



Faculty of Economic Sciences, Communication and IT
Computer Science

Syllabus

Course Approval

The syllabus was approved by the Faculty Board of Economic Sciences, Communication and IT on 25 March 2010, and is valid from the Autumn semester of 2010 at Karlstad University.

Course Code: DVGC20

Computer Security II, 7.5 ECTS Credits
(Datasäkerhet II, 7.5 Swedish credit points)

Degree Level: Bachelor

Progressive Specialisation: G2F (First cycle, has at least 60 credits in first-cycle course/s as entry requirements)

Language of Instruction

English or Swedish: Contact the course coordinator for information about the current Language.

Prerequisites

Computer Science 60 ECTS and Computer Security 7.5 ECTS cr

Major Field of Study

DVA (Computer Science)

Learning Outcomes

Upon completion of the course, students should be able to:

- describe a selection of methods for assessing security problems at different levels,
- give an account of and apply the principles of secure software development,
- decide on the best security mechanisms to implement for a given scenario,
- analyse points of vulnerability in linked computer systems and identify threats to network-based applications,
- give an account of security problems related to database applications,
- give an account of the most common authentication protocols and the security and integrity problems involved in identity management systems,
- use cryptographic methods to develop safe applications,
- give an account of and apply mechanisms to protect personal integrity in network-based services and applications,
- present orally and in writing the results of assignments and exercises.

Content and Form of Instruction

This is a continuation course in the IT security area consisting of four parts. Part one introduces secure software development. Part two focuses on computer security and covers areas such as database security, identity management systems, authentication protocol and models of access control. Also included is a cryptography specialization. Part three treats personal integrity and introduces integrity enhancing mechanisms for networks and computer systems. Part four deals with security management and includes methods of security evaluation such as common criteria and vulnerability analysis.

Instruction is in the form of lectures, exercises and laboratory work. Students study individually with the support of study guides and supplementary material.

Reading List

See separate document.

Examination

Examination is in the form of laboratory reports, hand-in assignments and a written exam.

Grades

One of the grades 5 (Pass with Distinction), 4 (Pass with Some Distinction), 3 (Pass), or U (Fail) is awarded in the examination of the course.

Quality Assurance

Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course assessment is based on student views and experiences as reported in written course evaluations and/or group discussions. Students will be informed of the result of the evaluation and of the measures to be taken.

Course Certificate

A course certificate will be provided upon request.

Additional Information

Students who enrolled before 1 July 2007 will complete their studies in accordance with the requirements of the earlier admission. Upon completion students may request degree and course certificates to be issued under the current ordinance if they meet its requirements.

The local regulations for studies at the Bachelor's and Master's levels at Karlstad University stipulate the obligations and rights of students and staff.

Karlstads universitet 651 88 Karlstad, Sweden
Tel +46-54-700 10 00 Fax +46-54-700 14 60
information@kau.se www.kau.se