This study guide provides practical information on the Master’s Degree Programme in Environmental Sciences. Further sources of information are given in the text and specifically in section 9. The information about lectures in this guide is as accurate as the publishing date. The most up-to-date and additional information is given in the course catalogue.

The legally binding document for the Master’s degree programme in Environmental Sciences is the German version of the Programme Regulations for the Master of Science ETH in Environmental Sciences (Studienreglement 2013 für den Master-Studiengang Umweltanewissenschaften, Ausgabe 14.12.2018-4).

Students are requested to visit the departmental website for further information www.usys.ethz.ch/en.

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1 https://rechtssammlung.sp.ethz.ch/Dokumente/324.1.1002.11.pdf
Explanations and acronyms

The course lists in sections 2 to 5 show course number, course title, semester (HS = autumn, FS = spring), number of hours, course type and credits available.

Additional remark: the language of instruction is mainly English for the Master’s degree programme in Environmental Sciences. A few lectures are offered in German. Please refer to the course catalogue where the language of instruction is given for each lecture.

Explanations
(Abbreviations as used in the course catalogue)

A = independent project (Selbstständige Arbeit)
BSc = Bachelor
CP = credit points
D = Master’s Thesis (Master-Arbeit)
D-USYS = Department of Environmental Systems Science
E = excursion (Exkursion)
FS = spring semester (Frühjahrssemester)
G = lecture incl. exercises (Vorlesung mit Übung)
HS = autumn semester (Herbstsemester)
h = e.g. “180 h”: total number of contact hours (during or after the semester)
K = colloquium (Kolloquium)
max = maximum
min = minimum
MSc = Master
P = practical course (Praktikum)
S = seminar (Seminar)
U = exercises (Übung)
UNIBE-… = courses at the University of Bern
V = lecture (Vorlesung)
1,2,... = contact hour(s) a week (Semesterwochenstunde/n)
1 Environmental Sciences at ETH Zurich

Today’s society is confronted by large scale environmental problems: the excessive use of natural resources, destruction and degradation of wildlife habitats, climate change and others. Almost all of these problems result from the fact that human activities are degrading the earth’s natural capital at an inordinate rate. In addition to direct effects, environmental degradation also has a major impact on social issues such as health, economy, poverty and national security.

During the Master programme in Environmental Sciences students will be provided with knowledge and understanding of the functioning of the environment. Another focus is to explore the interaction between human beings and the environment. Students learn to analyse environmental problems with scientific methods and develop approaches. They also learn to evaluate these approaches and how to implement them. Working interdisciplinary is very important. It includes natural sciences, social and humanity sciences as well as environmental technologies. The practise of written and oral communication is a particular focus of the study programme.

1.1 Education in Environmental Sciences – Professional Opportunities

The Department of Environmental Systems Science, D-USYS, provides an environment for conducting high-quality research covering a wide range of topics. Teaching is conducted by in-house researchers and external professionals to guarantee a high standard.

The Master’s degree in Environmental Sciences is both a recognised and valued qualification in the employment market. The department systematically surveys the careers of the graduates. The results show that they have a high success rate in the employment market. Within only a few months after graduation the majority secure a professional position which matches both their personal goals and their educational background.

Graduates work in all societal sectors: Based on the findings of “Swiss Statistics” (2017) about half of the actual professional activities can be found in a very broad range of the service sector. Most prominent fields are environmental planning and consulting, banking and insurance. 32% found an appointment in the science sector and 19% of the graduates work in public administration and teaching. 4% are employed by the manufacturing industry and 1% work in the field of agriculture and forestry. Detailed information (in German only) about job opportunities are described in → https://ethz.ch/content/dam/ethz/special-interest/usys/department/documents/studium/umweltnaturwissenschaften/diverse/2016-Joedicke-etal-umnw-vom-studium-zum-beruf.pdf

Graph 1: What do ETH Environmental Sciences graduates do after a year?

A detailed description of the qualification profile is published online → https://usys.ethz.ch/en/studies/environmental-sciences/master/qualification-profile.html

1.2 Structure of the Programme

The Master’s degree programme (120 credits) can be completed within two years and has to be completed within four years. It uses a credit system based on the European Credit Transfer System (ECTS).

The primary language of instruction is English, although some lectures – the ones in this study guide listed with German titles – may be held in German. The language of instruction of each individual course is stated in the online course catalogue of ETH. → www.wz.ethz.ch

The Master’s degree programme in Environmental Sciences offers several specialisation subjects, majors and minors, allowing a programme to be chosen to match individual needs. The graphic below provides an overview of the elements of the Master’s degree programme.

Categories of the Master (120 CP)

- Major 40 CP
- Minor or Electives 10 CP
- Major/Minor/Electives 10 CP
- Internship 30 CP
- Master’s Thesis 30 CP
For two semesters, students focus on scientific topics related to their chosen major. The categories major, minor and elective courses require to reach 60 credits. A minimum of 40 credits must be completed in one of the six majors (cf. section 2) and a minimum of 10 credits in a minor or elective courses. The remaining 10 credits can be chosen within the major or the minor or elective courses or a combination of all. Minors and/or elective courses (cf. section 3) complement the core courses of the selected major.

One semester is spent outside the ETH Zurich, gaining practical work experience during the professional internship with 30 credits (cf. section 4). Finally, a Master’s thesis (30 CP, cf. section 5) is completed on a topic selected from the subject range of the major.

Prerequisites for individual major courses are stated in the online ETH course catalogue. → www.vorlesungsverzeichnis.ethz.ch

For further documents and information on the master’s programme see → https://usys.ethz.ch/en/studies/environmental-sciences/master.html

### 1.3 Admission and Application

The two-year Master’s degree programme is open to students with a Bachelor’s degree with an emphasis on environmental sciences, or an equivalent degree. Students who meet the admittance criteria stated in the programme regulations for the Master in Environmental Sciences can apply to the ETH Rectorate to enter the Master’s degree programme in Environmental Sciences.

