## Master of Science in Energy Science and Technology

### 2-year program - 120 ECTS

### Common core courses
- Convex optimization and applications: 4 ECTS
- Electrochemical engineering: 3 ECTS
- Energy conversion and renewable energy: 3 ECTS
- Energy supply, economics and transition: 2 ECTS
- Fundamentals & processes for photovoltaic devices: 3 ECTS
- Hydraulic turbomachines: 4 ECTS
- Thermal power cycles and heat pump systems: 3 ECTS

### Complement

#### Additional mandatory courses for EE:
- Heat and mass transfer: 4 ECTS
- Life cycle assessment in energy systems: 3 ECTS

#### Additional mandatory courses for ME:
- Fundamentals of electrical circuits and systems: 4 ECTS
- Principles of power systems: 2 ECTS
- Semiconductor devices I: 4 ECTS

#### Additional mandatory courses for other students:
- Fundamentals of electrical circuits and systems: 4 ECTS
- Heat and mass transfer: 4 ECTS
- Life cycle assessment in energy systems: 3 ECTS
- Principles of power systems: 2 ECTS
- Semiconductor devices I: 4 ECTS

### Orientation courses
- Advanced control systems: 3 ECTS
- Advanced energetics: 5 ECTS
- Bioclimatic buildings and districts: 2 ECTS
- Building energetics: 3 ECTS
- Model predictive control: 3 ECTS
- Modelling and optimization of energy systems: 4 ECTS
- Planification intérieure des infrastructures d'énergie: 3 ECTS
- Power systems dynamics: 3 ECTS
- Renewable energy (for ME): 4 ECTS
- Smart grids technologies: 5 ECTS

### Options
- Optional courses: 9 ECTS
- Project in energy II: 9 ECTS

### Projects
- Project in energy: 16 ECTS
- Project in human and social sciences: 6 ECTS

### Entry Requirements

Candidates should have a Bachelor's degree from a reputable university and excellent academic results. The strong interdisciplinary character of the Master in Energy Science and Technology is reflected in the fact that the program is open to a wide range of Bachelor's degree holders in applied sciences and engineering, including but not limited to electrical, mechanical and environmental sciences and engineering.

School of Engineering
[go.epfl.ch/master-energy-science-technology](http://go.epfl.ch/master-energy-science-technology)
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### Industrial internship

The program includes a minimum 8-week long compulsory internship.

A longer internship may be done instead of a specialization or in combination with the Master's thesis.