



# EP2510 Advanced Networked Systems Security 7.5 credits

Säkra nätverkssystem, fortsättningskurs

This is a translation of the Swedish, legally binding, course syllabus.

## Establishment

This official course syllabus is valid from the autumn semester 2025 in accordance with decision by the director of first and second cycle education: HS-2025-0633. Date of decision: 2025-03-31

## Grading scale

A, B, C, D, E, FX, F

## Education cycle

Second cycle

## Main field of study

Information and Communication Technology, Computer Science and Engineering

## Specific prerequisites

Knowledge of secure network systems, 7.5 credits, equivalent to completed course EP2500 or EP2520

or both of the following:

- knowledge of computer networks, 6 credits, equivalent to completed course EP1100/IK1203/IK2218/EP2120

- knowledge of cybersecurity, 6 credits, equivalent to completed course IV1013/IK2206/DD2395/DD2391

## Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

## Intended learning outcomes

Having passed the course, the student should be able to:

- analyse and identify vulnerabilities, threats and attacks against a number of modern or new network systems
- define properties and requirements of security solutions for network systems exactly
- design and analyse security protocols, mechanisms, and architectures that protect the network operation against attacks
- analyse general security mechanisms qualitatively and quantitatively
- identify, analyse and apply best practice for security systems that are currently used or currently being developed towards standardisation of network systems

in order to

- improve and increase his deep understanding of basic concepts and technologies related to the security of modern network systems
- strengthen the ability to handle open, real technical problems
- prepare for independent projects in related subjects

## Course contents

The course covers security including integrity for a spectrum of network systems that includes:

- Internet and TCP/IP networks,
- Mobile voice and data networks,
- wireless local and personal networks,
- Wireless sensor networks,
- mobile ad hoc and hybrid networks, such as vehicle communication systems

The emphasis of the course is to strengthen the student's understanding of concept and technology, joint security requirements for different systems, how functions in each system determines the latest security solutions and how design decisions should be grasped for efficient security solutions.

## Examination

- INL1 - Assignment, 3.0 credits, grading scale: P, F
- PRO1 - Project, 4.5 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

## Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.