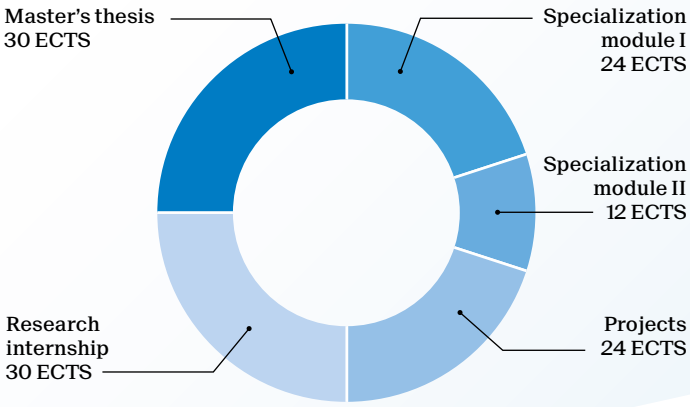
ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

Master of Science in

MOLECULAR & BIOLOGICAL CHEMISTRY

2-year program - 120 ECTS



Students must choose 3 modules in Specialization modules I and 12 ECTS in Specialization modules II.

Students can opt for a 30 ECTS Minor instead of the research internship preferably in:

- Management, Technology and Entrepreneurship
- Science, Technology and Area Studies

	Credits
Specialization modules I	**24**
Bioanalytical chemistry	
Bioanalytics and analytical sensors	3
Mass spectrometry	3
Methodology in instrumental chromatography	2
Biological chemistry & biophysics	
Cellular signalling	2
Chemical biology	3
Nanobiotechnology and biophysics	3
Computational chemistry	
Applied molecular quantum chemistry	4
Computational methods in molecular quantum mechanics	4
Inorganic chemistry	
Catalysis for energy production	2
Catalyst design for synthesis	3
Inorganic reactivity	3
Organic chemistry	
Physical and computational organic chemistry	2
Structure and reactivity	3
Total synthesis of natural products	3
Physical chemistry	
Advanced NMR and imaging	3
Electronic spectroscopy	3
Photochemistry II	2
Specialization modules II	**12**
Risk management	2
Molecular and supramolecular science	
Artificial photosynthesis	2
Catalytic asymmetric reactions in organic chemistry	2
Chemistry of small biological molecules	2
Coordination chemistry and reactivity of f elements	
Pharmacological chemistry	2
Supramolecular chemistry	2
Physical and analytical chemistry	
Laboratory information management system (LIMS)	2
Molecular quantum dynamics	2
Photomedicine	2
Material science	
Advanced materials for photovoltaics and lighting	2
Analysis of ancient materials and their degradation	2
Introduction to nanomaterials	2
Organic electronic materials	3
Physical chemistry of polymeric materials	3
Polymer chemistry and macromolecular engineering	3
Food science	
Chimie des denrées alimentaires	2
Chemistry of food processes	2
Projects	**24**
Interdisciplinary / disciplinary project	6
Project in molecular sciences	12
Project in human and social sciences	6
Research internship	**30**

School of Basic Sciences
master.epfl.ch/chemistry
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