Online information for prospective students is available under → https://ethz.ch/en/studies/prospective-masters-degree-students.html

### 2 Major Programmes

The choice of the major programme (Vertiefung) involves individual specialisation. However, the guidelines of each programme guarantee a selection of course units which form a coherent programme of study, encompassing an appropriate combination of knowledge, general methods, tools and techniques. In order to ensure that the individual study programme fits the individual needs, the students are encouraged to contact the responsible study advisor at the beginning of the Master’s degree programme.

Students are also advised to discuss prerequisites for their chosen major with the study advisor before starting their Master’s degree studies and to clarify which courses from the Bachelor’s degree programme should be chosen as elective courses to ensure prerequisites are met.

Students can choose one of the following six major programmes:

- Atmosphere and Climate
- Biogeochemistry and Pollutant Dynamics
- Ecology and Evolution
- Environmental Systems and Policy
- Forest and Landscape Management
- Human Health, Nutrition and Environment

### 2.1 Major in Atmosphere and Climate

For advice regarding this major, students may contact Prof. Dr. Reto Knutti, reto.knutti@env.ethz.ch.

Students in the Major in Atmosphere and Climate gain in-depth understanding of climate processes and their interactions – ranging from the molecular to the global scale and from short-lived phenomena to changes over millions of years. The programme offers quantitative knowledge on atmospheric dynamics, climate processes and feedbacks, biogeochemical cycles, paleoclimatology and in-depth training in numerical modelling of weather and climate.

Students start the major programme with an introduction course in the week prior to the beginning of the semester together with lecturers of the Institute of Atmospheric and Climate Science and with students of the University of Bern. In the first two terms of the programme students attend lectures, tutorials, and field courses that provide them insight in the field of atmospheric and climate science. The major in Atmosphere and Climate also offers an optional exchange programme with the University
of Bern, which allows to gain experience in complimentary fields of atmospheric and climate science.

Students will
- gain an in-depth understanding of the atmospheric system, as well as of its interactions with the hydrosphere, cryosphere and biosphere
- comprehend the physical, chemical and biological background and apply theoretical descriptions
- be able to design, conduct and analyse field and laboratory experiments
- learn how to numerically model the observed systems

Specialised courses in the second term, together with the training of scientific tools, writing skills, presentation techniques and team work will help students prepare for their thesis work. During the period of their Master’s thesis students will be fully integrated into one of the research groups. The Master’s thesis is concluded by writing a thesis and presenting the results to colleagues in an oral presentation.

The curriculum of the major programme comprises the following categories with the minimum number of credit points (CP) to be acquired indicated.

The mandatory courses “Introduction course (2 CP),” “Lab and Field Work (5 CP),” “Colloquia (3 CP)” and “Master-Seminars (6 CP)” add up to 16 CP. Together with at least 24 CP gained in the three modules to be chosen, this results in a minimum of 40 CP for core courses in this major. A minimum of 10 CP need to be obtained in the category “Elective courses or Minors/”. The amount CP of the Major, Electives and/or Minors must sum up to a total of 60 CP.

### Mandatory courses (16 CP)

#### Introduction Course (2 CP)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Semester</th>
<th>CP</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-1213-00</td>
<td>Introduction Course to Master Studies</td>
<td>HS</td>
<td>2 G 2</td>
</tr>
<tr>
<td>651-4095-01</td>
<td>Colloquium Atmosphere and Climate 1</td>
<td>HS/FS</td>
<td>1 K 1</td>
</tr>
<tr>
<td>651-4095-02</td>
<td>Colloquium Atmosphere and Climate 2</td>
<td>HS/FS</td>
<td>1 K 1</td>
</tr>
<tr>
<td>651-4095-03</td>
<td>Colloquium Atmosphere and Climate 3</td>
<td>HS/FS</td>
<td>1 K 1</td>
</tr>
</tbody>
</table>

#### Lab and Field Work (5 CP)

- 701-1260-00 Climatological and Hydrological Field Work FS 5 P 2.5
- 701-1262-00 Atmospheric Chemistry Lab Work FS 5 P 2.5
- 701-1264-00 Atmospheric Physics Lab Work FS 5 P 2.5
- 701-1266-00 Weather Discussion FS 2 P 2.5

#### Module Courses (24 CP)

Students need to select at least three out of the following five modules. The total number of credit points in the modules must amount to a minimum of 24 CP. However, to be valid, a minimum of 6 CP must be obtained in each module.

---

2 The courses listed in the following sections refer to the ETH Zurich course catalogue [www.vvz.ethz.ch](http://www.vvz.ethz.ch) valid on the press date of this brochure. The order of listing in each section follows these rules: all courses of study programme Environmental Science (numbers starting with 701) which take place in the autumn semester are listed first. Followed by courses of other study programmes in autumn semester with increasing numbers. The same rules apply for the spring semester. Detailed information for each course is given in the ETH Zurich online course catalogue.
Climate History and Paleoclimatology
This module introduces methods and approaches in paleoclimatology. Students will have an understanding of the evolution of climate and its major forcing factors through geological time. They will be familiar with the use of the most common geochemical climate “proxies” and be able to evaluate the quality of marine and terrestrial sedimentary paleoclimate archives.

651-4057-00 Climate History and Palaeoclimatology HS 2 G 3
701-1317-00 Global Biogeochemical Cycles and Climate FS 3 G 3
651-4004-00 The Global Carbon Cycle – Reduced FS 2 G 3
651-4044-04 Micropalaeontology and Molecular Palaeontology FS 2 G 3
651-4226-00 Geochemical and Isotopic Tracers of the Earth System FS 2 V 3
701-1270-00 High Performance Computing for Weather and Climate FS 3 G 3

Electives
The lecture “Self-learning Course on Advanced Topics in Atmospheric and Climate Science” will be offered in spring semester (701-1280-00) and autumn semester (701-1281-00) for each of the following modules. It is possible to enroll in both lectures (spring and autumn semester) but you have to choose a different field of specialization.

