



## COURSE DESCRIPTOR

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Philosophy and Methodology of Applied Sciences

Vetenskapsteori och metodik

Third-cycle course

Corresponds to 7.5 higher education credits (högskolepoäng)

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### 1. Aim of the course

The aim for the doctoral student is to acquire knowledge and develop skills in the area of philosophy of science and methodology of applied science. It aims to increase the student's ability to formulate and applied scientific principles within their own area of research.

### 2. Content

PART 1: Theory/Seminars, 3 ECTS credits

- History of science: from experience facts to experimentalism;
- Modern theory of science: falsificationism, Kuhn's paradigm, Lakatos' research programmes; Feyerabend's anarchistic theory of science, subjective Bayesians, and new experimentalism;
- Methodology of applied science;
- Legal and ethical aspects of publishing.

PART 2: Project/Workshops, 4.5 ECTS credits

- Approaching research problem - a research question and hypothesis;
- Validation and verification of research hypothesis;
- How to organise and write thesis and scientific paper;
- Tools for referencing and using templates;
- Presenting and disputing of research results;
- Reviewing of the research reports;
- Project and teamwork management.

The course parts can be taken separately, but the order Part 1 then Part 2 or both parts parallel are recommended

### 3. Objectives

*Knowledge and Understanding:*

- Fundamental concept and theory concerning modern paradigm in science, special in applied sciences;
- Academic and publishing culture.

*Skills and Abilities:*

- Scientific writing;
- Research competence;
- Write, present and dispute scientific papers and reports.

*Judgment and Approach*

- Be able to analyse, review and oppose scientific papers and reports.



#### **4. Learning and teaching**

The course is given as a campus course. Instruction consists of lectures, seminars and workshops along with written and oral assignments. The course is taught in English.

#### **5. Assessment and grading**

The examination consists of active compulsory participation in seminars and workshops, written assignments submitted and presented in different ways.

<b>Code Module</b>	<b>Credit</b>
Theory	3.0 ECTS
Project – individual part	2.0 ECTS
Project - group part	2.5 ECTS

Assessment of the course is the grade pass or fail (G/U).

#### **6. Course evaluation**

The course coordinator is responsible that the doctoral student has the opportunity to comment on the course.

#### **7. Course literature and other teaching material**

- A.F. Chalmers: *What is this Thing Called Science?* ISBN 0-87220-452-9.
- Course coordinator will provide suitable compendia and a list of supplementary literature before the course starts

#### **8. Course coordinator/responsible**

Wlodek Kulesza, Professor, BTH

#### **9. Certificate**

On the student's request, course certificate is issued by BTH through the course coordinator.