

### Cyber Security Basics

#### Mandatory Modules (22 ECTS credit points)

- [11889](#) Introduction to Cyber Security 8 CP
- [11859](#) Cryptography 8 CP
- [11891](#) IT Security Law 6 CP

### Cyber Security Methods

#### Compulsory Elective Modules (28–32 ECTS credit points)

- [11862](#) Pervasive System Security 6 CP
- [11863](#) Hands on Knowledge for Side Channel Attacks 6 CP
- [11892](#) Software Security 6 CP
- [11897](#) Security of Resource-constraint Systems 6 CP
- [11898](#) Cyber Security Lab (e.g. Ethical Hacking) 6 CP
- [11899](#) Cyber Security Application Areas 6 CP
- [12790](#) Seminar Advanced Topics in Network and System Security 6 CP
- [12973](#) Network and System Security 6 CP
- [12979](#) Internet Measurements and Forensics 6 CP
- [13490](#) Secure Cyber-Physical Systems 6 CP
- [14035](#) Application of Side-Channel Analysis Methods in the Earlier Design Phase of Cryptographic Implementations 6 CP

### Computer Science

#### Compulsory Elective Modules (12–16 ECTS credit points)

- [11847](#) Neural Networks and Learning Theory 8 CP
- [11860](#) Distributed and Parallel Systems II (Concurrency, Replication and Consistency) 6 CP
- [11861](#) Operating Systems II (Multi-Level Memory Management) 6 CP
- [11864](#) Wireless Sensor Networks: Concepts, Protocols and Applications 6 CP
- [11881](#) Foundations of Data Mining 6 CP
- [11882](#) Software Project Management 8 CP
- [11886](#) Dependability and Fault Tolerance 6 CP
- [12882](#) Embedded Real-Time Systems 6 CP
- [12975](#) Internet – Functionality, Protocols, Applications 6 CP
- [12976](#) Processor Architecture 8 CP
- [12979](#) Internet Measurements and Forensics 6 CP
- [13513](#) Communication Networks / Security Research Class 6 CP
- [13690](#) Hands on Wireless Sensor Network Applications 6 CP
- [14021](#) Explainable Machine Learning 6 CP

Modules for Specialisation

(44 ECTS credit points\*)

### Study Project

[11894](#) (8 ECTS credit points)  
e.g. Adversarial Machine Learning

### General Studies (»FÜS«)

to be selected from the General Studies list  
(6 ECTS credit points)

### Internship

[14144](#) (10 ECTS credit points)

### Master Thesis

[11888](#) (30 ECTS credit points)

Five-digit codes: module numbers with direkt links to the respective module description

\*Ungraded Modules are only eligible for a maximum of overall 12 ECTS credit points in »Modules for Specialisation«