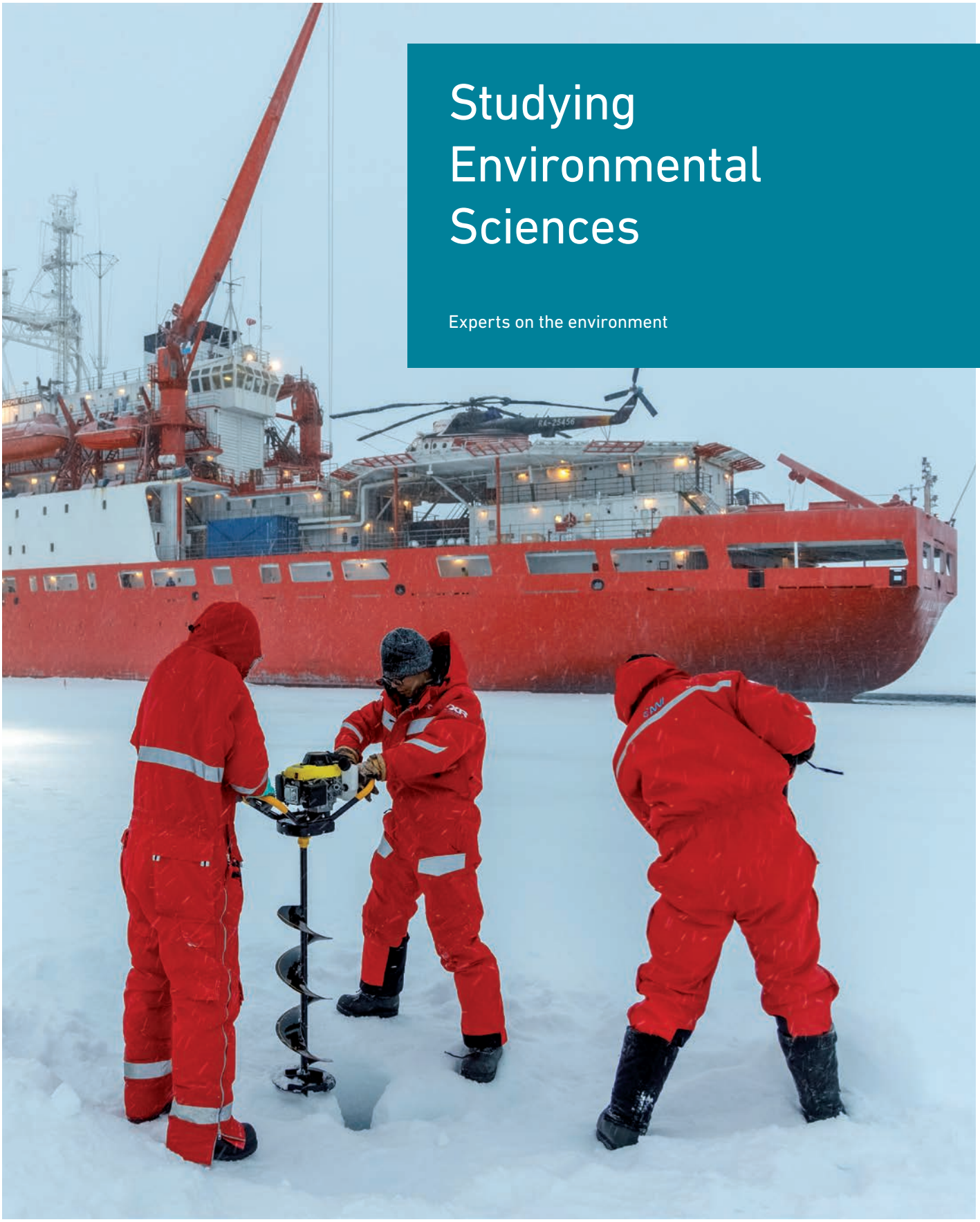
ETH zürich

Department of Environmental Systems Science

Studying Environmental Sciences

Experts on the environment



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Environmental Sciences
Experts on the environment

Why environmental sciences?

