

COURSE SYLLABUS

Vetenskaplig metod och kommunikation inom informationsteknologi, Forskarnivå Scientific Methodology and Communication for Informatics, Post-graduate level 7.5 credits

Course Code: IT0918F

The Course Syllabus applies from: Jan 1, 2019

Date of Approval: Jan 14, 2019

Version Number: 2

Third-cycle Subject Area: Informatics

Academic Level: Post-graduate level

1 Name, Scope and Level of the Course

The course is given by the University of Skövde and is named Scientific Methodology and Communication for Informatics, Post-graduate level. It comprises 7.5 credits and is on Post-graduate level.

2 Objectives

After completed course the PhD student should be able to:

- describe and argue, based on approaches from the theory of science, for central concepts, research methodologies and research design used in Informatics;
- argue for actual and possible research questions and methods applicable within the actual research field, based on relevant literature from Informatics;
- show abilities to systematically analyze and argue for research focus, basic structures, methodologies, and also consider associated ethical issues related from informatics development and use;
- independently examine and categorize research papers within a focused problem area and discuss this from a broader perspective in Informatics;
- explain and argue for central questions related to developing methodologies; and

- describe and evaluate how different combined research methods may contribute to usable solutions for research problems within Informatics.

3 Course Content

This course goes through basic scientific concepts and methods. These are used as building blocks for designing and developing new methodologies for research projects within Informatics. These methodologies are needed to handle the often interdisciplinary problems regarding complex technical systems. Through lectures and practical assignments, the research students will acquire skills to review scientific literature, evaluate different approaches and current methods. They will learn to design and apply methodologies supporting systematic analysis and structured ways to report research projects. Moreover they will acquire skills to argue for some already established, combined methodological approaches and concepts, such as abduction, action research, design science, and combining case studies.

The following parts are in focus:

- Read and critically review previous literature, methodology and typical research projects from actual research area and relate these to broader issues within Informatics,
- Systematically review research problems, methods and discuss issues related to method development,

- Discuss the use of multiple methods and combined approaches for reliable scientific work within Informatics.

By this the course supports the research students' better understanding of the theoretical and the methodological issues needed for planning new research projects and communicating research results both within the actual research fields, and more general, within Informatics.

4 Forms of Teaching

The teaching comprises lectures, group assignments, project work, seminars/group discussions and literature review.

The teaching is conducted in English.

5 Examination

The course is graded Fail (U) or Pass (G).

The final grade of the course is issued when all course units have been passed.

The project presentation will be oral and written.

Registration of examination results:

Name of examination	Credits	Grading
Project presentation	2 hp/credits	U/G
Oral examination	2 hp/credits	U/G
Written assignments	3.5 hp/credits	U/G

To obtain a final passing grade of the course, each part of the examination must have been approved.

6 Admission Requirements

The admission requirements of the course are general entry requirements for third-cycle courses and study programmes, i.e. a second-cycle qualification or satisfied requirements for courses comprising at least 240 credits of which at least 60 credits were awarded in the second cycle, or the equivalent.

In order to fulfil the specific entry requirements, the applicant must have completed academic courses of at least 60 credits, including independent thesis writing of at least 15 credits at advanced level, within the field Informatics, applicable areas of a similar kind or other fields which are judged as directly relevant for the licentiate or PhD thesis.

In addition upper secondary course English B, or the equivalent, is required.

7 Third-cycle Subject Area

The course forms a part of the third-cycle subject area of Informatics at the University of Skövde.

8 Approval of Course and Course Syllabus

This course was approved by the Committee for the Doctoral Programme in Informatics Dec 10, 2018. This course syllabus was ratified by the Committee for the Doctoral Programme in Informatics Jan 14, 2019. It is valid from Jan 1, 2019 and replaces the course syllabus ratified Dec 10, 2018.

9 Overlapping with Another Course

This course cannot constitute a part of a degree also containing a course, the content of which is totally or partly equivalent to the content of this course.

10 Additional Information

Further information will be available on the university's website before the course is provided.

National and local regulations for higher education are available on the university's website.

During and after the course there will be a follow-up evaluation concerning the learning outcomes. The main objective of the follow-up is to contribute to improving the course. The research students' experience and points of view constitute one part of the scrutiny and are obtained through written group course evaluation/discussions. The research students are to be informed about the outcome of these as well as possible decisions concerning steps to be taken.

11 Course Literature and Other Educational Materials

Briony, J. O. (2006). *Researching Information Systems and Computing*. London: Sage. ISBN 978-14129-0223-6.

Research papers from own research fields have to be identified by the participants. Other research papers related to the lectures will be distributed during the course. These papers are basic papers on building theories and methodologies within Informatics.