



Course syllabus

Faculty of Technology

Department of Physics and Electrical Engineering

1NT31U Naturorienterande ämnen och teknik åk F-3,
fortsättningskurs, 7,5 högskolepoäng

Natural Science subjects and Technology, pre-school up to year 3,
Continuation Course, 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 Faculty of Technology 2013-08-19

The course syllabus is valid from autumn semester 2013

Prerequisites

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

Objectives

After completing the course, the students will be able to:

- use and communicate knowledge in and about science and technology in everyday life related situations where man, nature and society interact
- use subject-specific concepts, principles and models to demonstrate the relationships and processes of science and engineering systems
- demonstrate advanced theoretical and practical knowledge for educational work with children and be able to use digital resources as a tool in this work
- apply and problematize didactic theory in relation to science and technology
- individually plan, implement, document and evaluate the teaching of science and technology for the age group relevant to students' life-world.

Content

Course scientific and technical content is based on the core content as described in the LGR-11, with emphasis on the points that previous course (1NT30U) didn't cover. Participants will work on their own increased scientific and technical understanding of concepts in relation to nature and society in the present and in historical perspective, everything related to the didactic theory. This work includes practical sessions with experiments, excursion, constructions and problem solving. Building on the fiction books for children in this age are planned, implemented, documented and evaluated teaching of

science and technology where subject theory, didactic and assessment of students' knowledge is included. Digital tools are used and peer learning is used as a method to develop their own teaching.

Type of Instruction

The course is primarily distance-based, but with three mandatory physical meetings in Växjö, comprising of 2 days. Communication and course work between meetings is done via a web-based study platform. To follow the course a computer with internet access and the ability to take digital pictures are required. Teaching consists of lectures and mandatory seminars, group work, field trips and practical exercises.

A prerequisite for the implementation of the course is that participants are able to work with a group of pupils in the school.

Examination

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

Assessment and grading is done through presentation of assignments and participation in practical exercises, group work, excursions and seminars.

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

Anderberg, Barbro, von Braun, Robert, Lillieborg, Sigvard & Sandén, Birgit Värt ett försök Bonniers Utbildning

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

Krigsman, Thomas m.fl. (2002) Kemiskafferiet Lärarhögskolan i Stockholm (webresurs)

Pleijel, Håkan (2013) Ekologi En introduktion Gleerups Skolverket DINO-material (webresurs)

Webbaserat material