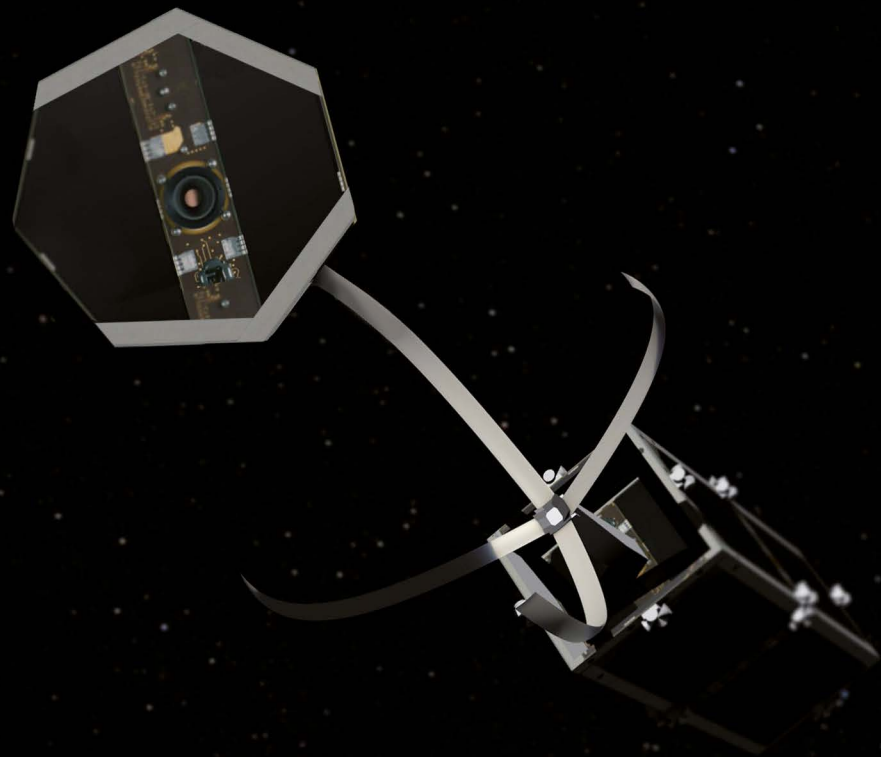


# MICROENGINEERING

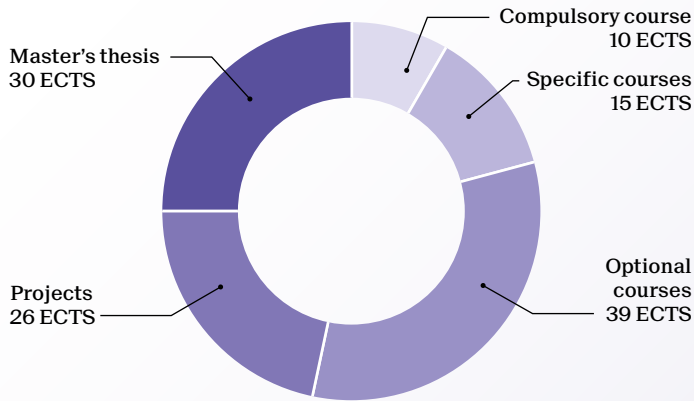
MASTER



**EPFL**

# Master of Science in MICROENGINEERING

2-year program - 120 ECTS



including an 8-week internship in industry

Possibility to follow a 30 ECTS Minor within the optional courses:

- Biomedical Technologies
- Computational Science & Engineering
- Energy
- Internet of Things
- Management, Technology and Entrepreneurship
- Photonics
- Science, Technology and Area Studies
- Space Technologies

	Credits
<b>Compulsory course</b>	<b>10</b>
Products design & systems engineering	10

<b>Specific courses</b>	<b>15</b>
Advanced MEMS and microsystems	3
Applied machine learning	4
Imaging optics	3
Introduction to additive manufacturing	3
Introduction to machine learning	4
Laser fundamentals and applications for engineers	3
Low-power radio design for IoT	3
Manufacturing systems and supply chain dynamics	3
Materials and technology of microfabrication	3
Metrology	3
Nanotechnology	3
Optical Detectors	3
Robotique industrielle et appliquée	2
Scaling laws & simulations in micro & nanosystems	4
Selected topics in advanced optics	3
Smart sensors for IoT	4

<b>Optional courses</b>	<b>39</b>
Advanced control systems	3
Advanced additive manufacturing technologies	3
Advanced machine learning	4
Advanced satellite positioning	4
Analyse de produits et systèmes	2
A network tour of data science	4
Audio	3
Basics of mobile robotics	4
Biomedical optics	3
BioMEMS	2
Biomicroscopy I, II	7
Circuits intégrés I	3
Commande embarquée de moteurs	2
Commande non linéaire	3
Computational motor control	4
Computer-aided engineering	5
Distributed intelligent systems	5
Embedded systems	4
Flexible bioelectronics	3
Fundamentals and processes for photovoltaic devices	3
Fundamentals of biophotonics	3
Fundamentals of computer aided manufacturing	5
Haptic human robot interfaces	3
Image processing I, II	6
Lab on app development for tablets and smartphones	4
Large-area electronics: devices and materials	3
Laser microprocessing	2
Lasers: theory and modern applications	4
Legged robots	4
Machine learning programming	2
Management de projet et analyse du risque	4
MEMS practicals I, II	4
Micro/Nanomechanical devices	4
Model predictive control	3
Nanobiotechnology and biophysics	3
Nonlinear optics	3
Optical communications	3
Optics laboratories I, II	6
Organic and printed electronics	2
Photonic micro- and nanosystems	2
Photonic systems and technology	4
Physics of photonic semiconductor devices	4
Sensors in medical instrumentation	3
Signal processing for functional brain imaging	3
Space mission design and operations	2
System identification	3
Techniques d'assemblage	3
Transducteurs et entraînements intégrés	3

<b>Projects</b>	<b>26</b>
Projet microtechnique I, II	20
Project in human and social sciences	6

School of Engineering  
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