



## COURSE SYLLABUS

# Theory of Science and Scientific Method, 15 credits

*Theory of Science and Scientific Method, 15 högskolepoäng*

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| <b>Course Code:</b> HTSR25   | <b>Education Cycle:</b> Second-cycle level       |
| <b>Confirmed by:</b> Utbildningsrådet Feb 16, 2015   | <b>Disciplinary domain:</b> Health sciences      |
| <b>Revised by:</b> Department head Jun 13, 2016  | <b>Subject group:</b> TR1                        |
| <b>Valid From:</b> Aug 29, 2016  | <b>Specialised in:</b> A1N                       |
| <b>Version:</b> 2  | <b>Main field of study:</b> Occupational Therapy |
| <b>Reg number:</b> 2016/2363 (313) Avdelningen för rehabilitering/Department of Rehabilitation |  |

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### Intended Learning Outcomes (ILO)

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

#### Knowledge and understanding

- thoroughly describe the progression of knowledge based on different approaches in the theory of science
- describe appropriate quantitative, qualitative and combined research methods for different kinds of research questions
- compare design, methods of data collection and data analysis related to different research methods
- describe ethical considerations within different research approaches
- explain what signifies validity and reliability, as well as trustworthiness and credibility in quantitative as well as qualitative studies.

#### Skills and abilities

- under supervision perform studies using different research approaches
- apply descriptive and analytical statistics
- conduct interviews and data analysis using a qualitative research approach
- compile and present findings from quantitative, qualitative or combined methods studies
- apply ethical considerations within research.

#### Judgement and approach

- evaluate and discuss approaches in theory of science related to research design
- evaluate different research methods in relation to chosen research questions
- evaluate the quality of scientific studies using different design approaches in addition to conclusions drawn.

### Contents

#### Philosophical principles of research and approaches of theory of science

- approaches in theory of science
- critical review of scientific articles

- research ethics

### Research approaches

- research design within quantitative research methods
- research design within qualitative research methods
- data collection, analysis and presentation using a quantitative, qualitative or combined research methods

### Type of instruction

The course is given as a web-based distance course.

The teaching is conducted in English.

### Prerequisites

Bachelor's degree (i.e the equivalent of 180 ECTS credits at an accredited university) within health and caring sciences, behavioural science, social work, or educational sciences (or the equivalent).

### Examination and grades

The course is graded A, B, C, D, E, FX or F.

#### Module 1. Philosophical principles of research and approaches of theory of science, 3 Credits

One written group assignment.

#### Module 2. Quantitative research methods, 5 Credits

Two individually written assignments.

#### Module 3. Qualitative research methods, 5 Credits

One written group assignment and one individually written assignment.

#### Module 4. Thesis proposal, 2 Credits

An assignment and a presentation of a thesis proposal with a quantitative, qualitative or combined research method.

Examination by assistant professor.

Registration of examination:

| Name of the Test   | Value     | Grading        |
|--|-----------|----------------|
| Philosophical principles of res. and appr. of theor. science | 3 credits | A/B/C/D/E/FX/F |
| Quantitative research methods                                | 5 credits | A/B/C/D/E/FX/F |
| Qualitative research methods                                 | 5 credits | A/B/C/D/E/FX/F |
| Thesis proposal  | 2 credits | A/B/C/D/E/FX/F |

### Other information

#### Attendance requirements

Mandatory attendance at online seminars.

#### Course literature

American Psychological Association. (2009). *Publication Manual of the American Psychological Association*. Washington, D.C.: The Association cop.

Belenky, M., Clinchy, B., Goldberger, N., & Tarule, J. (1997). *Womens Ways of Knowing: The*

- Development of Self, Voice and Mind 10th Anniversary Edition*. New York: Basic Books.
- Creswell, J.W. (2013). *Research design*. London: SAGE Publications Inc.
- Day, R. A. (1998). *How to Write & Publish a Scientific Paper*. Cambridge: Cambridge University Press.
- Kessel, F., Rosenfield, P. L., & Anderson, N. B. (Eds.). (2008). *Interdisciplinary Research: Case Studies from Health and Social Science*. Oxford: University Press.
- Kvale, S., & Brinkmann, S. (2008). *InterViews: Learning the Craft of Qualitative Research Interviewing*. Thousand Oaks: SAGE publications.
- Okasha, S. (2016) *Philosophy of Science: Very Short Introduction*. Oxford: Oxford University Press.
- Oliver, P. (2010). *The Student's Guide to Research Ethics*. United Kingdom: Open University Press.
- Palant, J. (2014). *The SPSS Survival Manual*. United Kingdom: Open University Press.
- Portney, G. L., & Watkins, M. (2013). *Foundations of Clinical Research*. United Kingdom: Pearson Education.
- Latest edition of textbooks to be used.
- In addition: scientific articles and reports depending on main area and chosen research method.