

COURSE SYLLABUS

Systematisk och stringent granskning av artiklar: kvalitativ analys och sökbaserade metoder, Forskarnivå

Systematic and Stringent Reviewing of Articles: Qualitative Analysis and Search-based Methods, Post-graduate level

4.5 credits

Course Code: IT0926F

The Course Syllabus applies from: Jan 1, 2019

Date of Approval: Dec 10, 2018

Version Number: 1

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 Systematic and Stringent Reviewing of Articles: Qualitative Analysis and Search-based Methods, Post-graduate level. It comprises 4.5 credits and is on Post-graduate level.

2 Objectives

After completed course the PhD student should be able to:

- deconstruct the content of source texts into different themes based on relevant theories and models, both in the specific field of the student and the general field of science and scientific writing;
- employ criteria to compare and contrast source texts based on themes;
- synthesize and reorganize source texts into comparative summaries of the source texts;
- employ snowballing to cover a scientific field;
- rank publication channels according to criteria;
- employ digital tools that are useful in handling and analysing sources; and
- paraphrase implications of judicial aspects of usage of digital tools.

3 Course Content

The course addresses the selection and qualitative analysis of scientific sources such as articles to ensure systematic literature and theory coverage. Techniques for selecting sources address, for example, browsing and snowballing. Qualitative analysis address, for example, deconstruction of articles into themes based on critical concepts and their relations; usage of criteria to evaluate and compare sources based on themes as well as reorganizing and synthesizing themes for different goals; development of tools for enabling comparative analysis; handling of mismatching terminologies as well as judgement of the quality of the publication channel are also addressed. Digital tools for, for example, keeping track of references as well as analyzing references are briefly addressed. All assignments are mainly based on articles in the field of the individual students and, at the end of the course, participants should have surveyed and analyzed a set of critical themes in their respective research field.

After the course, participants should be able to perform article reviewing with a broad framework in a systematic and stringent fashion.

The course is centered around a sequence of assignments that are addressed at the seminars. At each seminar, the participants present and discuss their results. The assignments are in order: (1) to apply existing non-digital tools for comparative qualitative analysis of sources; (2) to refine and reapply the non-digital

tools, where the refinement should be based on the theories in general and in the participant's research field; (3) to employ snowballing to ensure coverage and evaluate quality of the publication channels; as well as (4) employ tools to support comparative analysis (e.g., text mining).

4 Forms of Teaching

The teaching comprises lectures and seminars/group discussions.

The teaching is conducted in English.

5 Examination

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

Registration of examination results:

Name of examination	Credits	Grading
Assignments	3.5 hp/credits	U/G
Seminars	1 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 Dec 10, 2018. It is

valid from Jan 1, 2019.

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

Barbara Kitchenham, O. Pearl Brereton, David Budgen, Mark Turner, John Bailey, Stephen Linkman (2009). Günther Ruhe. *Systematic literature reviews in software engineering - A systematic literature review*. (51), (Information and Software Technology, 51).

Frigg, Roman and Hartmann, Stephan (2017). Edward N. Zalta. *Models in Science*. (The Stanford Encyclopedia of Philosophy). URL: <https://plato.stanford.edu/archives/spr2017/entries/models-science/>.

Gregor, Shirley (2006). *The nature of theory in informatics*, September. (30(3)), (MIS Q, 30(3)). URL: <http://dl.acm.org/citation.cfm?id=2017296.2017300>.

Hansson, Sven Ove, (2015). Edward N. Zalta. *Science and Pseudo-Science*. [Elektronisk] (The Stanford Encyclopedia of Philosophy). URL: <https://plato.stanford.edu/archives/spr2015/entries/pseudo-science/>.

Turner, Raymond and Angius, Nicola, (2017). Edward N. Zalta. *The Philosophy of Computer Science*. [Elektronisk] (The Stanford Encyclopedia of Philosoph-

hy). URL: <https://plato.stanford.edu/archives/spr2017/entries/computer-engineering/>.
science/ . *Computer Engineering*. Springer Verlag. ISBN 978-3-642-29044-2.

Wohlin, C., Runeson, P., Höst, M., Ohlsson, M.C., Regnell, B., Wesslén, A. (2012). *Experimentation in*

Additional relevant research articles will be included.

TRANSLATION FROM SWEDISH