



Course syllabus

Faculty Board of Science and Engineering
School of Computer Science, Physics and Mathematics

1NT30U Naturorienterande ämnen och teknik åk F-3, 7,5
högskolepoäng

Natural Science subjects and Technology, pre-school up to year 3,
7.5 credits

Main field of study

Technology, Biology, Physics, Chemistry

Subject Group

Educational Sciences/Theoretical Subjects

Level of classification

First Level

Progression

G1F

Date of Ratification

Approved by the Board of the School of Computer Science, Physics and Mathematics
2012-12-10

The course syllabus is valid from spring semester 2013

Prerequisites

Teacher certificate or equivalent.

Objectives

After completing the course, the participants will be able to present their own knowledge in natural science and technology for teachers according with Lgr11. They will:

- demonstrate the relationship between natural science, technology, man, society and nature in current and historical contexts
- identify natural science and technology in everyday life and society and use that as a starting point for learning
- identify technical solutions in existing constructions and implement them into their own - this includes materials and functions among other things
- be able to reflect on different didactic choices and use didactic research for organizing learning situations that can stimulate students' interest and questioning based on national policy documents
- use formative and summative assessment to develop teaching and learning
- develop students' ability to communicate science and technology with various forms of expressions.

Content

The course covers natural science and technology on the basis of students examples taken from everyday life and society. Natural science and technologies characteristics, variability and limits are problematized. Natural science and technical content related to different teaching approaches and practices, and the contents described in Lgr11. The course includes identifying and examining the Natural science and technology in the world. The course also includes, with a didactic research as a starting point, plan, implement and evaluate their own teaching of Natural science. Different types of assessment, with particular focus on formative assessment and reflection on their own teaching is included as an important part. The course also covers different forms of expression to communicate Natural science and technology and peer learning as a means to develop their teaching.

Type of Instruction

The course meetings are local, regional or national. During the course, various approaches are used such as lectures, seminars, development work, surveys and information retrieval.

To be able to implement the course, the participants has to have access to a group of pupils in a school.

Examination

The course is assessed with the grades Fail (U) or Pass (G).

Assessment of students performance is made through presentation of assignments and participation in group exercises and seminars.

Students who do not pass the regular examination will be offered a second examination close to the regular examination.

Course Evaluation

An evaluation is compiled at the end of the course. Evaluation results are compiled in a report and filed with the department's administration and forwarded to the client (Swedish National Agency for Higher Education).

Required Reading and Additional Study Material

Required Reading

Kursplaner, kunskapskrav och kommentarmaterial enligt Lgr11

Andersson, Björn (2010). Att utveckla undervisning i naturvetenskap - kunskapsbygge med hjälp av ämnesdidaktik. Studentlitteratur.

Bjurulf, Veronica (2011). Teknikdidaktik. Nordstedts.

Elfström, Ingela, Nilsson, Bodil, Sterner, Lillemor, Wehner-Godée, Christina (2008). Barn och naturvetenskap – upptäcka, utforska, lära. Liber.

Helldén, Gustav, Jonsson, Gunnar, Karlefors, Inger, & Vikström, Anna (2010). Vägar till naturvetenskapens värld: ämneskunskaper i didaktisk belysning. Liber.

Jönsson, Anders (2010). Lärande bedömning. Gleerups.