



# DD2487 Large-Scale Software Development 7.5 credits

Storskalig programvaruutveckling

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

Course syllabus for DD2487 valid from Autumn 2020

## Grading scale

P, F

## Education cycle

Second cycle

## Main field of study

Computer Science and Engineering

## Specific prerequisites

Object-oriented software development equivalent to one of the courses DD2480, DD1392/DD1393, DD1346, DD1387/DD1388/DD2387 or DD1385/DD2385.

## Language of instruction

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

## Intended learning outcomes

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

- structure, using functional programming, large programs so that they become easier to understand and manage,
- identify the need of design patterns in development of new or in administration of existing code, as well as implement these where appropriate,
- design and document public APIs with a clear responsibility,
- design entities so that they become testable and write tests for them,
- protect internal design of a program from the public APIs,
- develop a programme in collaboration with others,
- review and reflect on source code,
- develop given source code

in order to be able to

- understand and master the parameters in software development that make source code sustainable, re-usable and flexible during changing requirements.

## Course contents

Programmes as compositions of functions. Comparison between functional and object-oriented programming. Handling and identification of code complexity.

The open-closed principle.

Modelling of information.

Business logic and rules compared with handling of state.

APIs. Documentation of entities.

Testability and the importance of tests. Tests as documentation. Mutability and persistent data structures. Clean functions. Thread safe programming.

## Examination

- PRO1 - Software engineering project, 7.5 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.

## Other requirements for final grade

Passed software development project including peer assessment.

## 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.