701-1280/1-00 Self-learning Course on Advanced Topics in Atmospheric and Climate Science HS/FS 90 A 3

To acquire credit points in the category “Elective Courses” the following courses are recommended to supplement the corresponding modules.
Weather Systems and Atmospheric Dynamics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Type</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-1236-00</td>
<td>Messmethoden in der Meteorologie und Klimaforschung</td>
<td>FS</td>
<td>1</td>
<td>V 1</td>
</tr>
<tr>
<td>701-1258-00</td>
<td>The Global Atmospheric Circulation</td>
<td>FS</td>
<td>1</td>
<td>G 2</td>
</tr>
<tr>
<td>701-1266-00</td>
<td>Weather Discussion</td>
<td>FS</td>
<td>2</td>
<td>P 2.5</td>
</tr>
</tbody>
</table>

Climate Processes and Feedbacks

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Type</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-1221-00</td>
<td>Dynamics of Large-Scale Atmospheric Flow</td>
<td>HS</td>
<td>2</td>
<td>V + 1 U 4</td>
</tr>
<tr>
<td>701-1257-00</td>
<td>European Climate Change</td>
<td>HS</td>
<td>2</td>
<td>G 3</td>
</tr>
<tr>
<td>651-4057-00</td>
<td>Climate History and Palaeoclimatology</td>
<td>HS</td>
<td>2</td>
<td>G 3</td>
</tr>
<tr>
<td>UNIBE-6414a</td>
<td>Climatology III [Climate variability and change]</td>
<td>HS</td>
<td>2</td>
<td>V 3</td>
</tr>
<tr>
<td>UNIBE-7716a</td>
<td>Specialist Course – Climate and Environmental Physics</td>
<td>HS</td>
<td>2</td>
<td>V + 2 U 4</td>
</tr>
<tr>
<td>701-1226-00</td>
<td>Inter-Annual Phenomena and Their Prediction</td>
<td>FS</td>
<td>2</td>
<td>G 2</td>
</tr>
<tr>
<td>701-1228-00</td>
<td>Cloud Dynamics: Hurricanes</td>
<td>FS</td>
<td>3</td>
<td>G 4</td>
</tr>
<tr>
<td>701-1317-00</td>
<td>Global Biogeochemical Cycles and Climate</td>
<td>FS</td>
<td>3</td>
<td>G 3</td>
</tr>
</tbody>
</table>

Atmospheric Composition and Cycles

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Type</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-1235-00</td>
<td>Cloud Microphysics</td>
<td>HS</td>
<td>2</td>
<td>V + 1 U 4</td>
</tr>
<tr>
<td>102-0635-01</td>
<td>Lufteinhaltung</td>
<td>HS</td>
<td>4</td>
<td>G 6</td>
</tr>
<tr>
<td>651-4053-05</td>
<td>Boundary Layer Meteorology</td>
<td>HS</td>
<td>3</td>
<td>G 4</td>
</tr>
<tr>
<td>701-0234-00</td>
<td>Messmethoden in der Atmosphärenchemie</td>
<td>FS</td>
<td>1</td>
<td>V 1</td>
</tr>
<tr>
<td>701-1244-00</td>
<td>Aerosols II: Applications in Environment and Technology</td>
<td>FS</td>
<td>2</td>
<td>V + 1 U 4</td>
</tr>
<tr>
<td>651-4004-00</td>
<td>The Global Carbon Cycle – Reduced</td>
<td>FS</td>
<td>2</td>
<td>G 3</td>
</tr>
</tbody>
</table>

Climate History and Paleoeclimatology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Type</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>651-4041-00</td>
<td>Sedimentology I: Physical Processes and Sedimentary Systems</td>
<td>HS</td>
<td>2</td>
<td>G 3</td>
</tr>
<tr>
<td>651-4043-00</td>
<td>Sedimentology II: Biological and Chemical in Processes Lacustrine and Marine Systems</td>
<td>HS</td>
<td>2</td>
<td>G 3</td>
</tr>
<tr>
<td>651-4901-00</td>
<td>Quaternary Dating Methods</td>
<td>HS</td>
<td>2</td>
<td>G 3</td>
</tr>
<tr>
<td>651-4044-04</td>
<td>Micropalaeontology and Molecular Palaeontology</td>
<td>FS</td>
<td>2</td>
<td>G 3</td>
</tr>
<tr>
<td>UNIBE-10370a</td>
<td>Methods of Climate Reconstruction [every 2nd year]</td>
<td>FS</td>
<td>Block</td>
<td>2</td>
</tr>
<tr>
<td>UNIBE-26396a</td>
<td>Quaternary Climate Change and Terrestrial Ecosystems</td>
<td>FS</td>
<td>2</td>
<td>V 3</td>
</tr>
</tbody>
</table>