Protecting the environment, using resources sustainably and preserving them for future generations are some of the greatest challenges facing humankind today. The disappearance of agricultural land, the imminent shortage of water, excessive CO2 emissions (the main cause of global warming), rising demand for energy and resources and the threat to biodiversity have developed into global problems.

Environmental sciences focus on precisely these issues. Researchers investigate the effects of global warming, examine possibilities for protecting ecosystems and search for ways to prevent the spread of harmful pollutants. Their aim is to preserve the world as a place where everyone can live by taking protective measures and using natural resources in a responsible way.

Environmental scientists take a system-oriented approach. This means that they think and act along interdisciplinary lines and view entire systems from a scientific, sociological and technical perspective. Graduates in the field go on to become highly sought-after experts at both the national and international level, because they have the skills needed to transpose their knowledge into tangible solutions and thus to play an active role in shaping the future of our world.

Who should study environmental sciences?

Environmental sciences are first and foremost natural sciences, but they have numerous links to the humanities, social sciences and engineering. The profile of requirements for this field is therefore similar to those of biology, chemistry or physics – with added scope for thinking and acting on an interdisciplinary basis, analysing complex systems and processes and developing concrete solutions to specific environmental problems. In short, environmental sciences are ideal for committed people with a wide range of interests and an ability to see the bigger picture.

Bachelor's studies: the best foundation

Semesters 1 to 4
In the first two years, students are taught the fundamentals of chemistry, physics, biology, mathematics, environmental systems and computer science, complemented by subjects from the social sciences in the fields of economics and environmental law and and policy of Switzerland. The basic knowledge in each discipline is put into a wider context during lectures, exercises, internships and excursions. The topics range from environmental systems and solving environmental problems to forests and landscape.

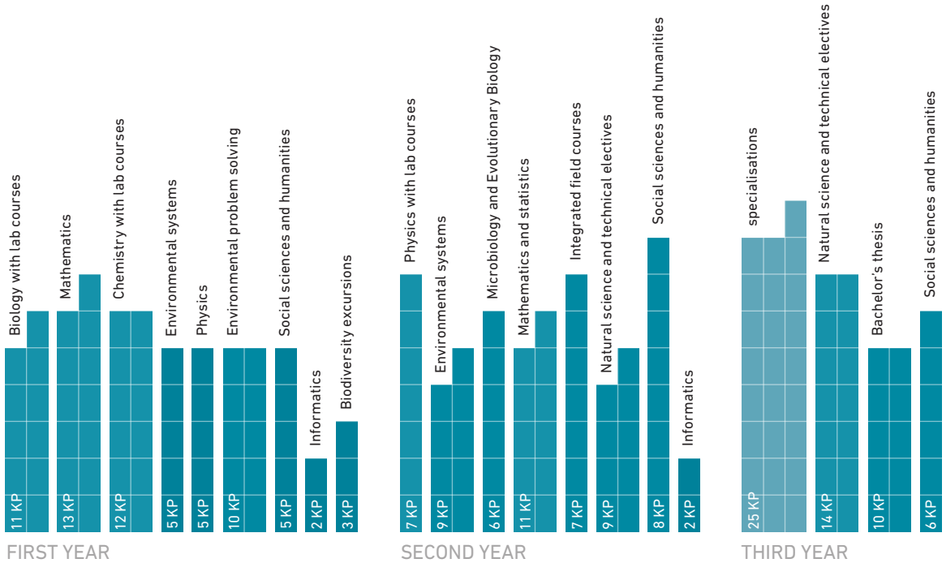
Semesters 5 and 6
In the second part of the Bachelor's degree programme, students can choose between different specialisations:

