

SYLLABUS

Software Engineering 7.5 credits S0010E

Programvaruteknik

Course syllabus admitted: Autumn 2023 Sp 1 - Present

**DECISION DATE
2021-02-16**

Software Engineering 7.5 credits S0010E

Programvaruteknik

First cycle, S0010E

| Education level | Grade scale | Subject | Subject group (SCB) |
|-----------------|-------------|-------------|---------------------|
| First cycle | G U 3 4 5 | Medieteknik | Computer Technology |

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language and Deep knowledge in programming, e.g. D0009E Introduction to programming, D0037D Object-oriented programming and D0041D Data structures and algorithms or equivalent.

Good knowledge in English equivalent to English 6.

Selection

The selection is based on 1-165 credits.

Course Aim

After course completion, the student should be able to demonstrate:

1. in depth knowledge about a) the scientific foundation of structures object-oriented software development and design and b) the proven experience as programmers in this field of Computer Science
2. extended capacity for carrying out teamwork and collaboration with various constellations, both in groups where the students choose whom to work with and in groups put together by others
3. ability to create, analyse and critically evaluate quality characteristics and metrics of various technical solutions in terms of the design and implementation of large computer programs by using a modern object-oriented programming language
4. extended ability to plan and use appropriate project methods to undertake advanced programming tasks within predetermined parameters
5. extended ability to present and discuss information, problems and solutions both verbally and in textual form

Contents

This course provides deeper theoretical knowledge of object oriented software development (analysis, design, implementation and test of software).

Abstraction, encapsulation and object relations, design patterns, writing code, version control.

Agile software development processes and documentation. Requirements engineering and system modeling.

Working environment and gender mainstreaming.

Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

The course consists of lectures and laboratory work.

Laboratory work are written in an object oriented language.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided. Examination consists of a final written exam and mandatory programming assignments during the course:

1. Final written exam. Individual lab assignments;
2. Lab assignments carried out in groups;
3. Final written exam. Individual lab assignments;
4. Final written exam. Individual lab assignments;
5. Lab assignments.

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term "unauthorized aids" refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Course offered by

Department of Computer Science, Electrical and Space Engineering

Modules

| Code | Description | Grade scale | Cr | Status | From period | Title |
|------|-----------------|-------------|-----|-----------|-------------|-------|
| 0001 | Laboratory work | U G# | 4.5 | Mandatory | A21 | |
| 0002 | Written exam | G U 3 4 5 | 3 | Mandatory | A21 | |

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Syllabus established

by Jonny Johansson, HUL SRT 2021-02-16