* Takes place as block course 7 days in June 2020

Hydrology and Water Cycle

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Type</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-0535-00</td>
<td>Environmental Soil Physics/ Vadose Zone Physics</td>
<td>HS</td>
<td>2</td>
<td>G + 2 U 3</td>
</tr>
<tr>
<td>102-0287-00</td>
<td>Fluvial Systems</td>
<td>HS</td>
<td>2</td>
<td>G 3</td>
</tr>
<tr>
<td>651-2915-00</td>
<td>Seminar in Hydrology</td>
<td>HS</td>
<td>1</td>
<td>S 0</td>
</tr>
<tr>
<td>651-4023-00</td>
<td>Groundwater</td>
<td>HS</td>
<td>3</td>
<td>G 4</td>
</tr>
<tr>
<td>701-1216-00</td>
<td>Numerical Modelling of Weather and Climate</td>
<td>FS</td>
<td>3</td>
<td>G 4</td>
</tr>
<tr>
<td>701-1224-00*</td>
<td>Mesoscale Atmospheric Systems-Observation and Modelling</td>
<td>FS</td>
<td>2</td>
<td>V 2</td>
</tr>
<tr>
<td>102-0448-00</td>
<td>Groundwater II</td>
<td>FS</td>
<td>4</td>
<td>G 6</td>
</tr>
<tr>
<td>102-0468-00</td>
<td>Watershed Modelling</td>
<td>FS</td>
<td>2</td>
<td>G 3</td>
</tr>
<tr>
<td>102-0488-00</td>
<td>Water Resources Management</td>
<td>FS</td>
<td>2</td>
<td>G 3</td>
</tr>
<tr>
<td>860-0012-00</td>
<td>Cooperation and Conflict Over Int. Water Resources</td>
<td>FS</td>
<td>2</td>
<td>S + 2 A 3</td>
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</tbody>
</table>

Recommended as additional elective courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Type</th>
<th>Semester</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>701-1237-00*</td>
<td>Solar Ultraviolet Radiation</td>
<td>HS</td>
<td>1</td>
<td>V 1</td>
</tr>
<tr>
<td>651-4273-00</td>
<td>Numerical Modelling in Fortran</td>
<td>HS</td>
<td>2</td>
<td>V 3</td>
</tr>
<tr>
<td>651-4273-01</td>
<td>Numerical Modelling in Fortran [Project]</td>
<td>HS</td>
<td>1</td>
<td>U 1</td>
</tr>
</tbody>
</table>

* Takes place next time in autumn semester 2020

2.2 Major in Biogeochemistry and Pollutant Dynamics

For advice regarding this major, students may contact Dr. Anouk N’Guyen van Chinh, anouk.nguyen@usys.ethz.ch.

Biogeochemistry is an interdisciplinary science of physical, chemical and (micro-) biological processes controlling the regional and global cycles of elements and their compounds. Biogeochemists analyse the response of aquatic, terrestrial, and atmospheric systems to chemical changes induced by greenhouse gas emissions, nutrient loads, and accelerated cycles of metals and organic substances. Identifying the present and future methane emission rates to the atmosphere from wetlands, man-made reservoirs and coastal sediments is just one example where ETH scientists from biogeochemistry work together with colleagues from atmospheric, earth and plant sciences. In the coming years this branch of science will advance on different scales: Satellite remote sensing and coupled models will facilitate the identification of global trends. Microscale analysis with chemical sensors and X-ray spectroscopy open up the possibility of studying complex systems such as living biofilms and plant roots. The advances of molecular biology allow the precise identification of the active microorganisms involved in processes like methane production and oxidation.
Pollutant dynamics is the key word for studies of the distribution, transformation, and the effects of anthropogenic compounds. This integrative science follows an agenda to
· predict the pathways and the fate of organic and inorganic pollutants in environmental systems
· quantify their biogeochemical transformations
· assess their effects on terrestrial and aquatic life

Scientists in this field are confronted with a huge number of organic compounds that are in commercial use. Studying the physical-chemical partitioning of compound groups allows the prediction of their transfer between different environmental systems. Integrative field studies based on trace analysis, stable isotope techniques, and transport measurements help in identifying the relevant transformation pathways. The development of smart test systems such as cell cultures for assessing the effects of pollutants is another active field of research.

Students of the major in biogeochemistry should have an interest in interdisciplinary approaches and enthusiasm for a science that integrates complex field work, laboratory analysis and computer modelling.

The curriculum of the major programme comprises four modules. The minimum number of credit points (CP) to be acquired for each module is indicated below.

### Biogeochemical Processes (15 CP)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>CP</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-1313-00</td>
<td>Isotopes and Biomarkers in Biogeochemistry</td>
<td>HS</td>
<td>2 G 3</td>
</tr>
<tr>
<td>701-1315-00</td>
<td>Biogeochemistry of Trace Elements</td>
<td>HS</td>
<td>2 G 3</td>
</tr>
<tr>
<td>701-1316-00</td>
<td>Physical Transport Processes in the Natural Environment</td>
<td>HS</td>
<td>2 G 3</td>
</tr>
<tr>
<td>701-1310-00</td>
<td>Environmental Microbiology</td>
<td>FS</td>
<td>2 V 3</td>
</tr>
<tr>
<td>701-1312-00</td>
<td>Advanced Ecotoxicology</td>
<td>FS</td>
<td>2 V 3</td>
</tr>
<tr>
<td>701-1314-00</td>
<td>Environmental Organic Chemistry</td>
<td>FS</td>
<td>2 V 3</td>
</tr>
<tr>
<td>701-1317-00</td>
<td>Global Biogeochemical Cycles and Climate</td>
<td>FS</td>
<td>3 G 3</td>
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### Applications (6 CP)

<table>
<thead>
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<th>Semester</th>
<th>CP</th>
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<tr>
<td>701-1341-00</td>
<td>Water Resources and Drinking Water</td>
<td>HS</td>
<td>2 G 3</td>
</tr>
<tr>
<td>701-1346-00</td>
<td>Carbon Mitigation</td>
<td>HS</td>
<td>2 G 3</td>
</tr>
<tr>
<td>701-1351-00</td>
<td>Nanomaterials in the Environment</td>
<td>HS</td>
<td>2 G 3</td>
</tr>
<tr>
<td>701-0998-00</td>
<td>Environmental and Human Health Risk Assessment of Chemicals</td>
<td>FS</td>
<td>2 G 3</td>
</tr>
<tr>
<td>701-1342-00</td>
<td>Agriculture and Water Quality</td>
<td>FS</td>
<td>3 G 3</td>
</tr>
<tr>
<td>860-0012-00</td>
<td>Cooperation and Conflict Over International Water Resources</td>
<td>FS</td>
<td>2 S + 2 A 3</td>
</tr>
<tr>
<td>860-0015-00</td>
<td>Supply and Responsible Use of Mineral Resources</td>
<td>FS</td>
<td>2 G 3</td>
</tr>
</tbody>
</table>