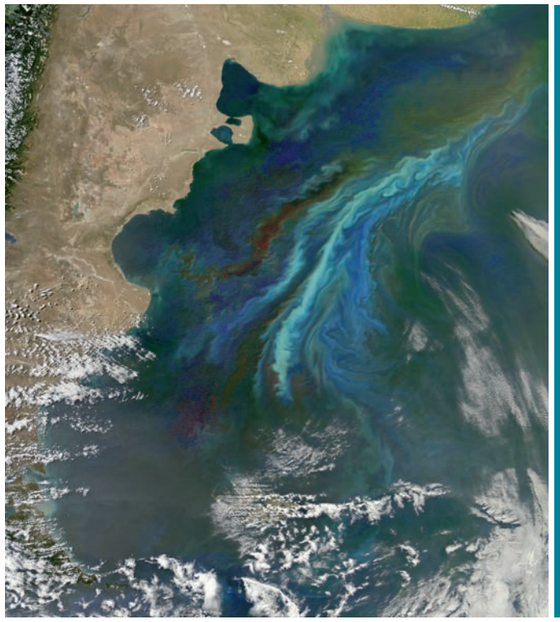
- Biogeochemistry
- Environmental Biology
- Forests and Landscape
- Atmosphere and Climate
- Human-Environment Systems

The courses offered cover theory and methodology and introduce students to areas of practical application. The natural science element of the courses is supplemented with content from the humanities, social and technical sciences. Students complete the Bachelor's degree programme by writing a Bachelor's thesis.

Students with a Bachelor's degree are entitled to progress to a two-year Master's degree programme in environmental sciences or to another Master's programme at ETH Zurich or any other university in Switzerland or abroad. Environmental science students enrol in the Master's programme in environmental engineering at ETH Zurich with no additional requirements.

Course structure: C = credits, 1 credit corresponds to 30 hours of work





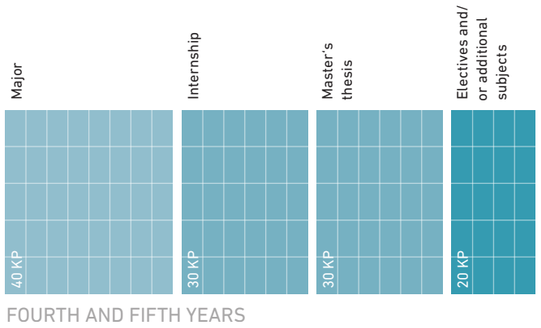
Master's studies: the best qualification for a career

Semesters 7 to 10
In the Master's degree programme, students learn about processes and mechanisms in the natural environment and the interaction between humans and the environment natural world. Students acquire the ability to use suitable methodological tools to analyse environmental issues at a highly scientific level, develop solutions and evaluate them.

The Master's programme offers the following specialisations (Majors):
- Atmosphere and Climate
- Ecology and Evolution
- Biogeochemistry and Pollutant Dynamics
- Environmental Systems and Policy
- Forest and Landscape Management
- Human Health, Nutrition and Environment

If they wish, students can set an additional focus with supplementary courses, so-called minors. They can also choose from a wide range of electives. Another part of the studies is an internship lasting several months. The studies are completed with a Master's thesis on a topic of the chosen specialisation.

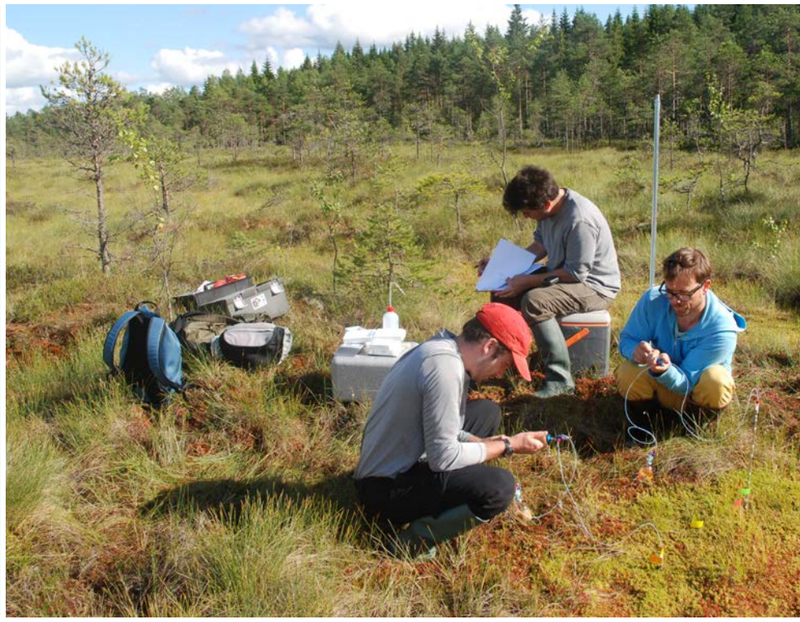
Master's degree course structure in credits



