LT1086 Subject-based teaching and learning 1 7.0 credits

Ämnesdidaktik 1

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Faculty Board at the School of Industrial Engineering and Management

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Basic eligibility only

Intended learning outcomes

After completing the course, students should be able to:

1 Describe and discuss general didactic aspects of technology, mathematics and natural sciences.
2 Describe subject-specific aspects of technology, mathematics and natural sciences.

3 Describe the main features of the dominant learning theories.
4 Discuss and problematise different ways of planning and organising teaching in one or more of the subjects technology, mathematics, physics and chemistry.
5 Describe how subject literacy, gender equality, sustainable development and ethics can be integrated into subject teaching (technology, mathematics and natural sciences).
6 Use steering documents and examples of subject-specific aspects to plan teaching
7 Describe how project work, demonstrations and/or equivalent student-activating teaching sessions in technology/mathematics/natural sciences can be planned.
8 Describe the significance of key concepts covered in the course.

Course contents

The course is intended for students in supplementary teacher education who have a background in technology, physics, chemistry and/or mathematics, and provides basic knowledge in the didactics of these subjects.

The course begins with content covering general didactic aspects and a brief review of learning theories. The introductory subject didactics section is studied by all students and provides an introduction to the field of subject didactics and a foundation in planning and organising teaching and student learning in technology, mathematics and natural sciences. It also includes applications of interdisciplinary perspectives such as equality, gender equality, sustainable development and ethics.

Examination

- INL1 - Assignment with oral follow-up, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- SEM1 - Seminar technology education, 1.0 credits, grading scale: P, F
- SEM2 - Seminar mathematic education, 1.0 credits, grading scale: P, F
- SEM3 - Seminar natural sciences science education, 1.0 credits, grading scale: P, F
- PRO1 - Project with written and oral presentation in mathematics education, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- PRO3 - Project with written and oral presentation in technology education, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- PRO2 - Project with written and oral presentation in science education, 3.0 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability. The examiner may apply another examination format when re-examining individual students. If the course is discontinued, students may request to be examined during the following two academic years.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.

- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.