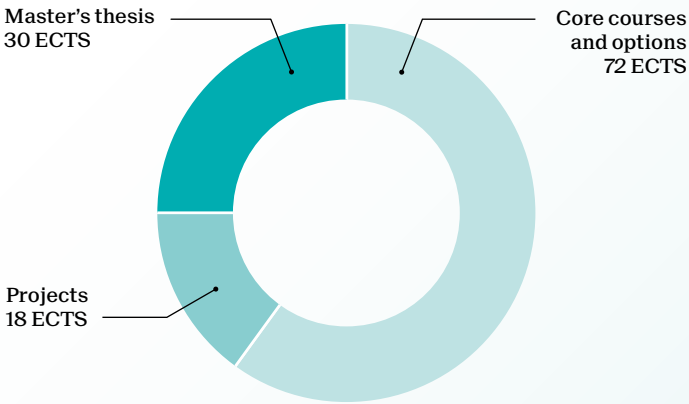


# Master of Science in COMPUTER SCIENCE

2-year program - 120 ECTS



The program includes a compulsory 8-week to 6-month internship, which can be combined with the Master's thesis.

Students may choose a 30 ECTS Specialization in:

- A Computer Engineering
- B Data Analytics
- C Foundations of Software
- D Cyber Security
- E Networking and Mobility
- F Signals, Images, and Interfaces
- G Software Systems
- H Wireless Communication
- I Computer Science Theory
- J Internet Information Systems

Or a 30 ECTS Minor in:

- Biocomputing
- Biomedical Technologies
- Computational Science and Engineering
- Management, Technology and Entrepreneurship
- Space Technologies

Other Minors may be possible, in agreement with the programs' directors.

## Career prospects

The EPFL Innovation Park, literally two steps away, is home to numerous R&D laboratories from international companies such as Cisco, Logitech, Credit Suisse or Nitto Denko. Such companies closely collaborate with the researchers from the School of Computer and Communication Sciences IC. The EPFL Innovation Park is the springboard for plenty of start-ups, most of them stemming from the IC School.

It only takes an average of 10 weeks to find one's first job in the field of Information and Communication Technologies (ICT). Moreover, many graduates in the ICT field receive a job offer during the last semester of their training. Companies like Facebook, Google and Microsoft have even begun recruiting directly on campus.

School of Computer and Communication Sciences  
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	Specialization										Credits
	A	B	C	D	E	F	G	H	I	J	
<b>Core courses (min. 30 credits)</b>											
Advanced algorithms		B	C	D	E				I		7
Advanced computer architecture	A			D			G				4
Computer vision						F					4
Cryptography and security				D	E					J	7
Database Systems		B	C				G			J	7
Decentralized systems engineering							G				6
Distributed algorithms			C				G		I	J	4
Foundations of software			C				G				4
Information security and privacy		B		D	E		G				6
Machine learning		B				F			I	J	7
TCP/IP networking				D	E		G	H			5
<b>Options</b>											
Advanced compiler construction	A		C				G				4
Advanced computer graphics						F					6
Advanced multiprocessor architecture	A						G				6
Advanced probability and applications								H	I		6
Advanced topics on privacy enhancing technologies				D							7
Algebraic curves in cryptography				D							5
Analytic algorithms		B							I		4
Applied biostatistics											5
Applied data analysis		B									6
Artificial neural networks											4
Audio and acoustic signal processing						F					5
Automatic speech processing						F					3
Biological modeling of neural networks											4
Biomedical signal processing						F					6
Business design for IT services											3
Cellular biology and biochemistry for engineers											4
Computational complexity		B							I		4
Computational photography						F					5
Concurrent algorithms			C		E		G		I		4
Convex optimization and applications								H			4
Data visualization		B									4
Design technologies for integrated systems	A										6
Digital 3D Geometry Processing						F					5
Digital education & learning analytics											4
Distributed information systems		B			E					J	4
Distributed intelligent systems	A										5
Dynamical system theory for engineers											4
Embedded systems	A										4
Enterprise and service-oriented architecture										J	6
Experience design						F					6
Foundations and tools for processing tree structured data											4
Gödel and recursivity									I		5
Human-computer interaction										J	4
Image and video processing						F					6
Image processing I, II						F					6
Industrial automation											3
Information theory and coding		B						H	I		4
Intelligent agents										J	6
Introduction to natural language processing		B								J	4
Learning theory											4
Markov chains and algorithmic applications		B							I		4
Mathematical foundations of signal processing						F					6
Mobile networks				D	E		G	H			4
Modern digital communications: a hands-on approach					E	F		H			6
Networks out of control		B			E			H		J	4
Number theory in cryptography				D							5
Optimization for machine learning											4
Optional project in computer science											8
Performance evaluation		B	C		E		G			J	7
Principles of computer systems	A		C				G				7
Probabilistic method									I		5
Real-time embedded systems	A										4
Real-time networks					E						3
Sensors in medical instrumentation						F					3
Set theory											5
Smart grid technologies											5
Social media										J	2
Statistical signal and data processing through applications		B				F		H			5
Sublinear algorithms for big data analysis											4
Technology ventures in IC											4
Topics in theoretical computer science									I		4
Virtual reality						F					4
<b>Projects</b>											<b>18</b>
Project in computer science II											12
Project in human and social sciences											6