Master of Science in
CYBER SECURITY
Joint master EPF Lausanne - ETH Zürich

2-year program - 120ECTS

Master's thesis
30 ECTS

Breadth requirements,
depth courses
and options
72 ECTS

Project in
social and
human
sciences
6 ECTS

Research
project
12 ECTS
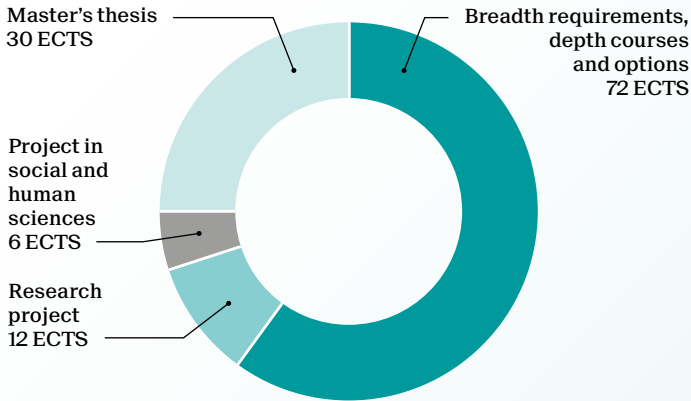
Breadth requirement (min. 32 credits)	Credits
Algorithms II	8
Advanced computer architecture	8
Advanced topics on privacy enhancing technologies	8
Cryptography and security	8
Decentralized systems engineering	8
Distributed algorithms	8
Information security and privacy	8
Machine learning	8
Systems for data management and data science	8
TCP/IP networking	8
ETHZ courses counting as breadth requirement	

The program includes a compulsory internship of eight weeks during the summer, or six months during the semester. The internship can also be combined with the master's thesis.

Students are required to spend at least one semester at ETH Zürich where they will take classes counting as breadth and depth courses. Upon graduating, they receive a joint Master of Science from both EPFL and ETHZ.

Career Prospects

The internship portal, with more than 3000 active contacts, is a very effective way to promote internships and master projects. The EPFL Innovation Park, a few steps away from the campus, also hosts many R&D laboratories such as Nagravision SA, Armasuisse and Elca Informatique SA wich hire a large number of Cyber Security students for internships or master's projects and also collaborate with researchers from the IC School.

The EPFL Innovation Park is the springboard for numerous start-ups, most of which have emerged from the IC School.

It only takes on average 7 weeks to find one's first job. Moreover, many Cyber Security graduates receive a job offer during the last semester of their training. Companies such as Oracle, Google, Meta, or Microsoft, recruit directly on campus by participating in various events.

**School of Computer and Communication Sciences
go.epfl.ch/master-cyber-security
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Depth courses and options	Credits
Advanced compiler construction	6
Advanced computer graphics	6
Advanced cryptography	6
Advanced multiprocessor architecture	6
Advanced probability and applications	8
AI product management	6
Applied biomedical signal processing	4
Applied biostatistics	5
Applied data analysis	8
Artificial neural networks/reinforcement learning	6
Automatic speech processing	3
Basics of mobile robotics	4
Causal inference	4
Causal thinking	5
Cellular biology and biochemistry for engineers	4
Computational complexity	6
Computational neuroscience: neural dynamics	5
Computational photography	6
Computer vision	6
Concurrent computing	6
Data visualization	6
Deep learning	4
Design technologies for integrated systems	6
Digital education	6
Distributed information systems	6
Distributed intelligent systems	5
Dynamical system theory for engineers	6
Embedded systems design	6
Ethics and law of AI	4
Experience design	6
Formal verification	6
Foundations of data science	8
Foundations of probabilistic proofs	6
Foundations of software	6
Gödel and recursivity	5
Image processing I, II	6
Industrial automation	3
Information theory and coding	8
Intelligent agents	6
Interaction design	6
Introduction to IT consulting	6
Introduction to natural language processing	6
Learning theory	6
Machine learning for behavioral data	6
Management de projet et analyse du risque	4
Markov chains and algorithmic applications	6
Mathematical foundations of signal processing	6
Mobile networks	8
Modern digital communications: a hands-on approach	8
Networks out of control	6
Number theory in cryptography	5
Optimization for machine learning	8
Optional research project in computer science	8
Principles of computer systems	8
Social media	2
Software security	6
Statistical physics of computation	4
Statistical signal and data processing through applications	8
Student seminar: security protocols and applications	3
Sublinear algorithms for big data analysis	6
System programming for Systems-on-Chip	6
Topics in software security	3
Topics in theoretical computer science	6
Virtual reality	6
ETHZ courses counting as depth courses	
ETHZ courses counting as options	