UNIVERSITY OF GOTHENBURG

FACULTY OFFICE FOR SCIENCE

NTH001 Theoretical and historical perspectives on science, 7.5 credits

Teoretiska och historiska perspektiv på naturvetenskap, 7,5 högskolepoäng

First Cycle

Confirmation

This course syllabus was confirmed by Faculty of Science on 2012-12-21 and was last revised on 2023-03-24 by Dean of the Faculty to be valid from 2023-03-24, autumn semester of 2023.

Field of education: Science 100%
Department: Faculty Office for Science

Position in the educational system

The course is at first cycle and is given both within the programme or as an free-standng course.

The course is mandatory to fulfil the degree requirements for a bachelor's degree in any of the main areas of natural sciences.

The course can be part of the following programmes: 1) Bachelor's Programme in Earth Sciences (N1GVS), 2) Bachelor of Science in Physics (N1FYS), 3) Bachelor's Programme in Biology (N1BIO), 4) Bachelor of Science in Environmental Science (N1MVN), 5) Bachelor's Programme in Mathematics (N1MAT), 6) Bachelor's Programme in Molecular Biology (N1MB1) and 7) Bachelor of Science Programme in Chemistry (N1KEM)

Main field of studies	*Specialization*
-	G1F, First cycle, has less than 60 credits in first-cycle course/s as entry requirements

Entry requirements

Access to the course requires at least 30 credits in a natural sciences subject area.

Learning outcomes

After completing the course, the student is expected to be able to:

Knowledge and understanding

demonstrate knowledge and understanding of some philosophy of science implications of scientific and mathematical practice.

demonstrate familiarity with different theories used to interpret the formation and growth of knowledge in the natural sciences.

Skills and abilities

demonstrate the ability to orally and in writing account for and discuss different approaches to scientific knowledge claims and how they are used.

demonstrate skills in participating in critical discussions about human responsibility for scientific knowledge production and its societal use.

Judgement and approach

demonstrate insight into the importance of social and political conditions for the development of scientific research orientations, and be able to discuss the problem of demarcation between science and quasi-science.

demonstrate the ability to reflect on the conditions and limitations of science and its role in society.

demonstrate the ability to critically identify, evaluate and analyse the gender aspects of science.

Course content

The course is a basic introduction to philosophy of science with a focus on scientific and mathematical knowledge formation. This includes historical, philosophical, sociological, ethical and research policy perspectives on science and mathematics. Initially, a historical overview of the emergence of science is given, emphasising different ways of reaching scientific knowledge in different fields, from empirical observations and experiments to logical-deductive and mathematical approaches.

An important part of the teaching here is the philosophy of science theories that have sought to define criteria and/or methods that distinguish science from non-science, mainly based on the development of physics - but also astronomy and chemistry - up to the beginning of the 20th century. This includes the scientific theories of positivism, Popper and Kuhn, and the sociology of science with its emphasis on the inherent uncertainty of scientific knowledge. It then turns its attention to the increasing role that technoscience has assumed both in research and in the surrounding society.

Through a presentation of research policy and gender analyses of science, students are

given the opportunity to reflect on the importance of institutional factors, financial conditions and gender aspects for scientific knowledge. Another part of the course discusses the ethical implications of research results and their wider societal application. The history of research ethics, different definitions of good research practice, and contemporary examples of ethically problematic research are covered. This part of the course highlights the role of the researcher, not only as a neutral and objective discoverer, but also as a societal actor with a moral responsibility.

Form of teaching

To pass the course, active participation and oral presentations at seminars with compulsory attendance as well as written assignments and written individual home exams are required.

Language of instruction: Swedish
Some texts and lectures may be in English.

Assessment

If a student who has failed twice on the same examination module wishes to change the examiner for the next examination session, such a request should be submitted in writing to the department and shall be granted. unless there are special reasons to the contrary (HF Chapter 6, Section 22).

If the student has received a recommendation from the University of Gothenburg for special pedagogical support, the examiner can, if it is compatible with the objectives of the course and provided that unreasonable resources are not required, decide to give the student an adapted examination or an alternative form of examination.

In the event that a course has been cancelled or undergone major changes, the student shall be guaranteed at least three examinations (including regular examinations) during a period of at least one year, but not more than two years after the course has been cancelled/changed. With regard to internships and clinical placements programme, the same applies, but with a limitation to only one additional examination opportunity.

Grades

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).
Other grading scales require an exemption to be granted (decisions on grading scales are delegated to the Faculty Board according to the University of Gothenburg's decision-making procedure adopted on 8 June 2006).

Regarding the application of the ECTS scale for grades, please refer to the Vice-Chancellor's decision 2007-05-28, dnr G 8 1976/07.

In order to be examined with Pass/ Pass with distinction on the entire course, all

compulsory parts must have received at least the grade Pass. No higher education credits are granted for individual parts of the course, only for passing the entire course.

Course evaluation

A course evaluation is carried out at the end of the course. The results and any changes to the course organisation are communicated both to the students who carried out the evaluation and to the students who will start the course.

Additional information

The course is organised by the Faculty of Science and delivered by the Department of Philosophy, Linguistics and Theory of Science at the Faculty of Humanities.