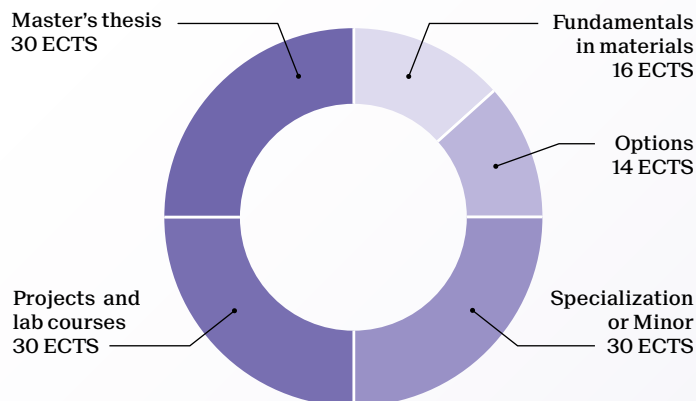


Master of Science in MATERIALS SCIENCE AND ENGINEERING

2-year program - 120 ECTS



Possible Specializations in materials

- A Transformation of materials and production processes
- B Structural materials for use in transport, energy and infrastructure
- C Materials for microelectronics and microengineering
- D Materials for biotechnological and medical applications

Possible Minor programmes (30ECTS)

- Biomedical Technologies
- Computational Science & Engineering
- Energy
- Management, Technology and Entrepreneurship
- Mechanical engineering
- Science, Technology and Area Studies
- Space Technologies

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
master.epfl.ch/materials
contact: homeira.sunderland@epfl.ch

					Credits
Fundamentals in materials					16
Advanced metallurgy					4
Fracture of materials					4
Fundamentals of solid-state materials					4
Soft matter					4
Statistical mechanics					4

	Specialization				Credits
Options / Courses for Specialization	A	B	C	D	14/30
Advanced nanomaterials	A		C	D	2
Assembly techniques	A	B			2
Atomistic and quantum simulations of materials	A	B	C	D	4
Biomaterials				D	2
Cementitious materials (advanced)		B			2
Composites technology		B		D	3
Dielectric properties of materials			C		2
Electrochemistry for materials technology		B	C		2
Electron microscopy: advanced methods	A	B	C	D	3
Introduction to crystal growth by epitaxy	A		C		2
Introduction to magnetic materials in modern technologies	A		C		4
Life cycle engineering of polymers	A			D	2
Materials selection	A	B			2
Matériaux pierreux et conservation du patrimoine bâti		B			2
Micro and nanostructuration of materials	A		C		2
Modelling problem solving, computing and visualisation I	A	B	C	D	1
Modelling problem solving, computing and visualisation II	A	B	C	D	4
Organic electronic materials - synthesis, applications, properties	A		C		3
Organic semiconductors			C		3
Physical chemistry of polymeric materials	A	B	C	D	3
Polymer morphological characterization techniques		B		D	2
Polymer physical chemistry and materials properties	A	B	C	D	3
Powder technology	A	B			2
Properties of semiconductors and related nanostructures			C		4
Recycling of materials	A	B			2
Seminar series on advances in materials	A	B	C	D	2
Specialisation project in materials	A	B	C	D	10
Surface analysis			C	D	3
Thin film fabrication processes	A		C	D	2
Tribology		B		D	2
Wood structures, properties and uses		B			2
Courses in other programmes according to list of recommended courses					max. 6

Projects and lab courses					30
Research project in materials I, II					20
Metrology I,II					4
Project in human and social sciences					6

Courses in other programmes according to list of recommended courses