### Methods and Tools: Field and Lab Courses (9 CP)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>CP</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-1331-00</td>
<td>Trace Elements Laboratory</td>
<td>HS</td>
<td>4 P 3</td>
</tr>
<tr>
<td>701-1333-00</td>
<td>Isotopes and Biomarkers in Biogeochemistry Laboratory</td>
<td>HS</td>
<td>4 P 3</td>
</tr>
<tr>
<td>701-1337-00</td>
<td>Forest Soils – Functions and Responses to Environmental Changes</td>
<td>HS</td>
<td>6 P 3</td>
</tr>
<tr>
<td>701-1339-00</td>
<td>Soil Solids Laboratory</td>
<td>HS</td>
<td>6 G 3</td>
</tr>
<tr>
<td>701-1673-00</td>
<td>Environmental Measurement Laboratory</td>
<td>HS</td>
<td>4 G 5</td>
</tr>
<tr>
<td>701-0230-00</td>
<td>Biogeochemistry of Alpine Habitats</td>
<td>FS</td>
<td>3 P 2</td>
</tr>
<tr>
<td>701-1330-00</td>
<td>Molecular Ecotoxicology</td>
<td>FS</td>
<td>6 P 3</td>
</tr>
<tr>
<td>701-1332-00</td>
<td>Analysis of Organic Pollutants</td>
<td>FS</td>
<td>6 P 3</td>
</tr>
<tr>
<td>701-1336-00</td>
<td>Cook and Look: Synchrotron Techniques</td>
<td>FS</td>
<td>6 P 3</td>
</tr>
</tbody>
</table>

### Methods and Tools: Modelling Courses (3 CP)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>CP</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-0426-00</td>
<td>Modelling Aquatic Ecosystems</td>
<td>FS</td>
<td>2 G 3</td>
</tr>
<tr>
<td>701-1240-00</td>
<td>Modelling Environmental Pollutants</td>
<td>FS</td>
<td>2 G 3</td>
</tr>
<tr>
<td>701-1338-00</td>
<td>Biogeochemical Modelling of Sediments, Lakes and Oceans</td>
<td>FS</td>
<td>2 G 3</td>
</tr>
</tbody>
</table>

### Term Paper and Seminar (mandatory, 7 CP)

All students write a term paper on a challenging biogeochemical topic and present their results in a seminar. The seminar provides a forum for intellectual exchange among the student group.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>CP</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-1303-00</td>
<td>Term Paper 1: Writing</td>
<td>HS/FS</td>
<td>6 A 5</td>
</tr>
<tr>
<td>701-1302-00</td>
<td>Term Paper 2: Seminar</td>
<td>HS/FS</td>
<td>1 S 2</td>
</tr>
</tbody>
</table>

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3 The courses listed in the following sections refer to the ETH Zurich course catalogue at [www.vvz.ethz.ch](http://www.vvz.ethz.ch) valid on the press date of this brochure. The order of listing in each section follows these rules: all courses of study programme Environmental Science (numbers starting with 701) which take place in the autumn semester are listed first. Followed by courses of other study programmes in autumn semester with increasing numbers. The same rules apply for the spring semester. Detailed information for each course is given in the ETH Zurich online course catalogue.
Electives
To acquire credit points in the category “Elective Courses” the following courses are recommended:

701-1318-00* Metal Stable Isotopes in Environmental Geochemistry FS 2 G 1
102-0338-01 Waste Management and Circular Economy FS 2 G 3
651-4004-00 The Global Carbon Cycle – Reduced FS 2 G 3
651-4056-00 Limnogeology FS 2 G 3
751-4902-00 Moderne Pflanzenschutzmittel – Wirkungsweise, Rückstandsbildung und Umweltverhalten FS 2 V 2
* uncertain if lecture takes place in spring semester 2020

2.3 Major in Ecology and Evolution
For advice regarding this major, students may contact Dr. Dieter Ramseier, dieter.ramseier@env.ethz.ch.

Ecology is the branch of biological sciences concerned with how living organisms interact with the environment. Ecologists study patterns of biodiversity, adaptations of species to their environment, the dynamics of plant, animal and microbial populations, the structure of natural communities and the functioning of ecosystems. All this knowledge is essential for understanding how human beings influence ecological systems, and for finding ways of managing them sustainably.

The study of evolution lies at the centre of modern biology. Not only has evolution produced the huge diversity of organisms that exist today, with their myriad of adaptations and life forms, but it is continuously at work as populations adjust to changing conditions. Evolutionary biologists investigate patterns of diversity as well as the processes causing genetic change in populations. Human activities are dramatically changing these patterns and processes in many organisms and habitats, including pests and diseases. An understanding of how evolution proceeds is therefore important, not only for our view of the world, but also to reduce unwanted impacts of man-made changes.

The expertise of ecologists and evolutionary biologists is increasingly needed to address many of the world’s most pressing scientific and social problems. Examples include how to reduce the spread of invasive species, to control pests and reduce the risk of emerging diseases, to prevent undesirable impacts of technologies such as agrochemicals and genetically modified organisms, and to ensure the sustainability of ecosystems used to produce food, energy and other natural products. Protecting the world’s biodiversity and maintaining ecosystem services in the face of changing land use, increasing human populations, rapid urbanisation and climate change are also crucial aspects of developing more sustainable human societies. To master these tasks students must become experts in ecology, population biology and evolution and have a good knowledge of the complexity and diversity of organisms. It also requires a sound knowledge of research methods, and an ability to take account of relevant political, social and economic factors.

