LT1017 Subject-based teaching and learning 15.0 credits

Ämnesdidaktik

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

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

On 14/10/2022, the Dean of the ITM school has decided establish this official course syllabus to apply from spring term 23, registration number: M-2022-1554.

Grading scale

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

Education cycle

First cycle

Main field of study

Technology and Learning

Specific prerequisites

For KPULU: General admission requirements.

For LÄRGR: General admission requirements with at least 90 credits of subject knowledge in the subjects of chemistry, physics, technology and/or mathematics , equivalent the content of year 1 and 2.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

The course should give a clear qualification foundation with respect to subject didactics for one or more of the subjects technology, mathematics, physics and chemistry.

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

1. Give an account of and problematise general didactic aspects in technology, mathematics and natural sciences

2. Give an account of and problematise specific contents in teaching such as ethics, sex and relationship, and gender, as well as language integrated working methods and teaching with regard to neuropsychiatric difficulties

3. Account for, discuss and problematise specific contents in teaching with a focus on sustainable development

4. Discuss and problematise different ways to plan, organise and evaluate teaching in one or more of the subjects technology, mathematics, physics and chemistry

5. Discuss how different assessment methods can be applied to evaluate pupils' knowledge in one or more of the subjects technology, mathematics, physics and chemistry

6. Plan and carry out labs, demonstrations and/or equivalent teaching activities in one of the subjects physics, chemistry, mathematics or technology

Course contents

The course is intended for students of supplementary teacher training that has there subject background in technology, physics, chemistry and/or mathematics and gives basic knowledge in the didactics of these subjects. Which course units that are read depend on the student's subject background.

The course consists of an initial subject didactics unit that is taken by all students and includes an introduction to the didactic field and a basis in planning and organisation of teaching and pupils' learning in technology, mathematics and natural sciences. Furthermore, the initial subject didactics unit consists of specific teaching content such as ethics, sex and relationship, gender and sustainable development and how language integrated working methods can be implemented in teaching and how consideration is taken to neuropsychiatric difficulties in teaching. The initial subject didactics unit that is carried out during the summer session includes several lectures, two individual written assignments and two group tasks.

The initial subject didactics part of 5 higher education credits is split between the summer session (3 credits) and the autumn semester (2 credits) are followed of two subject-specific

didactics blocks of 5 higher education credits each. These are taken depending on the student's combination of subjects:

- Physics didactics: block 1 (5 higher education credits), block 2 (5 higher education credits).

- Chemistry didactics: block 1 (5 higher education credits), block 2 (5 higher education credits).

- Mathematics didactics: block 1 (5 higher education credits), block 2 (5 higher education credits).

- Technology didactics: block 1 (5 higher education credits), block 2 (5 higher education credits).

The elective blocks are taken in one or two subjects. A student who has only one subject takes two blocks in this subject. Block 1 includes planning, organisation and evaluation of teaching and pupils' learning based on current didactics research and regulation related to respective subject. Furthermore, different assessment methods and their application in the subject are treated. Block 2 includes specialised studies of planning, organisation and evaluation of teaching and pupils' learning based on current didactics research in the subject.

Examination

- FYS1 - Teaching and learning in physics, unit 1, 5.0 credits, grading scale: A, B, C, D, E, FX, F
- FYS2 - Teaching and learning in physics, unit 2, 5.0 credits, grading scale: A, B, C, D, E, FX, F
- INL1 - Written assignments, introductory unit, 1.0 credits, grading scale: P, F
- INL2 - Written assignments, introductory unit, 3.0 credits, grading scale: P, F
- KEM1 - Teaching and learning in chemistry, unit 1, 5.0 credits, grading scale: A, B, C, D, E, FX, F
- KEM2 - Teaching and learning in chemistry, unit 2, 5.0 credits, grading scale: A, B, C, D, E, FX, F
- MAT1 - Teaching and learning in mathematics, unit 1, 5.0 credits, grading scale: A, B, C, D, E, FX, F
- MAT2 - Teaching and learning in mathematics, unit 2, 5.0 credits, grading scale: A, B, C, D, E, FX, F
- SEM1 - Seminars, introctory unit, 1.0 credits, grading scale: P, F
- TEK1 - Teaching and learning in technology, unit 1, 5.0 credits, grading scale: A, B, C, D, E, FX, F
- TEK2 - Teaching and learning in technology, unit 2, 5.0 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.

To complete the course, a Pass grade on SEM1, INL1 and INL2 is required, and passing of two of the blocks FYS1, FYS2, KEM1, KEM2, MAT1, MAT2, TEK1, TEK2. For students with a single subject, two blocks in the same subject are taken, and for students with two subjects, block 1 in the two subjects is taken.

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.