



Course syllabus

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

INT151 Barns naturvetenskapliga och tekniska omvärld, 30
högskolepoäng

Children's Scientific and Technological Surroundings, 30 credits

Main field of study

Biology, Physics, Chemistry, Technology

Subject Group

Educational Sciences/Theoretical Subjects

Level of classification

First Level

Progression

GIN

Date of Ratification

Approved by Organisational Committee 2009-08-11

The course syllabus is valid from spring semester 2010

Prerequisites

NO VALUE DEFINED

Expected learning outcomes

Upon completion of the course, the student should be able to:

- plan, execute and evaluate activities in pre-school and the early school years that encourage children to develop an interest for science and technology
- work on practical problem solving, including problem identification, construction and assessment
- deal with scientific and technological items associated with, among other things, gender, environment, ethics global prospects
- place scientific and technological items in current and historical contexts
- make conscious didactic choices from the starting points of national and local policy documents
- initiate, execute and evaluate local development projects associated with the process of learning in the subjects biology, physics, chemistry and technology

Content

The course deals with questions concerning the identity of science and technology.

Scientific/technological problem solving, including problem identification, solution, construction and assessment are included in the course. Theoretical and practical

aspects and items are integrated.

The scientific/technological interaction between the individual, society and the environment. The needs, driving forces and conditions that characterize the growth of science and technology make up the elements. In this way weight is given to gender, environment, ethics and global prospects.

Important events and happenings in the history of science and technology and their significance for mankind and the development of society are highlighted.

The didactics of these subjects, biology, physics, chemistry and technology, as well as the study of current policy documents are fundamental for the entire course.

The field studies comprise the study of policy documents, planning, classroom observation, evaluation of children's pedagogical activities as well as the examination of children's thinking.

The course comprises the following sub-courses:

Sub-course 1: INT111, Children's Scientific and Technological Surroundings, Course A, 7.5 credits.

Sub-course 2: INT112, Children's Scientific and Technological Surroundings, Course B, 7.5 credits.

Sub-course 3: INT113, Children's Scientific and Technological Surroundings, Course C, 7.5 credits.

Sub-course 4: INT114, Children's Scientific and Technological Surroundings, course D, 7.5 credits.

For detailed information, see each course syllabus.

Type of Instruction

The course is a distance course via the Internet. The students are expected to work both independently and in groups. Before each different part of the course precise information will be given concerning literature, study tasks and presentation models. The presentation of the tasks may be made collectively through base group conferences and receive a commentary from the teacher. Tasks may also be individual.

Attendance at meetings is obligatory.

Within field studies the students will participate in, document and evaluate learning situations, take part of local policy documents and from gathered observations discuss the pedagogical work.

Examination

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

On request, students may have their credits translated to ECTS-marks. Such a request must be sent to the examiner before the grading process starts.

The examination is conducted through the presentation of obligatory tasks as well as participation in seminars via a web based conference system. The types of assessment used in the course will be decided on at the beginning of the course. Students who do not pass the regular examination are given the opportunity to do a resit shortly after the regular examination.

Course Evaluation

A written course evaluation will be carried out at the end of the course in accordance with the guidelines of the University. The course evaluation will be filed at the department.

Required Reading and Additional Study Material

Required reading

- Gustafsson, Bengt, *Kosmisk resa*, Nya Doxa, 1998. 128 (128) sidor.
Harlen, Wynne, *Våga språnget*, Almqvist & Wiksell, 2000. Sidor 135 (135).
Mylesand, Mia, *Bygg & konstruktion i förskolan*, Lärarförbundet, 2007. Sidor 123 (123).
Persson, Hans, *Nyfiken på naturvetenskap*, Almqvist & Wiksell, 1999. Sidor 183 (183).
Persson Hans, *Boken om Fysik och Kemi*, Almqvist & Wiksell, 2004. Sidor 159 (159).
Persson Gode, Karin, *Upptäck Naturvetenskap i förskolan*, Natur & Kultur, 2008. Sidor 80 (80).
Sundin, Bosse, *Den kupade handen – människan och tekniken*, Carlssons bokförlag, 2006. Sidor 362 (362).
Temaserie från tidningen Förskolan, *Naturvetenskap och miljö i förskola och förskoleklass*, 2008. Sidor 143 (143).
Wahlström, Kajsa, *Flickor, pojkar och pedagoger*, Utbildningsradion, 2004. Sidor 223 (223).
Utbildningsdepartementet, *Läroplan för förskola*, Lpfö 98. Sidor 16 (16).
Utbildningsdepartementet, *Läroplan för det obligatoriska skolväsendet, förskoleklassen och fritidshemmen*, Lpo 94. Sidor 19 (19).
Skolverket, *Kursplaner för naturvetenskap och teknik*. Sidor 9 (9).
DFM, *Kopierat material*, aktuellt år. Sidor 100 (ca).
För kursen valfri relevant litteratur som väljs i samråd med kursledningen. Sidor 300 (ca).

Alternative literature

- Svaleryd, Kajsa, *Genuspedagogik*, Liber, 2003. Pages 143 (143).

Reference Literature

- Persson, Hans, *Försök med Fysik*, Almqvist & Wiksell, 1996. Sidor 220 (220).
Norkvist, Hans & Powell, David, *Försök med Teknik/7*, Almqvist & Wiksell, 1997. Sidor 218 (218).
Persson, Hans, *Försök med Kemi//*, Almqvist & Wiksell, 1997. Sidor 176 (176)