"Every day I can make a contribution to saving our planet. And since many exciting and inspiring people have committed themselves to the same goal, I work in a motivating environment."

Bastien Girod

Business Development Director
South Pole, Lecturer ETH Zurich,
National Councillor



Career prospects: a wide range of opportunities

Studying environmental sciences opens a wide field of career opportunities. Environmental science graduates are not just in demand for research and education at universities – environmental offices, public administration bodies, insurance companies, financial institutions and other service providers also require the expertise of highly qualified environmental experts.

Typical careers include:
- Project manager at an international environmental organisation
- Specialist in sustainable investment products at a major bank
- Risk expert for natural disasters at a reinsurance company
- Owner of a consultancy that deals with contaminated sites, ecological construction and transport
- Scientific specialist at an environmental office for energy issues
- Science editor for a general newspaper
- Energy manager for power stations
- Scientific specialist at the Office for Air, Climate and Renewable Energy

Other options: doctorate or additional training
Keen scientists also have the option to undertake a doctorate in the Department of Environmental Systems Science or in a different department of ETH Zurich, at a research institute, or at another university in Switzerland or abroad. Another possibility is to train as a teacher.

Studying at ETH Zurich

Study programmes at ETH Zurich are intensive and demanding. Nevertheless, students find time to enjoy an active student life.

Get involved
Many students are involved in the Environmental and Forestry Studies Association (UFO) (www.ufo.ethz.ch) or the Association of Students at ETH (VSETH) (www.vseth.ethz.ch). As a member, you can contribute actively to the development of academic life.

Balancing your studies
The Academic Sports Association Zurich (ASVZ), one of the biggest sport associations in Europe, provides ETH students with a choice of more than 70 different sports, taught by 600 instructors. Students registered for academic studies are entitled to participate in the vast majority of these: see www.asvz.ch

Living in Zurich

Zurich is a fascinating city, offering a high quality of life and diverse recreational and cultural activities. Its proximity to lakes and mountains makes it a popular spot for water sports and alpine leisure activities.

Zurich is beautiful, but expensive. The approximate monthly fixed costs for a single person are at least CHF 1790. Personal expenses such as clothes, telephone calls, leisure activities etc. are not included in this amount. You may well spend CHF 2000 a month without living in the lap of luxury.

Accommodation
Several partner institutions of ETH Zurich and the University of Zurich rent out rooms in shared flats and studios:

1 ETH Zurich has built student houses on the Hönggerberg campus with rooms, studios and flats for 900 students: see www.livingscience.ch and www.studentvillage.ch

2 ETH Zurich provides a limited number of furnished single rooms for international Master's (MSc) and exchange students. These rooms can only be rented for one or two semesters: International Student Support, international@sts.ethz.ch

3 The Housing Office of the University of Zurich and ETH Zurich provides an index on privately run student residences in the "Wohnbulletin": www.wohnen.ethz.ch/en.

4 The Student Housing Cooperative (Woko) rents out over 3500 furnished and unfurnished rooms in student residences, student houses or flats in Zurich and Winterthur: www.woko.ch/en

5 On the following websites you can check out other student accommodation ads and create your own room request for free: www.marktplatz.ethz.ch, www.wgzimmer.ch

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Scholarships:
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Zurich Tourist Office:
www.zuerich.com

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