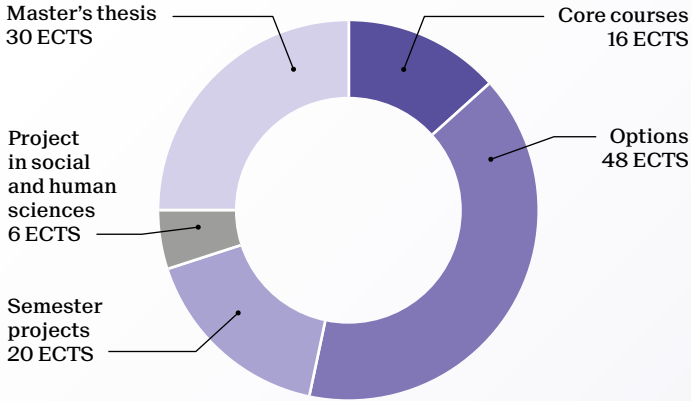


# Master of Science in MATERIALS SCIENCE AND ENGINEERING

2-year program - 120 ECTS



### Specialization:

Students may validate the “Materials research and development” specialization by choosing 30 ECTS in the optional courses group

Or opt for a 30 ECTS minor included in the 48 ECTS optional courses. Minors recommended with this Master:

- Biomedical technologies
- Computational science and engineering
- Energy
- Engineering for sustainability
- Management, technology and entrepreneurship
- Mechanical engineering
- Space technologies

### Industrial internship

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

## Career prospects

A Master's degree in materials science and engineering is the gateway to careers in a wide variety of industries ranging from the production of materials to the manufacturing of finished products such as watches, sports equipment, aeronautic, foods, metallurgy, automobiles, electronics, and multimedia. It also provides an ideal training for the innovative application of advanced materials in areas such as bio- and nanotechnology as well as a strong basis for those who wish to pursue a PhD degree in Materials Science or a related field.

### School of Engineering

[go.epfl.ch/master-materials-science-engineering](http://go.epfl.ch/master-materials-science-engineering)  
contact: [homeira.sunderland@epfl.ch](mailto:homeira.sunderland@epfl.ch)

	Credits
<b>Core courses in materials science</b>	<b>16</b>
Advanced metallurgy	4
Fracture of materials	4
Fundamentals of solid-state materials	4
Soft matter	4
Statistical mechanics	4

<b>Options</b>	<b>48</b>
Assembly techniques	2
Atomistic and quantum simulations of materials	4
Biomaterials	4
Cementitious materials (advanced)	2
Composites technology	3
Electrochemistry for materials technology	2
Electron microscopy: advanced methods	3
Introduction to crystal growth by epitaxy	2
Introduction to magnetic materials in modern technologies	4
Life cycle engineering of polymers	2
Light, liquids and interfaces	4
Material science at large scale facilities	4
Materials selection	2
Mathematical methods for materials science	3
Nanomaterials	3
Organic electronic materials	4
Optical properties of materials	3
Physical chemistry of polymeric materials	3
Polymer chemistry and macromolecular engineering	3
Polymer morphological characterization techniques	2
Properties of semiconductors and related nanostructures	5
Recycling of materials	2
Research project in materials III	10
Seminar series on advances in materials	2
Surface analysis	3
Thin film fabrication technologies	2
Tribology	2
Wood structures, properties and uses	2