IV1350 Object Oriented Design 7.5 credits

Objektorienterad design

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

Establishment

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Completed upper secondary education including documented proficiency in Swedish corresponding to Swedish B and English corresponding to English A. For students who received/will receive their final school grades after 31 December 2009, there is an additional entry requirement for mathematics as follows: documented proficiency in mathematics corresponding to Mathematics A. And the specific requirements of mathematics, physics and chemistry corresponding to Mathematics D, Physics B and Chemistry A.

Basic knowledge of object-oriented programming equivalent to ID1301.

Language of instruction

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

Intended learning outcomes

After the course you shall be able to implement a given requirement specification in robust, flexible, and easily understood code. You shall also be able to critically and systematically evaluate different designs according to criteria such as low coupling, high cohesion and encapsulation. You shall be so familiar with the area that you can, with good self-confident, discuss the advantages and disadvantages of a design and refer to well-known criteria. Thus after completing the course:

- You shall be able to perform a basic object-oriented analysis and discuss it.
- You shall be able to apply important principles of object-oriented design, such as low coupling, high cohesion, encapsulation and polymorphism. You shall also be able to discuss a design according to these criteria.
- You shall be able to apply important principles of object-oriented programming, such as code conventions, comments and basic refactorings. You shall also be able to discuss a program according to these criteria.
- You shall be able to use a few well-known design patterns (mainly GoF) and refer to these when you discuss a design.
- Without problems be able to express a code in UML and be able to translate UML diagrams with the most common symbols to code.

Course contents

- Object-oriented design and design patterns
- Best practices for object-oriented programming, for example refactorings
- Object-oriented analysis
- UML (Unified Modeling Language)
- Architecture and architectural patterns
- Documentation of architecture and design

Course literature

Larman: Applying UML and Patterns, third edition (Prentice-Hall 2004)
ISBN:0-13-148906-2

Examination

- TEN1 - Examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory Work, 4.5 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.

Other requirements for final grade

Grading scale: A/B/C/D/E/Fx/F

The course has two subcourses, LAB1 and TEN1. The grades of both are A-F. Higher grades in LAB1 are only given if the labs are reported on the scheduled seminars during the course. The grade criteria for both LAB1 and TEN1 can be found in the course information.

The final grade is calculated with the formula (4.5*LAB1 + 3*TEN1)/7.5, correctly rounded. The grades A-F are translated to the numbers 5-0 in this calculation. Both subcourses must be passed (grade E) before a final grade is given.

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.