IV1300 Software Engineering 7.5 credits

Programvaruteknik

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 IV1300 valid from Spring 2009

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Language of instruction

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

Intended learning outcomes

The purpose of software engineering is to enable repetitively successful software development, that is software projects where the software is developed according to its specification and within given time and budget boundaries. In a world of increasing complexity and growing demands on flexibility it is necessary to combine software engineering principles with agile methods like test-driven development and customer on site.

Having successfully completed the course, the student should be able to:

* describe what is the difference between plan-driven and agile processes and motivate the description
* account for what is significant for a software engineering approach to software development and the principles behind it
* account for what is significant for a plan-driven approach to software development and the principles behind it
* account for what is significant for an agile approach to software development and the principles behind it
* describe the agile methods of Scrum and XP
* describe several techniques (both classical software engineering ones and agile ones) for:
o requirements elicitation and requirement management
o resource planning
o risk analysis and risk management
o test planning
o version management
o time and cost estimations
* make judgements about applicability of a these techniques in some known project, possibly combining plan-driven techniques with agile ones
* decide and motivate why some technique is suitable for use in a plan driven software project
* decide and motivate why some technique is suitable for use in an agile software project
* find suitable software engineering methods for his or her work in future projects
* easily adapt to work processes using software engineering techniques
* evaluate projects and analyse what caused successes and failures for use in future projects

Course contents

To successfully plan and lead a non-trivial software project, it is important to possess knowledge of all project activities in a software project. The course focuses on teaching activities such as project planning and management, quality assurance, version management, basic cost and time estimation, basic software metrics, making and analysing requirements specifications and basic validation and verification of software.

After the course, the student will have:
* participated actively in discussions during lectures and seminars
* participated actively in a software project using a combination of plan-driven techniques and agile ones

Disposition

Lectures, seminars.

Course literature

To be decided.

Examination

  • PRO1 - Project, 4.5 credits, grading scale: P, F
  • TEN1 - Examination, 3.0 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.

The goal of the software project is to get practical experience of using software engineering techniques.

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.