DD2386 Patterns for Large-scale Development 7.5 credits

Mjukvarukonstruktion i större system

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

Establishment

Course syllabus for DD2386 valid from Autumn 2015

Grading scale

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

Education cycle

Second cycle

Main field of study

Computer Science and Engineering, Information Technology, Information and Communication Technology

Specific prerequisites

For non-program students, 90 credits being required of which 45 credits have to be within mathematics or informatics. Furthermore English B or the equivalent is required .

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

- identify the need of design patterns in development of new or in administration of existing code, and implement these, where appropriate
- structure, from an object-oriented perspective, large programs so that they become easier to understand and manage
- design and document public APIs with a clear responsibility
- design entities so that they become testable and write tests for them
- protect the internal design from the public APIs
- develop a program in collaboration with other developers
- review and reflect on program code
- develop given program code

in order to

- understand and master the parameters within software development that make program code sustainable, re-usable flexible to change of requirements.

Course contents

Design patterns: open-closed principle, single responsibility principle, inversion of control, strategy pattern, template pattern, adapter pattern, wrapper pattern, decorator pattern and builder pattern; unit - and system testing, dependency injection, global state, APIs, implementation leakages, documentation of components.

Disposition

The course consists of a series of lab assignments, sprints, where new demads will be presented in each sprint. At the end, code review of code written by others should be performed.

Course literature

Reading list is presented no later than 4 weeks before the start of the course on the course web.

Examination

- PRO1 - project, 7.5 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.

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

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.