DD2395 Computer Security 6.0 credits

Datasäkerhet

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

Establishment

Course syllabus for DD2395 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

Specific prerequisites

Single course students: 90 university credits including 45 university credits in Mathematics and/or Information Technology and the courses SF1604 Linear algebra, SF1625 Calculus in one variable, SF1626 Calculus in several variables, SF1901 Probability theory and statistics, DD1337 Programming and DD1338 Algorithms and Data Structures or equivalent.

Language of instruction

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

Intended learning outcomes

The students should be able to:

- recognize threats to confidentiality, integrity, and availability of systems,
- explain the basic computer security terminology and concepts and use them correctly,
- find and apply documentation of security-related problems and tools,
- analyze small pieces of code or system descriptions in terms of their security,
- identify vulnerabilities of such code or descriptions and predict their corresponding threats,
- select counter-measures to identified threats and argue their effectiveness,
- compare counter-measures and evaluate their side-effects,
- present and explain their reasoning to others

in order to be able to:

- develop software or computer systems with security in mind,
- go on to more specialized topics, such as network security.

Course contents

- introduction to security
- introduction to cryptography
- authentication, access control, security models
- intrusion detection, firewalls
- malware: virus/worm/trojans
- web attacks
- buffer overflows
- secure programming
- human factors, audits, social engineering.

Course literature

Course literature is not yet decided but will be announced at course web page at least 4 weeks before course start.

Examination

- TEN1 - Examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F

- LAB1 - Laboratory Work, 3.0 credits, grading scale: P, 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.

In this course all the regulations of the code of honor at the School of Computer science and Communication apply, see: http://www.kth.se/csc/student/hederskodex/1.17237?l=en_UK.

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.