



LT1035 VFU2: Experiments and Informal Learning Environments 11.0 credits

VFU2: experiment och informella lärandemiljöer

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 2023-10-05, the Dean of the ITM School has decided to establish this official course syllabus to apply from spring term 2024 (registration number M-2023-1877).

Grading scale

VG, G, U

Education cycle

First cycle

Main field of study

Technology

Additional regulations

LT1035 – cannot be included together with LT1003

Specific prerequisites

For admission to the course, the following prerequisites apply:

Common program courses

- Physics, Chemistry, Energy and the Environment, 15 credits (MJ1530)
- Mathematics Education and Pre-Service placement for Upper Secondary School, 7.5 credits (UMK212)
- Development and Learning in Science and Technology, 6 credits (UMK310)
- Learning as Professional Assignments, 8.5 credits in (DIK200)

And

Specialised courses

MAKE - Specialisation in Mathematics and Chemistry

- Chemical Technology, 10 credits (KE1150)
- Organic Chemistry, Basic Concepts and Practice, 6 credits (KD1230)

or

MAFY - Specialisation in Mathematics and Physics

- Classical Physics, 7.5 credits (SK1104)
- Mechanics, 9 credits (SG1112)
- Experimental Physics, 4 credits (SK1105)

or

TEMI - Specialisation in Mathematics and Technology with specialisation in energy and environment

- Mechanics, shorter course, 6 credits (SG1102)
- Ecology and Environmental Effects, 7.5 credits (MJ1508)

TIKT - Specialisation in Mathematics and Technology with specialisation in information and communication technique

- Programming Techniques and Matlab, 8 credits (DD1312)
- Applied Computer Science and Ethics, 7.5 credits (DD1325)
- Java programming for Python programmers, 1.5 credits (DD1380)

Language of instruction

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

Intended learning outcomes

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

1. under supervision, plan, carry out, evaluate and develop lessons with a focus on practical work and labs, based on relevant knowledge in technology and/or scientific subjects,
2. analyse and discuss pupils' learning at lesson visits in informal learning environments in the technical and scientific fields,
3. communicate through listening, speaking and writing in a way suitable and appropriate for the school context,
4. observe and analyse pupils' learning, including the preconditions for learning, in relation to the aim of the activities in general, and in particular regarding practical work and labs,
5. approach pupils and school staff in various situations with empathy, respect and a professional approach, in accordance with the fundamental values of the school, and identify and discuss their own values and attitudes that may affect their approach,
6. discuss how equality, equal opportunities, sustainable development and ethics can be included in the educational activities in general, and in technology and scientific subjects in particular,
7. identify, describe and analyse their own strengths and areas of improvement before the next school placement in order to develop skills that are valuable for the professional practice.

Course contents

The student is introduced to the activities and the organisation of the school by spending a longer period at a school (corresponding to 9 ECTS). Under supervision, the student participates in the school activities, mainly through teaching and auscultation, but also through participation in other activities such as meetings and conferences. The focus for the teaching should lie on practical work and labs in the teaching of technical and scientific fields. Subjects taught and the type of school should be relevant for the student's future higher education qualification.

The course also includes lectures, seminars and written assignments. Furthermore, the course includes the study of informal learning environments, such as science centres and museums, within the technical and scientific fields.

The course implies integrating theory and practice based on acquired experiences, relevant subject-specific and didactic knowledge, and systematic reflection.

Examination

- INL1 - Hand-in assignments, including oral presentation, 2.0 credits, grading scale: P, F
- VFU1 - School Placement, 9.0 credits, grading scale: VG, G, U

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.

The course is examined based on the following:

- Written submissions.
- Oral presentations.
- The observations of teachers and museum staff during development, class visits and experimental work.
- The placement supervisor's written assessments of the student's efforts and knowledge.

The grading criteria of the course are distributed at the beginning of the course.

A student can in exceptional cases in advance be forced to interrupt the placement if

1. There is noticeable risk that the student may injure other individuals or property due to serious lack of skills or particularly inappropriate behaviour
2. The student considerably breaks agreements, contracts or current regulatory frameworks that concern the placement.

The student should in these cases fail the course and be informed about the failure in a personal meeting. The reason that the placement has been interrupted should be recorded.

If failed in the placement, the student has the right to carry out another placement period, but not more than two in all. If special circumstances apply, the student can apply to carry out the placement period once more.

Implementation of the placement course part is offered once a year. For presentations and written submissions, at least two opportunities for examinations should be scheduled a year.

In agreement with the KTH coordinator for disabilities, the examiner may make the decision to adapt an examination for students in possession of a valid medical certificate documenting a disability. In re-examinations, the examiner has the right to allow other forms of examination of individual students.

Participation in all teaching is compulsory. In case of special reasons, and in consultation with the teacher concerned, the examiner can allow the student exemption from the obligation to participate in certain compulsory activities.

Other requirements for final grade

Passing the course requires pass on all assessment components.

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.