

## Introduction to the philosophy of science, 2.5 credits

### *Introduktion till vetenskapsfilosofi, 2.5 hp*

<b>Course Code/Codes</b>	50NT001
<b>Subject Area</b>	Cross disciplinary between natural science and technology
<b>School/equivalent</b>	School of Science and Technology
<b>Valid from</b>	2018-12-01
<b>Approved</b>	2019-01-09
<b>Revised</b>	
<b>Approved by</b>	Peter Johansson Prefekt
<b>Translation to English, date and signature</b>	

## 1 Course content

The course serves as an introduction to the philosophy of science, with a particular reference to science and technology. The focus is on the generation of knowledge, principles and systems of the scientific method. Emphasis is paid to the concept of facts, theories as structures and the new experimentalism. Here, the theories of Thomas Kuhns paradigm, Imre Lakatos research program and Deborah G Mayos new experimentalism are in focus and discussed from the experience of an emerging researcher. In addition, the perspectives of Paul Feyerabends anarchistic view as well as the influence of Bayesianism are included. The course also provides a time line for the major scientific achievements in the light of the development of the philosophy of science. In this context, different views on the relationships between the development of science, society and the scientist are discussed.

## 2 Outcomes

### 2.1 The course in relation to the doctoral programme

The course shall primarily refer to the following intended learning outcomes for third-cycle courses and study programmes as described in the Higher Education Ordinance, i.e. the doctoral student shall demonstrate:

#### *Knowledge and understanding*

- broad knowledge and systematic understanding of the research field (part of outcome 1)
- familiarity with research methodology in general (part of outcome 2)

#### *Competence and skills*

- the capacity for scholarly analysis and synthesis (part of outcome 3)

- the ability to review and evaluate research and other qualified tasks (part of outcome 4)
- the capacity to contribute to social development both through research and education and in some other qualified professional capacity (part of outcome 8)
- the capacity to support the learning of others (part of outcome 8)

#### *Judgement and approach*

- intellectual autonomy and disciplinary rectitude (part of outcome 9)
- specialised insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used (outcome 10)

The intended learning outcomes are listed in the same order as in the general syllabus for the programme.

## **2.2 Intended course learning outcomes**

To obtain a passing grade, the doctoral student shall demonstrate:

Knowledge about the fundamental properties of the scientific method.

Knowledge about dominating theories in the philosophy of science with focus on natural science and technology.

That she/he has identified fundamental philosophical ideas and concepts with emphasis on his/her scientific subject

Basic knowledge about the historical development of science and technology in the light of the philosophy of science.

The ability to apply the concepts of the scientific method in everyday research.

## **3 Reading list and other teaching material**

The following course readings and teaching material will be used on the course:

Chalmers, Alan, (2013), What is this thing called science (4 Ed.). Open University Press, 316 pages.

Scientific reports within the students' main discipline, not exceeding 200 pages.

## **4 Teaching formats**

Teaching on the course takes the following format:

Lectures and reflections individually and in groups as well as seminars.

## **5 Examination**

### **1.**

The course is assessed through an examination consisting of the components listed below. The individual components are not graded separately but together they provide the basis for assessment and grading.

- Written group reports from seminars
- Individual oral presentation and written report on the final assignment

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*For examinations consisting of several examination components, the following applies:* If during the course it is concluded that a doctoral student is unable to complete a certain examination component, the examiner may set a substitute assignment provided that circumstances do not reasonably allow for the course component to be completed at a later date during the run of the course.

## **6 Grades**

Examinations on third-cycle courses and study programmes are to be assessed according to a two-grade scale with either of the grades 'fail' or 'pass' (local regulations).

The grade shall be determined by a teacher specifically nominated by the higher education institution (the examiner) (Higher Education Ordinance).

To obtain a passing grade on examinations included in the course, the doctoral student is required to demonstrate that he/she attains the intended course learning outcomes as described in section 2.2. Alternatively, if the course consists of multiple examinations generating credit, the doctoral student is required to demonstrate that he/she attains the outcomes that the examination in question refers to in accordance with section 5.

A student who has failed an examination is entitled to a retake.

If an examination consists of several examination components, and a student fails an examination component, the examiner may, as an alternative to a retake, set a make-up assignment with regard to the examination component in question.

A doctoral student who has failed an examination twice for a specific course or course element is entitled, upon his/her request, to have another examiner appointed to determine the grade.

## **7 Admission to the course**

### **7.1 Admission requirements**

To gain access to the course and complete the examinations included in the course, the applicant must be admitted to a doctoral programme at Örebro University.

### **7.2 Selection**

Selection between applicants who have been admitted to doctoral programmes at Örebro University and who otherwise meet the admission requirements as listed above is made according to the following order of precedence:

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If no other selection criteria are specified in this section, priority shall be given to applicants with a lower number of course credits left before the award of their degree over applicants with a higher number of remaining course credits. Should two or more students have equal number of credits,

selection will be done through the drawing of lots. This also applies within any selection groups listed unless otherwise stated.

### 7.3 Other applicants than doctoral students admitted at Örebro University

Other applicants than doctoral students admitted at Örebro University may be given access to the course on the grounds of provisions for and/or agreements regarding contracted courses, joint degrees, national graduate schools or cooperation in other respects with other universities.

Any decisions on what such other applicants may be given access to the course are made separately and on the basis of the provisions and/or agreements that occasion the student to apply for the course.

For participation in the course in other respects, the same provisions shall apply as for doctoral students admitted to Örebro University.

## **8 Transfer of credits for courses, study programmes and other experience**

Provisions on the transfer of credits can be found in the Higher Education Ordinance and on the university's webpage.

## **9 Other information**

### **Transitional provisions**