# Cyber Security Basics

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

- **11889** Introduction into Cyber Security 8 CP
- **11859** Cryptography 8 CP
- **11891** IT Security Law 6 CP

# Cyber Security Methods

**Compulsory Elective Modules (28–34 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

# Computer Science

**Compulsory Elective Modules (12–18 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
- **11884** Introduction into Concurrency 8 CP
- **11885** Software Testing 8 CP
- **11886** Dependability and Fault Tolerance 6 CP
- **11887** Software Dependability 8 CP
- **12316** Specification Languages and Processing Techniques for Web Documents 6 CP
- **12431** Designing and Implementing Web Applications 6 CP
- **12448** Web-Technologies Lab 4 CP
- **12464** Modeling and Simulation of Discrete Systems 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

# Modules for Specialisation

**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**

**11893** (8 ECTS credit points)

**Master Thesis**

**11888** (30 ECTS credit points)