The major programme in ecology and evolution aims to provide students with these skills and expertise, through a teaching programme that covers core issues of ecology, evolutionary biology, and conservation biology (modules “Foundations” and “Advanced Concepts”). The core of the Ecology and Evolution major is structured into Foundations, Advanced Concepts, Applications, Scientific Skills, and the Term Paper.

Foundations (at least 8 CP)
Three foundations courses in Ecology, Evolution, and Infectious Disease challenge students with the core principles of the major, and ensure common levels of understanding as students advance. The courses present contemporary perspectives on the ecological and evolutionary dynamics of populations, communities, and infectious diseases. Students participate in at least two of these courses but are encouraged to take all three.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-0328-00</td>
<td>Advanced Ecological Processes</td>
<td>HS</td>
<td>2 V 4</td>
</tr>
<tr>
<td>701-1427-00</td>
<td>Experimental Evolution</td>
<td>HS</td>
<td>2 S 4</td>
</tr>
<tr>
<td>701-1708-00</td>
<td>Infectious Disease Dynamics</td>
<td>FS</td>
<td>2 V 4</td>
</tr>
</tbody>
</table>

Advanced Concepts
(Advanced Concepts and Applications courses must sum to at least 12 CP)
Students select from a range of courses building in depth knowledge of specific areas of ecology and evolution.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-0263-01</td>
<td>Seminar in Evolutionary Ecology of Infectious Diseases</td>
<td>HS</td>
<td>2 G 3</td>
</tr>
<tr>
<td>701-1409-00</td>
<td>Research Seminar: Ecological Genetics</td>
<td>HS</td>
<td>1 S 2</td>
</tr>
<tr>
<td>701-1471-00</td>
<td>Ecological Parasitology</td>
<td>HS</td>
<td>1 V + 1 P 3</td>
</tr>
<tr>
<td>701-1676-01</td>
<td>Genomics of Environmental Adaptation</td>
<td>HS</td>
<td>40 G 2</td>
</tr>
<tr>
<td>701-1703-00</td>
<td>Evolutionary Medicine for Infectious Diseases</td>
<td>HS</td>
<td>2 G 3</td>
</tr>
<tr>
<td>636-0017-00</td>
<td>Computational Biology</td>
<td>HS</td>
<td>3 G + 2 A 6</td>
</tr>
</tbody>
</table>

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Recent Advances in Biocommunication HS 2 S 3
Biogeochemistry and Sustainable Management HS 2 G 2
Guarda-Workshop in Evolutionary Biology FS 4 P 3
Advanced Evolutionary Genetics FS 4 G 3
Conservation Genetics FS 4 G 3
Evolution of Social Behavior and Biological Communication FS 2 V 3
Bayesian Phylodynamics FS 2 G + 2 A 4

Applications
(Advanced Concepts and Applications courses must sum to at least 12 CP)
Students explore the management, conservation, and restoration of diverse biological systems, building an appreciation for the relevance of ecological and evolutionary principles to the informed management of natural areas.

Ecological Assessment and Evaluation HS 3 G 3
Advanced Landscape Research HS 3 G 5
Foundations of Ecosystem Management HS 3 G 5
Essentials of Restoration Ecology FS 2 G 2
Applied Ecosystem Management FS 4 P 3
Carbon & Nutrient Cycling in a Changing Climate & Land-Use FS 3 G 5

Scientific Skills (at least 6 CP)
A major in ecology and evolution leads to a range of careers requiring technical expertise. Students have the opportunity to build strength in: Quantitative and Computational Expertise, Laboratory and Field Expertise, and Expertise in Biological Diversity.

Quantitative and Computational Expertise
Quantitative Vegetation Dynamics: Models from Tree to Globe HS 3 G 3
Landscape Modelling of Biodiversity: From Global Changes to Conservation HS 3 G 5
Quantitative Approaches to Plant Population and Community Ecology FS 2 V 2
Modelling Course in Population and Evolutionary Biology FS 6 P 4

Laboratory and Field Expertise
Genetic Diversity: Techniques HS 2 P 2
Aquatic Ecology I HS 3 V 3
Aquatic Ecology II HS 6 U 5
Flora, Vegetation and Böden der Alpen FS 1 V 1
Böden und Vegetation der Alpen (Exkursion) FS 2 P 2
Research in Animal Ecology FS 3 P 3
Genetic Diversity: Analysis FS 2 G 2
Animal Migration and Research in Field Ornithology FS 3 P 2

Expertise in Biological Diversity
Bestimmungskurs aquatische Makroinvertebraten HS 2 P 2
Bestimmungskurs Süsswasserarten und aquatische Mikroinvertebraten HS 2 P 2
Mykologischer Feldkurs FS 3.5 P 3

Term Paper and Seminar (mandatory, 8 CP)
Mentored by a senior scientist, students engage with a topic of their choosing in a semester long term paper, followed by a seminar to the same topic in the consecutive spring semester.

Ecology and Evolution; Term Paper HS 11 A 5
Ecology and Evolution; Seminar FS 6 S 3

Electives
Students gain breadth by enrolling in courses across all of environmental sciences. The following courses are recommended:
Challenges in Plant Sciences HS 2 K 2
Plant Pathology I HS 2 G 2
Evolutionary Biology: Field Course FS 3 P 3
Insects in Agroecosystems FS 2 V 2
Global Change Biology FS 2 G 2
2.4 Major in Environmental Systems and Policy

For advice regarding this major, students may contact Prof. Dr. Antony Patt, anthony.patt@usys.ethz.ch or Prof. Dr. Michael Stauffacher, michael.stauffacher@usys.ethz.ch.

The major in Environmental Systems and Policy (ESP) trains students to analyze environmental problems in order to design effective policies to address current issues. The ESP major does not only provide the training and tools to help solve environmental problems but also an understanding of the human aspect of such problems and the associated solutions. The core of the ESP major is a training in policy analysis applied to environmental problems.

