FSF3583 Functional Programming 7.5 credits

Funktionell programmering

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 FSF3583 valid from Spring 2019

Grading scale

Education cycle

Third cycle

Specific prerequisites

A Master degree, including at least 30 credits in Mathematics.

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 large programs by functional programming, so that they become simpler to understand, manage and maintain,
- use function composition as a method to create abstractions necessary to realize the requirements for large programs,
- design entities so that they become reusable, robust and testable,
- identify unintended complexity of a program in an early stage and be able to redesign that part,
- understand persistent data structure and their design implications for a program,
- design data driven programs,
- understand the benefits coming from a robust syntax with macros.

Course contents

Persistent data structures, pure and testable functions, abstractions of code, static and dynamic typed code and their consequences for a program in the large, identify and reason about hidden state, the building of stateless in contrast to component with encapsulated state, separation of behaviour and information.

Disposition

Lectures and one lab session.

Course literature

Communicated in the beginning of the course.

Examination

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

Computer assignments completed.

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.