



ID2008 Software Engineering and Security Architecture 7.5 credits

Software Engineering and Security Architecture

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 ID2008 valid from Spring 2009

Grading scale

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

Education cycle

Second cycle

Main field of study

Specific prerequisites

Language of instruction

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

Intended learning outcomes

Having completed this course the student will be able to participate in, and cooperate with, software development teams with a goal to achieving appropriate levels of security for that team's software products.

To this end the student will be able to:

- * identify common software vulnerabilities, their causes, symptoms, and remedies.
- * understand the roles and activities in project management that promote secure software development.
- * apply secure software design principles, and methods and tools for the secure implementation of those designs.
- * apply suitable security architectures.
- * relate to standards of relevance for the area of secure software engineering, in particular to understand the advantages, roles, mechanisms, and difficulties involved in methods for evaluating assurance in security software.

Course contents

With the starting point of studies into the problem in terms of known software vulnerabilities, the course then relates the different stages of the software development cycle to measures that can suitably alleviate software vulnerabilities.

Assurance criteria evaluation methods are primarily represented by The Common Criteria. In order to gain a broad understanding of the method it is presented through several complementary perspectives. Apart from an historical view over its development it is studied from the point of view of several of the primary beneficiaries of the method.

Disposition

Lectures (approx. 26 h) and practical assignment

Emphasis is placed on active study of the subject matter, both individually and in groups, i.e., the students are expected to research the subject matter through studies of the course literature and the Internet. This research is shared during the course through group discussion, additions to the course web pages, and active participation at lectures.

Students will be required to actively participate in practical project work where several of the above mentioned methods, tools and principles are applied in a fictitious software development project. The results from this work are presented in a written report and active seminar participation toward the end of the course.

Course literature

Preliminary:

Software Security, Gary McGraw

Upplaga: Förlag: Addison-Wesley År: 2006

ISBN: 0-321-35670-5

Other reading material:

Digital copies of scientific papers, articles and other documentation supplied during the course.

Examination

- PRO1 - Project, 3.8 credits, grading scale: P, F
- TEN1 - Examination, 3.7 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.

Examination is comprised of a written exam and a practical project. The written exam is graded according to the scale A,B,C,D,E,Fx,F. The practical project is completed in student groups and is graded pass, fail, or complementary work required.

Other requirements for final grade

A pass for the course requires a pass mark on both the written exam and the project work. The student's grade for the course is based on the grade for the written exam.

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.