In this program, “policy” means a strategy to address a particular problem, typically designed and implemented by governments, but also by civil society and, in some cases, by the private sector. Analyzing such policies involves a full consideration of their likely effects as well as their political and social acceptability. While this training is grounded in the relevant aspects of social science theory, the emphasis is on practical application in today’s world.

Policy analysts are increasingly in demand in public agencies, non-governmental organizations, and the private sector, such as in consulting firms. With their skill set, they often advance into leadership roles. Graduates of the Master degree programme with the ESP major will stand out because of their unique qualifications, combining an in-depth understanding of environmental systems science with the knowledge and skills required to identify solution strategies that are environmentally, technically, and socially robust.

Prerequisites
A BSc degree with the specialisation “Human-Environment Systems” is a good basis, but also all the other specialisations offered within the Bachelor’s degree programme in Environmental Sciences from the ETH Zurich or a BSc degree in similar fields from other universities are a good foundation.

The curriculum of the ESP major programme is structured in three modules, each with a minimum of 9 and a maximum of 22 CP. Within each module, there is one mandatory subject (required course). The total amount of CP has to sum up to 40.

Module 1: Theoretical foundations for environmental policy (at least 9 CP)

The first module covers the theoretical foundations based on relevant social sciences, including economics, political science, and psychology. Within this module, students will learn to appraise the relevant criteria by which to judge a policy’s success, as well as the factors that influence its political and social acceptability.

<table>
<thead>
<tr>
<th>Required course (6 CP)</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>701-1651-00 Environmental Governance</td>
<td>HS</td>
<td>3</td>
<td>G 6</td>
</tr>
<tr>
<td>701-1563-00 Climate Policy</td>
<td>HS</td>
<td>3</td>
<td>G 6</td>
</tr>
</tbody>
</table>

And at least the remaining 3 CP from the following courses

| 701-0727-00* Environmental Problem Solving in Developing Countries | HS | 2 | G 3       |
| 701-1563-00 Climate Policy                                              | HS | 3 | G 6      |
| 851-0609-06 Governing the Energy Transition                            | HS | 2 | V 3      |
| 860-0023-00 International Environmental Politics                      | HS | 2 | V 3      |
| 701-0758-00 Ökologische Ökonomik: Grundlagen und Wachstumskritik       | FS | 2 | V 2      |
| 701-0764-00 Kritische Auseinandersetzung mit dem ökonomischen Wachstumsparadigma | FS | 1 | S 1      |
| 701-1652-00* Environmental Behaviour and Collective Decision Making   | FS | 2 | G 3      |
| 363-1076-00 Diffusion of Clean Technologies                           | FS | 2 | G 3      |
| 364-0576-00 Advanced Sustainability Economics                         | FS | 2 | G 3      |
| 752-2121-00 Consumer Behaviour II                                    | FS | 2 | G 2      |
| 752-2123-00 Risk Awareness, Risk Acceptance and Trust                | FS | 2 | V 3      |
| 851-0735-11 Environmental Regulation: Law and Policy                 | FS | 1 | S 3      |
| 860-0022-00 Complexity and Global Systems Science                     | FS | 2 | V 3      |

* will be offered in autumn semester 19 or spring semester 20 for the last time

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Module 2: Modelling and Statistical Analysis (at least 9 CP)

This module consists of modelling, in terms of both simulating how the behaviour of a system may respond to a future policy intervention and evaluating data that reveal the effects of past interventions. The module has three core elements: conceptual system mapping, computer simulation and modelling, and statistical analysis, including econometrics.

Required course (6 CP)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-1565-00</td>
<td>Quantitative Policy Analysis and Modeling</td>
<td>HS</td>
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<td>6</td>
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</tbody>
</table>

And at least 3 CP from the following courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-1453-00*</td>
<td>Ecological Assessment and Evaluation</td>
<td>HS</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>701-1541-00**</td>
<td>Multivariate Methods</td>
<td>HS</td>
<td>2 V + 1 U</td>
<td>3</td>
</tr>
<tr>
<td>101-0491-00</td>
<td>Agent Based Modeling in Transportation</td>
<td>HS</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>363-0541-00</td>
<td>Systems Dynamics and Complexity</td>
<td>HS</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>701-1252-00</td>
<td>Climate Change Uncertainty and Risk:</td>
<td>FS</td>
<td>2 V + 1 U</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>From Probabilistic Forecasts to Economics</td>
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<td></td>
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<tr>
<td></td>
<td>of Climate Adaptation</td>
<td></td>
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</tr>
<tr>
<td>701-1522-00</td>
<td>Multi-Criteria Decision Analysis</td>
<td>FS</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>701-1674-00</td>
<td>Geospatial Data Management and Analysis</td>
<td>FS</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>752-2110-00</td>
<td>Multivariate Statistical Analysis</td>
<td>FS</td>
<td>2 V</td>
<td>3</td>
</tr>
</tbody>
</table>

* Takes place next time in autumn semester 2020
** will be offered in autumn semester 19 for the last time

Module 3: Policy Engagement (at least 9 CP)

This module forces students to step out of the ivory tower of scientific theory and into the real world in which decisions are made. Such engagement concentrates on three elements: the historical and current political context for environmental policy, group problem solving, and communication with stakeholders.

