SCHOOL OF ENGINEERING
JÖNKÖPING UNIVERSITY

Preliminary course syllabus with information_111227

Theory of science and research methodology, *4* credits

Vetenskapsteori och forskningsmetodik,4 högskolepoäng

Education cycle: Third cycle education
Disciplinary domain: -
Subject group: -
Specialised in: -
Main field of study: Industrial product realisation
Syllabus valid from: 20120101
Syllabus approved by Kvalitetsrådet för utbildning och forskarutbildning (RUF) 2011-xx-xx and confirmed by head of research and research education 2011-xx-xx

Learning outcome
On completion of the course the student should:

Knowledge and understanding
- demonstrate deeper knowledge of scientific methods in general and of methods in the specific field of research in particular

Skills and abilities
- demonstrate an ability to identify and formulate issues and to plan with appropriate methods a limited research task

Judgement and approach
- demonstrate an ability to make ethical assessments in their own research
- demonstrate insight into the possibilities and limitations of science

Content
The course will provide an overview and give the students a basic knowledge of various scientific traditions relevant to the field industrial product realisation. Furthermore, the course is to give the students a comprehensive knowledge of different research methods, and in-depth knowledge of that / those methods that are relevant to the individual student.

The course includes
- Basics within theory of science
- Different research designs
- Case study, design science/design research, experiment, action/interactive research, modelling/simulation, etc. based on the needs in the group
- Techniques for data collection (of empirical material)
- Quality and ethics in research

Type of instruction
Lecture and seminars.

Teaching is conducted in English or Swedish dependent on the requirements.

Prerequisites
Admitted to second cycle or third cycle programme or equivalent.

Examination and grades
The course is graded Fail or Pass.

Examination includes oral and written parts within two assignments, of which one is individual and one is a group assignment.

Assignment 1: Method chapter in research proposal/licentiate thesis
Throughout the course, the students shall individually work on a draft methodology section of the research proposal or licentiate thesis (depending on how far the student reached). The draft should in addition to the description of the method chosen also contain clear arguments for the method selected. This assignment is carried out with the support of from the tutors. The result is presented at a seminar.

Assignment 2: Specialisation on selected research method
The students are responsible for a seminar where a selected research method is addressed in depth. The preparation is carried out in small groups, formed based on research interest/research questions A detailed description of what is to be handled for each method is handed out separately. The result is presented at a seminar.

Teachers
Course responsible and examiner associate professor Kristina Säfsten, kristina.safsten@jth.hj.se
Assistant professor Sverker Johansson, sverker.johansson@hlk.hj.se, and other (to be decided).

Course literature
Williamson, K. (2002) *Research methods for students and professionals*, 2nd ed., Centre for Information Studies, Wagga wagga, NSW.

Additional material to be announced

Preliminary schedule spring 2012

Date	Time	Place	Topic	Teacher
17/1	9-12	E4222b (Galileo)	Theory of science	Sverker Johansson
31/1	9-12	E4222b (Galileo)	Science or non-science	Sverker Johansson
14/2	9-12	E4222b (Galileo)	Examination seminar (course book)	Kristina Säfsten
8-9/3	TBD	E3105d (Leonardo)	Seminar (assignment 2)	TBD
20/3	9-16	E4222b (Galileo)	Seminar (assignment 1)	Kristina Säfsten