Linnæus University

Course syllabus

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

1NT211 Naturvetenskap/Teknik för de tidigare skolåren, 15 högskolepoäng

Natural Science and Technology intended for the lower level of the Compulsory school, 15 credits

Main field of study
Biology, Physics, Chemistry, Technology

Subject Group
Educational Sciences/Theoretical Subjects

Level of classification
First Level

Progression
G1N

Date of Ratification
Approved by the Board of the School of Computer Science, Physics and Mathematics 2009-08-11

Revised 2010-08-04. Revision of prerequisites, literature list and course evaluation.

The course syllabus is valid from spring semester 2011

Prerequisites
General entry requirements and Science studies A, Civics A. (Field-specific entry requirements 15 with the exception of Mathematics B and Science B.)

Expected learning outcomes

This course is expected to develop students' learning profession, with special emphasis on knowledge and skills in Natural Science and Technology for teaching in the primary school years and early years of the compulsory school system.
Having completed the course the student is expected to:

- be able to analyze the view on and quality of knowledge expressed in the guiding documents
- know about theoretical and practical implementation of natural science and technology in society
- be able to implement natural scientific and technological work methods
- be able to identify and emphasize natural scientific and technological phenomena from different subject approaches in order to promote a general understanding
- utilize skills regarding presentation- and communication techniques.

Content

The course includes:

- the structures and functions of cells and organisms
- ecology
- concepts in mechanics, heat, electricity, waves and astronomy
- chemistry in everyday life
- the structures and reactions of chemicals
- the development of technology, basic technological concepts and principals
- technical problem solving – practical and theoretical moments are integrated.

This sub course includes biology 3.75 credits, physics 3.75 credits, chemistry 3.75 credits, and technology 3.75 credits.
Forms of documentation: Digital portfolio
IKT: The courses utilize a web based conference system as a means of communication. Computer searches are also utilized to a great extent.
The scientific approach of the students is further developed through writing reports and presentations of projects. The
orientation emphasizes a social-constructive work method .

Type of Instruction

Lectures, laboratory work/practical assignments, seminars and field trips. All examinations, seminars, laboratory work sessions, and the work field training are obligatory.

Examination

The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).
Written and/or verbal tests and/or presentations of obligatory assignments. The main form of examination is decided at the start of the course.
Students who do not pass the regular examinations are offered a new chance in close connection to time of the regular examination.

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.

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

Required reading

Hewitt, P, Suchocki, J & Hewitt,L,*Physical Science Explorations*, 1st Ed. Addison Wesley, 2003.Pages 370 (780).
Harlen, W,*Våga språnget*, 1:a uppl. Almqvist & Wiksell, 2000.Pages 142 (142).
Pleijel, H,*Ekologiboken*, Göteborgs universitet, inst för växt- och miljöve-tenskaper, 2003.Pages 120(120).
Andersson, B,*Elevers tänkande och skolans naturvetenskap*,(www.skolverket.se).
DFM, TD,*Stenciler*,Linnæus University, current year. Pages app. 300.