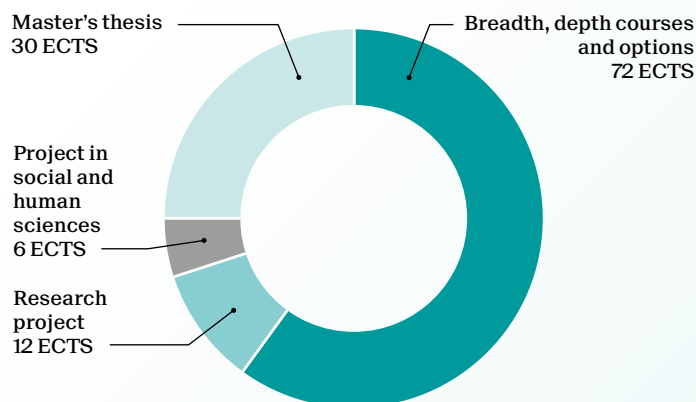


Master of Science in CYBER SECURITY

Joint master EPF Lausanne - ETH Zürich

2-year program - 120ECTS



	Depth	Credits
Breadth and depth courses (min. 32 credits)		
Advanced computer architecture		8
Advanced networks		8
Advanced topics on privacy enhancing technologies	●	8
Algorithms II		8
Cryptography and security	●	8
Decentralized systems engineering	●	8
Distributed algorithms		8
Information security and privacy	●	8
Interactive theorem proving	●	8
Machine learning		8
Software security	●	8
Systems for data management and data science		8

ETHZ courses counting as breadth requirement

A minimum of 30 credits in Depth courses is required.

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 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. All the big companies are listed, but not only. There are many SMEs and start-ups too. The EPFL Innovation Park, a few steps away from the campus, hosts many R&D laboratories such as Cisco, Logitech, or Swisscom. These companies hire a large number of Computer Science students for internships or master's projects and also collaborate with researchers from the IC School.

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

	Depth	Credits
Depth courses and options		
Advanced compiler construction		6
Advanced computer graphics		8
Advanced cryptography	●	6
Advanced multiprocessor architecture		8
Advanced operating systems		6
Advanced probability and applications		8
AI product management		6
Applied biomedical signal processing		4
Applied biostatistics		5
Applied data analysis		8
Automatic speech processing		4
Basics of mobile robotics		4
Causal inference		4
Causal thinking		5
Computational complexity		6
Computational neuroscience: neuronal dynamics		5
Computer vision		6
Concurrent computing		6
Data visualization		6
Deep learning		4
Deep reinforcement learning		6
Design technologies for integrated systems		6
Digital education		6
Distributed information systems		6
Dynamical system theory for engineers		6
Embedded systems design		6
Ethics and law of AI		4
Experience design		6
Formal verification	●	8
Foundation models and generative AI		6
Foundations of data science		8
Foundations of probabilistic proofs	●	6
Gödel and recursivity		5
Image processing I		3
Image processing II		3
Industrial automation		3
Information theory and coding		8
Interaction design		6
Introduction to IT consulting		6
Introduction to natural language processing		6
Introduction to quantum cryptography	●	6
Learning in neural networks		6
Learning theory		6
Machine learning for behavioral data		6
Management de projet et analyse du risque		4
Markov chains and algorithmic applications		6
Mobile networks		8
Modern digital communications: a hands-on approach		8
Network machine learning		4
Networks out of control		6
Number theory II.d - Cryptography	●	5
Optimization for machine learning		8
Optional research project in computer science		8
Principles of computer systems		8
Secure hardware design	●	6
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

ETHZ courses counting as depth courses

ETHZ courses counting as options

School of Computer and Communication Sciences

go.epfl.ch/master-cyber-security

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