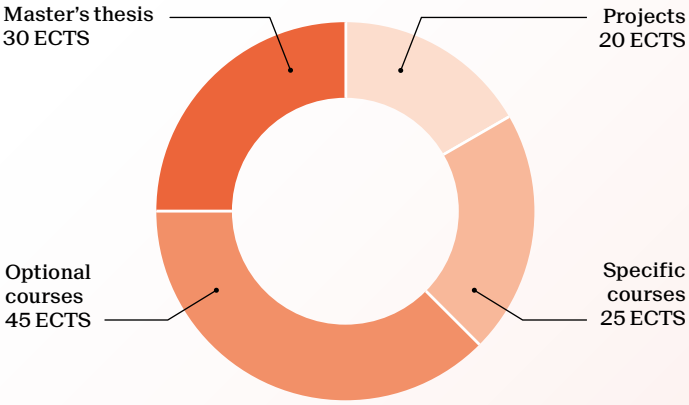
ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

Master of Science in

ENVIRONMENTAL SCIENCES AND ENGINEERING

2-year program - 120 ECTS



The program includes an 8-week compulsory internship

Students are requested to deepen their training either with a 30 ECTS Specialization in:
A Environmental Chemistry and Bioprocess Engineering
B Natural Water, Soil and Ecosystems Engineering
C Environmental Monitoring and Modeling

Students can also opt for a 30 ECTS Minor.
Minors recommended with this Master:
- Computational Science and Engineering
- Energy
- Integrated Design Architecture and Sustainability
- Science, Technology and Area Studies - Russia
- Urban Planning and Territorial Development

Other Minors are possible.
A specialization or minor is included in the 42 optional credits.

	Specialization			Credits
Projects				**20**
Design project				10
SIE/ENAC Project				4
Project in human and social sciences				6

Specific courses				**25**
Air pollution and climate change	A			5
Environmental Transport phenomena		B		5
Geomonitoring			C	5
Spatial statistics and analysis			C	5
Water and wastewater treatment	A			5
Water resources engineering		B		5

Optional courses				**45**
Analyse et management des risques industriels	A			3
Applied wastewater engineering	A			3
Biomineralization: from nature to application	A			4
Development Engineering	A			4
Energy conversion and renewable energy	A			3
Environnements de travail, risques professionnels	A			3
Fate and behaviour of organic pollutants	A			4
Génie des bioprocédés environnementaux	A			4
Groundwater and soil remediation	A			4
Material and energy flow analysis	A			3
Recycling of materials	A			2
Sanitary engineering in developing countries	A			2
Solid waste engineering	A			4
Systèmes de management environnementaux	A			2
TP de bioprocédés environnementaux	A			4
Bio-ingénierie des cours d'eau et milieux naturels		B		2
Concepts in Ecological Engineering		B		4
Droit: contrats et responsabilité professionnelle	A	B	C	3
Écologie numérique		B	C	4
Éco-morphologie fluviale		B		3
Économie hydraulique		B		2
Fluvial biogeosciences		B		3
Hydraulique fluviale et aménagements de cours d'eau		B		3
Hydrogeophysics		B		4
Hydrologie urbaine		B		4
Limnology		B		4
Physics and hydrology of snow		B		4
Risques hydrologiques et aménagements		B		3
Soil Water Regime Management		B		4
Water quality modeling	A	B		4
Advanced Satellite Positioning			C	4
Analyse exploratoire de données géospatiales		B	C	3
Design de SIG			C	4
Distributed information systems			C	4
Distributed intelligent systems			C	5
Experimental design and data analysis with R			C	2
Geocomputation			C	3
Imagery of Territory			C	3
Introduction to database system			C	4
Sensor Orientation			C	4
Études d'impact	A	B		3
Gestion foncière et droit foncier			C	3
SIG et aide à la décision			C	3
Sustainability Assessment			C	3

Career Opportunities

Your expertise, your newly acquired scientific skills and versatility will allow you to access a wide variety of professional activities in the public or private sector, in industry or the service sector, in Switzerland or abroad. Your prospective employers are primarily design offices, engineering consultants or environmental engineering firms. You also have the opportunity to work in public administration (sanitation, energy, mobility, spatial planning, etc.), in small or large companies or in environmental protection institutions (technical cooperation...). Finally, you may also decide to satisfy your scientific curiosity by embarking on a doctoral thesis.

School of Architecture, Civil and Environmental Engineering
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