

Syllabus

for course at advanced level

Computer Security
Datasäkerhet

30.0 Higher Education
Credits
30.0 ECTS credits

Course code:	DA7043
Valid from:	Autumn 2011
Date of approval:	2011-01-17
Department	Department of Mathematics (incl. Math. Statistics)
Main field:	Computer Science
Specialisation:	A1N - Second cycle, has only first-cycle course/s as entry requirements

Decision

This syllabus has been approved by the Board of the Faculty of Science at Stockholm University, September 27, 2006.

Prerequisites and special admittance requirements

For course admission knowledge equivalent to Computer Science, Degree Project, FL, 15 HECs is required.

Course structure

Examination code	Name	Higher Education Credits
AVAL	Advanced Algorithms	6
COSE	Computer Security	6
IPPI	Protocols and Principles of the Internet	6
KRYP	Foundations of Cryptography	6
NESE	Network Security	6

Course content

a. The course covers technical computer security. The knowledge is useful in work with development, evaluation and implementation of computer systems requiring security towards unauthorized access, modifying and interference.

b. The course includes the following elements:

- Computer Security, 6 HECs
- Advanced Algorithms, 6 HECs
- Protocols and Principles of the Internet, 6 HECs
- Foundations of Cryptography, 6 HECs
- Network Security, 6 HECs

Learning outcomes

It is expected that the student after taking the course will:

- be able to use established terminology and view of computer security and give an account of ethical stands within this area
- be able to give an account of common attacks on computer systems and methods to ward them off
- have ability to analyse and evaluate computer systems regarding computer security of posed requirements and standards

- be able to independently judge relevance and sufficiency of security demands and qualities in computer systems
- be able to successfully participate in development and investigation work in computer security

Education

The education consists of lectures, submitted work, exercises, and practical exercises.

Participation in the practical exercises is compulsory. An examiner may rule that a student is not obliged to participate in certain compulsory education, if there are special grounds for this, after consultation with the relevant teacher.

Forms of examination

a. Examination for the course is in the following manner: measurement of knowledge takes place through written and/or oral examination, and written and/or oral presentations of submitted work.

b. Grading is carried out according to a 7-point scale related to learning objectives:

A = Excellent

B = Very Good

C = Good

D = Satisfactory

E = Sufficient

Fx = Fail

F = Fail

c. Grading criteria for the course will be distributed at the start of the course.

d. A minimum grade of E is required to pass the course, together with completion of the practical exercises, followed by its presentation and award of a "Sufficient" grade.

e. Students who fail to achieve a pass grade in an ordinary examination have the right to take at least further four examinations, as long as the course is given. The term "examination" here is used to denote also other compulsory elements of the course. Students who have achieved a pass grade on an examination may not retake this examination in order to attempt to achieve a higher grade. Students who have failed to reach a pass grade on two occasions have the right to request that a different teacher be appointed to set the grade of the course. A request for such appointment must be sent to the departmental board.

Interim

Students may request that the examination is carried out in accordance with this syllabus even after it has ceased to apply. This right is limited, however, to a maximum of three occasions during a two-year-period after the end of giving the course. A request for such examination must be sent to the departmental board.

Limitations

The course may not be included in a degree together with the course Internet Technology, SL (DA7005) or Theoretical Computer Science, SL (DA7008).

Misc

The course is a component of the Master's Programme in Computer Science, and it can also be taken as an individual course.

Required reading

Course literature is decided by the departmental board and is described in an appendix to the syllabus.