



# FEP3200 Säkra nätverkssystem

## 8,0 hp

Networked Systems Security

När kurs inte längre ges har student möjlighet att examineras under ytterligare två läsår.

### Fastställande

Kursplan för FEP3200 gäller från och med VT12

### Betygsskala

### Utbildningsnivå

Forskarnivå

### Särskild behörighet

### Undervisningsspråk

Undervisningsspråk anges i kurstillfällesinformationen i kurs- och programkatalogen.

### Lärandemål

At the end of the course, students shall be able to:

- (i) Identify, comprehend, and analyze vulnerabilities, threats, and attacks against a variety of modern networked systems.
- (ii) State clearly security properties and requirements for networked systems security solutions.

- (iii) Analyze and design security protocols and mechanisms that safeguard the network operation against attacks.
- (iv) Comprehend and analyze qualitatively and quantitatively the overhead of security mechanisms.
- (v) Identify and analyze best practices for security schemes deployed widely in networked systems.

## Kursinnehåll

The course will work on security, including privacy, for a spectrum of networked systems, covering: (i) Internet and TCP/IP networks, (ii) Cellular data and voice networks, (iii) wireless local and personal area networks, (iv) Internet of Things and embedded systems, (v) Wireless Sensor Networks, (vi) Mobile ad hoc and hybrid networks, such as vehicular communication systems. While the first three types of networked systems have been the predominant ones, and shall get significant attention, the course shall strive to keep a balance and present upcoming technologies. The emphasis, throughout the course, shall be on basic concepts and technologies, on common security requirements across various systems, and on how features of each system determine the state-of-the-art of security solutions.

NSS sets the ground for its companion courses, “Advanced Networked Systems Security” and “Building Networked Systems Security.” The latter ones will offer the opportunity to deal with security and privacy problems in a deeper and entirely hands-on manner.

## Kursupplägg

The course is structured around weekly lectures, a set of assignments that are mandatory and graded, and two in-class written exams, one mid-term and one at the end of the quarter. The assignments are distributed throughout the course period. Students are supported via extensive office hours, held by the instructor and the teaching assistants throughout the course. All material and instruction shall be in English.

## Kurslitteratur

List of textbooks recommended (see Kurs-PM), choice of purchase left at the students. Short list of additional articles/technical reports.

## Examination

Examinator beslutar, baserat på rekommendation från KTH:s handläggare av stöd till studenter med funktionsnedsättning, om eventuell anpassad examination för studenter med dokumenterad, varaktig funktionsnedsättning.

Examinator får medge annan examinationsform vid omexamination av enstaka studenter.

## Övriga krav för slutbetyg

Assignments and exams will be graded and they are all mandatory for successfully completing the course and they are all part of the calculation of the final grade. Each component (exam and assignment) will be graded independently. The exams shall be 25% and 30% of the total grade respectively, and the assignments shall weigh the remaining 45%. Final grades: they are in the letter scale, A-F for MSc students; pass/fail for PhD students.

## Etiskt förhållningssätt

- Vid grupparbete har alla i gruppen ansvar för gruppens arbete.
- Vid examination ska varje student ärligt redovisa hjälp som erhållits och källor som använts.
- Vid muntlig examination ska varje student kunna redogöra för hela uppgiften och hela lösningen.