



Faculty of Health, Science and Technology  
Computer Science

# Syllabus

## Ethical hacking

**Course Code:**

DVAD25

**Course Title:**

Ethical hacking  
*Etiskt hackning*

**Credits:**

7.5

**Degree Level:**

Master's level

**Progressive  
Specialisation:**

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

**Major Field of Study:**

DVA (Computer Science)

### Course Approval

The syllabus was approved by the Faculty of Health, Science and Technology 2022-09-09, and is valid from the Spring semester 2023 at Karlstad University.

### Prerequisites

Computer Security I, 7.5 ECTS credits, Computer Networking I, 7.5 ECTS credits, and Operating Systems, 7.5 ECTS credits, plus upper secondary level English 6, or equivalent

### Learning Outcomes

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

- explain responsible reporting of vulnerabilities,
- use tools for penetration testing,
- examine and identify evidence of attacks on log data,
- analyse how tools for penetration testing work,
- reflect upon and evaluate countermeasures used in case of attacks,
- apply and reflect upon good operational security practices,
- evaluate the ethical (societal) aspects of using hacking techniques and tools, 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 parallel parts:

- (1) Lectures and group discussions on ethical hacking, with a focus on the main aspects of normative ethics and especially the ethical problems of hacking (applied ethics), based on real and hypothetical cases.
- (2) Lectures on the strategies, techniques, and tools of hacking.
- (3) Practical hacking exercises based on online challenges in the form of "Capture the flag" and how to report security problems.
- (4) How to identify evidence of attacks and respond accordingly.

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 presentation of individual assignments and laboratory reports, as well as active participation in group discussions.

If students have a decision from Karlstad University entitling them to Targeted Study 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.