



Course syllabus

Faculty Board of Science and Engineering

School of Computer Science, Physics and Mathematics

GU7441 Grundläggande naturvetenskap och teknik samt fortsättningsspecialisering i matematik-för verksamhet i skolans tidiga år, 30 högskolepoäng

Basic Natural Science and Technology and Specialization in Mathematics - for the Primary School Years, 30 credits

Main field of study

Mathematics

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
2010-08-18

The course syllabus is valid from spring semester 2011

Prerequisites

30 credits within the field of General Education as well as passed 22.5 credits in Reading, writing and mathematics 1 – specialization for the primary years (GU7411), 30 credits or equivalent.

Expected learning outcomes

Through this course the students should augment their professional teaching skills with emphasis on knowledge and proficiency within science, technology and mathematics taught at pre-school class and primary school levels. The main focus of the course is on a social constructivist way of working

Having completed the course the students should, when the content is taken into consideration:

- be able to analyse the cognitive approach and quality that the official guidelines express
- be familiar with the theoretical and practical applications of science, technology and mathematics in society
- be able to use scientific and technological working methods
- be able to use science, technology and mathematics in relation to questions on the environment, ethics, equality of opportunity and also from a historical and global perspective

- have acquired knowledge of methods and ways of working that can stimulate a child's creativity and joy in discovery with the support of ICT
- be able to make use of and systematise their own and others' experiences as well as relevant research results as a basis for developing the role of the teacher
- have advanced knowledge of how children and pupils before and during primary school learn mathematics
- have a good command of the basic elements within the fields of arithmetic, algebra and geometry
- have the ability to analyse and use critically the mathematical content of teaching material
- be able to utilise different environments to work with basic geometry, algebra, statistics and the pupils' numeracy and spatial awareness
- have an understanding of the importance of communication in the learning of mathematics
- be able to reflect on the possibilities and disadvantages offered by everyday associations in the learning of mathematics.

A complementary aim of the course, as in all teacher training, is to achieve the ability to use written and spoken Swedish correctly.

ICT: The course uses web based conference system as a means of communication. Furthermore, computer searches are widely used.

Content

The course consists of 3 sub-courses. See each sub-course for more information.

Module 1 1NT211 15 credits

Natural Science and Technology intended for the lower level of the Compulsory school

For detailed information, see each course syllabus.

Module 2 1MD303 7.5 credits

Mathematics and Teaching

For detailed information, see each course syllabus.

Module 3 1MD316 7.5 credits

Mathematics and Outdoor Didactics for Middle School Pupils, Focusing on Outdoor Learning

For detailed information, see each course syllabus.

Type of Instruction

Teaching is conducted in the form of lectures, group discussions, laboratory/practical work and seminar exercises. Attendance at examinations, seminars and laboratory work is obligatory.

To attend this course you need access to a field study class or a group of pupils.

Examination

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

A translation of the grade to the ECTS 7-point scale may be obtained upon request. The request for a translation should be made before the final grade for the course is awarded.

The students' achievements are assessed through written and/or oral examinations and/or the presentation of obligatory assignments. The main form of assessment is determined at the beginning of the course.

A second examination will be arranged for students who fail the normal examination.

Course Evaluation

A course evaluation will be carried out at the end of the course in accordance with the

guidelines of the University. The result of the course evaluation will be filed at the department.

Required Reading and Additional Study Material

Literature list

Specified in each module.