

INFN70, Informatics: Information Systems Security, 7.5 credits

Informatik: Säkerhet i informationssystem, 7,5 högskolepoäng
Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by The Board of the Department of Informatics on 2021-11-16 to be valid from 2022-01-17, spring semester 2022.

General Information

Language of instruction: English

Main field of studies

Informatics

Information Systems

Depth of study relative to the degree requirements

A1N, Second cycle, has only first-cycle course/s as entry requirements

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Learning outcomes

On completion of the course, the student shall have basic knowledge of information systems security. Furthermore, the student shall have general knowledge of vulnerabilities in information systems and knowledge of fundamental principles of data security. The student shall also have knowledge of basic technological and organisational concepts and models of security. Moreover, the student shall have insights into issues of information security assessment and into risk and security assessment as a function of environment and context.

Knowledge and understanding

For a pass on the course, the student shall demonstrate knowledge of and understanding of

- different security risks, vulnerabilities and problems
- security solutions in information systems

- the fundamentals of drawing up an information security plan
- the link between threat, vulnerabilities and risks and consequence with regard to information security
- current information security issues including prevalent threats, countermeasures, and ongoing research

Competence and skills

For a pass on the course, students shall demonstrate competence and skills individually or in groups to

- identify relevant security threats in information systems
- provide arguments about and discuss subjects of relevance to the course
- understand principles that would facilitate the application of knowledge in practice

Judgement and approach

For a pass on the course, students shall demonstrate the ability to

- reflect on issues and solutions of information systems security
- account for advantages and drawbacks of different solutions to problems of information systems security
- assess and critically evaluate the role that information systems security plays in, and the impact that information systems security measures have on individuals' privacy and personal integrity
- assess and critically analyse key discussions and claims within the information systems security domain

Course content

The course includes

- vulnerabilities in information systems and basic security principles
- security-enhancing technologies, such as identification and authentication, access control, cryptography, operating systems security
- malware, such as computer viruses, trojan horses and spyware
- assessment of security and security models
- security in distributed systems, security in networks, Internet security
- database security
- risk and security assessment as a function of environment and context
- design of risk and vulnerability analyses

Course design

The teaching consists of lectures, classes and seminars.

The course includes compulsory components, which are stated in the schedule.

Assessment

The assessment is based on a research paper, group assignments and a seminar.

Re-examinations are offered in close conjunction with the first examination.

The test and course grades are determined by the course examiner. The examiner is entitled to change the grades given by the teachers on the course if this does not violate Chapter 6, Section 24 of the Higher Education Ordinance (1993:100).

Academic misconduct such as cheating, plagiarism, fabrication and falsification is considered a serious offence in higher education (see Chapter 10 of the Higher Education Ordinance). The disciplinary measures that may be taken as a result of such offences are caution or suspension for a limited period of time from the university (and all the faculties of the university).

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Subcourses that are part of this course can be found in an appendix at the end of this document.

Grades

Marking scale: Fail, E, D, C, B, A.

Grade (Definition) Points or percentage out of maximum points. Characteristic.

A (Excellent) 85-100. A distinguished result that is excellent with regard to theoretical depth, practical relevance, analytical ability and independent thought.

B (Very good) 75-84. A very good result with regard to theoretical depth, practical relevance, analytical ability and independent thought.

C (Good) 65-74. The result is of a good standard with regard to theoretical depth, practical relevance, analytical ability and independent thought and lives up to expectations.

D (Satisfactory) 55-64. The result is of a satisfactory standard with regard to theoretical depth, practical relevance, analytical ability and independent thought.

E (Sufficient) 50-54. The result satisfies the minimum requirements with regard to theoretical depth, practical relevance, analytical ability and independent thought, but not more.

F (Fail) 0-49. The result does not meet the minimum requirements with regard to theoretical depth, practical relevance, analytical ability and independent thought.

To pass the course, the students must have been awarded the grade of E or higher.

Grading rules and definitions

Grades are awarded according to a graded scale from A (highest) to F (lowest), with E as the minimum passing grade.

When the exam/assignment is not graded, the grades G (Pass) or F (Fail) will be applied.

Course grades

When calculating course grades, the graded components will be weighted according to the following formula:

The number of credits for the exam is multiplied with the exam score. The total value is then divided by the total number of credits for the exams/assignments included. The resulting average is then rounded off to the nearest whole number. The number indicates the relevant course grade in accordance with the grading definitions above.

For exams/assignments which are graded and scored, the grades A to F will be used in accordance with the grading definitions above. The exam score will be used directly in the calculation.

For exams/assignments which are graded but not scored, the grades A to F will be used and converted as follows: A = 92, B = 80, C = 70, D = 60, E = 52.

Exams/assignments which are not graded but awarded with G (Pass) or F (Fail) will not be included in the calculation of the course grade.

Entry requirements

To be admitted to the course, the student must have passed the general requirements and the courses: "Informatics: Introduction to Information Systems, 1-30 cr" and "Information Systems: IS and Business Development, 31-60 cr", "Informatics: Bachelor Degree Project (Thesis), 15 cr" and further 15 credits informatics/information systems at Bachelor level, or the equivalent. English 6/English Course B.

An exception for the general entry requirement in Swedish will be granted when the course is given in English.

Further information

INFC40 may not be included in a degree together with INFC40 or the equivalent.

It is compulsory to attend the introduction meeting, where a roll call will be taken. Absence without notification means that the admitted student will lose his/her seat on the course.

For transitional provisions with regard to previous courses, please contact the study advisor for an individual assessment.

If the course is discontinued, there may be limited opportunities for re-examination. Please contact the study advisor for information.

Subcourses in INFN70, Informatics: Information Systems Security

Applies from V22

- 2201 Research Paper, 4,0 hp
Grading scale: Fail, E, D, C, B, A
Individual exam
- 2202 Group Assignments, 3,0 hp
Grading scale: Fail, E, D, C, B, A
Group assignments
- 2203 Seminar, 0,5 hp
Grading scale: Fail, Pass
Individual exam