LL138U Introduction to Programming in Visual Environments 5.0 credits

Introduktion till programmering i visuell miljö

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

Establishment

On 15/04/2021, the Dean of the ITM School has decided to establish this official course syllabus to apply from autumn term 2021 (registration number M-2021-0480).

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

General entry requirements.

Language of instruction

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

Intended learning outcomes

After passing the course, the student should be able to:

- give an account of basic concepts and building blocks in programming, for example sequences, alternatives, conditions, repetitions, algorithms and functions
- create, modify, troubleshoot and test programs in a visual programming language and have basic knowledge of at least one other language
- use visual programming to control physical and virtual objects
- write simple programmes in a text-based programming language, and discuss differences and similarities between visual and text-based programming
- analyse relevant course syllabuses and subject plans to identify items and contents where programming in visual environments can be used
- orient oneself in current practices and didactic research in basic teaching of programming
- plan and evaluate teaching of basic programming for pupils
- discuss how some current social issues where digitisation is of importance, can be introduced to pupils.

Course contents

The course should contribute to giving active teachers primarily in grades 4-9 the knowledge needed to teach programming, mainly in the subject technology, but also in mathematics and other subjects. The core of the course consists of basic programming in visual environments and how this can be used to introduce pupils in the primary and lower-secondary school to programming.

The content is based on a framework curriculum established by the Swedish National Agency for Education.

- Basic computational concepts
- Simple programming in a visual environment and basic programming in at least one other
- Introduction to visual programming languages and development environments that are common at school
- Introduction to a text-based programming language
- Comparisons between visual and text-based programming from technical perspectives
- Comparisons between visual and text-based programming from didactic perspective
- Some social issues where information and communication technology has great importance
- Introductory didactics of programming and didactic aspects on society issues related to information and communication technology

- Different ways to view programming and digitisation as general knowledge or civic knowledge
- Different ways to view the purpose of programming and digitisation as an element in the primary and lower-secondary school

Examination

- INL1 - Written assignments, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- SEM1 - Seminars and exercises, 2.0 credits, grading scale: P, 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.

Other requirements for final grade

Active participation in compulsory tuition.

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.

Additional regulations

The course is given as contract education and is financed by The Swedish National Agency for Education. Special entry requirements apply.