for research, data collection and analysis

- Planning, implementation and evaluation of research
- Research Ethics
- Scientific writing

4. Learning outcomes

The following learning outcomes are examined in the course:

4.1 Knowledge and understanding

On completion of the course, the student will be able to:

- Describe how to conduct a research project from beginning to end
- Account for different methods of research, data collection and analysis

4.2 Competence and skills

On completion of the course, the student will be able to:

- Use scientific databases and search engines to identify research articles that are relevant to a specific question
- Summarize results presented in research articles in his or her own words

- Formulate research objectives and issues in a specific area
- Design a basic research study
- Perform data collection and analysis of a basic research study and compare the result with existing literature
- Write a report according to established academic practice
- Reference other people's work according to established academic practice

4.3 Judgement and approach

On completion of the course, the student will be able to:

- Demonstrate an ability to relate to the concepts of science and relate to them in their own work
- Show insight into the role of knowledge in society, people's responsibility for how the knowledge is used and the ethical and societal implications a research project can lead to
- Discuss and relate to the concepts of plagiarism and copyright

5. Learning activities

The course is organized around lectures and assessments. Students are expected to take an active part and contribute in the lectures. The assessments are written to train the students in designing and implementing specific parts of research studies, as well as in academic writing.

6. Assessment and grading

Modes of examinations of the course

Code	Module	Credits	Grade
2310	Report 1	2.5 credits	AF
2320	Report 2	2.5 credits	AF
2330	Report 3	2.5 credits	AF

The course will be graded A Excellent, B Very good, C Good, D Satisfactory, E Sufficient, FX Fail, supplementation required, F Fail.

To get a passing grade for the course, all modules must be approved. The final course grade is the average of the grades in three modules.

The information before a course occasion states the assessment criteria and make explicit in which modes of examination that the learning outcomes are assessed.

An examiner can, after consulting the Disability Advisor at BTH, decide on a customized examination form for a student with a long-term disability to be provided with an examination equivalent to one given to a student who is not disabled.

7. Course evaluation

The course evaluation should be carried out in line with BTH:s course evaluation template and process.

8. Restrictions regarding degree

The course can form part of a degree but not together with another course the content of which completely or partly corresponds with the contents of this course.

9. Course literature and other materials of instruction

1. Experimentation in Software Engineering – An Introduction; 2nd Edition
Author: C. Wohlin, P. Runeson, M. Höst, M.C. Ohlsson, B. Regnell, A. Wesslén
Publisher: Springer Verlag
Edited: 2012, number of pages: 250
ISBN-13: 978-3642290435
2. Real World Research, 3rd Edition
Author: C. Robson
Publisher: Wiley
Edited: 2011, number of pages: 608
ISBN: 978-1405182409

10. Additional information

This course replaces the course PA1433