



Faculty of Health, Science and Technology  
Computer Science

# Syllabus

## Computer Security II

<b>Course Code:</b>	DVGC20
<b>Course Title:</b>	Computer Security II <i>Datasäkerhet II</i>
<b>Credits:</b>	7.5
<b>Degree Level:</b>	Undergraduate level
<b>Progressive Specialisation:</b>	First cycle, has at least 60 credits in first-cycle course/s as entry requirements (G2F)

**Major Field of Study:**  
DVA (Computer Science)

### Course Approval

The syllabus was approved by the Faculty of Health, Science and Technology 2019-02-27, and is valid from the Autumn semester 2019 at Karlstad University.

### Prerequisites

45 ECTS credits in Computer Science and registered on Computer Security I (7.5 ECTS credits), or equivalent

### Learning Outcomes

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

- describe a selection of methods for assessing personal integrity and security at different levels,
- 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,
- give an account of and apply mechanisms to protect personal integrity in network-based services and applications,

- give an account of and apply the principles of secure software development,
- use cryptographic methods to develop safe applications,
- 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, and
- give an account of the results of completed tasks, orally and in writing.

### **Content**

This a continuation course in the IT security area consisting of four parts.

Part one offers in-depth study of cyber security and covers for instance database security, authentication protocol, models of access control, and identity management systems. Part two treats personal integrity and introduces integrity-enhancing mechanisms for networks and computer systems. Part three introduces secure software development and web security. Part four deals with security management and includes methods of security evaluation such as vulnerability analysis.

Instruction is primarily in the form of lectures, exercises, and laboratory work. The course content is conveyed through literature with related reading assignments and additional materials.

### **Reading List**

See separate document.

### **Examination**

Assessment is based on a written exam and laboratory reports.

If students have a decision from Karlstad University entitling them to special pedagogical support due to a documented disability, the examiner has the right to give such students an adapted examination or to examine them in a different manner.

### **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 evaluation is partly based on student views and experiences obtained in accordance with current regulations and partly on other data and documentation. Students will be informed of the result of the evaluation and of any measures to be taken.

### **Course Certificate**

A course certificate will be provided upon request.

### **Additional information**

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