Required course (6 CP)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-1562-00</td>
<td>Cases in Environmental Policy and Decision Making</td>
<td>FS</td>
<td>4 S</td>
<td>6</td>
</tr>
</tbody>
</table>

And at least 3 CP from the following courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-1543-00*</td>
<td>Transdisciplinary Methods and Applications</td>
<td>HS</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>701-1551-00</td>
<td>Sustainability Assessment</td>
<td>HS</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>701-1563-00</td>
<td>Climate Policy</td>
<td>HS</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>701-0016-00**</td>
<td>Philosophical Issues in Understanding</td>
<td>FS</td>
<td>1 S</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Global Change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>701-1350-00</td>
<td>Case Studies in Environment and Health</td>
<td>FS</td>
<td>2 V</td>
<td>4</td>
</tr>
<tr>
<td>701-1502-00</td>
<td>Transdisciplinary Case Study</td>
<td>FS</td>
<td>15 P</td>
<td>7</td>
</tr>
<tr>
<td>701-1653-00</td>
<td>Policy and Economics of Ecosystem Services</td>
<td>FS</td>
<td>2 G</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives

Students must complete a total of 60 CP in the categories Major and Minor/Elective Courses. A minimum of 40 credits is required for the major. In the ESP major programme at least 10 CP have to focus on a particular environmental or technological system, for instance by choosing a respective minor (see below). The remaining ten credits can be completed either in the major, in the minor, in the electives or a combination of these categories.

Students have to choose one minor focusing on environmental or technological systems:

Appropriate minors (cf. section 3; also see option below) are:

- Biogeochemistry
- Physical Glaciology
- Catchment Management and Natural Hazards
- Soil-plant Relations and Land Use
- Agricultural Plant Production and Environment
- Sustainable Energy Use
- Life Cycle Assessment

Students also have the flexibility to propose a set of courses from an area of environmental systems science for which no minor currently exists (e.g. concerning climate systems) to satisfy this requirement. The proposal has to be discussed with and to be approved by Prof. Dr. Michael Stauffacher (michael.stauffacher@usys.ethz.ch). For a word document to prepare the proposal go to → https://usys.ethz.ch/en/studies/environmental-sciences/master/majors/environmental-systems-policy.html
2.5 Major in Forest and Landscape Management

For advice regarding this major, students may contact Florian Knaus, florian.knaus@env.ethz.ch.

In many parts of the world, dramatic changes in human population and their economic status are taking place. Some regions are seeing a rapidly increasing population, whereas remote areas in other regions are witnessing depopulation. The requirements of the human population are therefore changing substantially with regard to ecosystem goods and services. The results are over-utilisation and irreversible damage such as loss of biodiversity and erosion or, by decreasing use, problems such as lack of protection from natural hazards or loss of agricultural land. Anthropogenic changes such as nitrogen deposition and the expected climate change overlay these processes and will additionally affect ecosystems.

A key challenge therefore is to ensure the sustainable use of terrestrial ecosystems and natural resources in the face of continuous changes in society, economy and the environment. Forested landscapes play an important role as they provide numerous products such as timber or bio-energy, they influence biogeochemical cycles, have multiple feedbacks on the climate system at regional to global scales, are important for preserving biodiversity, and supply humans with numerous further goods and services.

To cope with current and future challenges, we need academics who understand the dynamics of near-natural ecosystems in a landscape context and who can develop sustainable methods for the management of natural resources. Graduates of the major in Forest and Landscape Management have a good grasp of the multi-dimensional objectives of land use and landscape development and take them into account in the framework of hands-on problem solving. They have a thorough understanding of the dynamics of forest and landscape systems, and the ability to deal with complex problems as well as to integrate system, target and action knowledge. They learn to develop goal-oriented management schemes for forests and landscapes. Ultimately, they take on responsible positions in consulting companies, other private or public organisations, politics, administration and research.

Prerequisites

A BSc degree in Environmental Sciences ETH Zurich with the specialisation “Wald und Landschaft” is a good basis for this major programme, but also “Umweltbiologie”, “Biogeochemie” or “Mensch-Umwelt Systeme”. A BSc degree in similar fields from another university will serve as a valid foundation as well. Depending on the individual choices made during the Bachelor’s curriculum, students may need to acquire key knowledge and skills during the major programme that are conveyed in the context of the Bachelor’s specialisation “Wald und Landschaft” at ETH Zurich.

The core part of the major is composed of four modules; in addition, there is a project-related mandatory course (5 CP). Including the project-related work, a total of at least 40 CP have to be acquired from the core part of the major. The minimum number of CP required for every module is 5.

Natural Science Foundations (at least 5 CP)\(^6\)

Students acquire an understanding of natural processes necessary for ensuring the sustainable use of extensively managed landscapes.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>ECTS</th>
<th>CP</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-1613-01</td>
<td>Advanced Landscape Research</td>
<td>HS</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>701-1644-00</td>
<td>Mountain Forest Hydrology</td>
<td>HS</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>701-1646-00</td>
<td>Carbon and Nutrient Cycling in a Changing Climate and Land-Use</td>
<td>FS</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

Forest Pathology and Insect Ecology, 5 CP consisting of

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>ECTS</th>
<th>CP</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-1615-00</td>
<td>Advanced Forest Pathology</td>
<td>HS</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>701-0318-00</td>
<td>Ökologie und Management von Waldinsekten</td>
<td>FS</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Ecosystem Management (at least 5 CP)

Students acquire the skills to develop and assess resource utilisation schemes that are biophysically feasible, economically efficient, ecologically justifiable and institutionally acceptable.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>ECTS</th>
<th>CP</th>
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</thead>
<tbody>
<tr>
<td>701-1631-00</td>
<td>Foundations of Ecosystem Management</td>
<td>HS</td>
<td>3</td>
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<tr>
<td>701-1635-00</td>
<td>Multifunctional Forest Management</td>
<td>HS</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>701-1636-01</td>
<td>Ökologie und Management von Gebirgswäldern</td>
<td>FS</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

Decision Making, Policy and Planning (at least 5 CP)

Students acquire the skills to analyse and support collective decision-making processes, and to analyse and adapt governance processes and instruments for the implementation of natural resource-related programs and projects.

\(^6\) The courses listed in the following sections refer to the ETH Zurich course catalogue → www.vvz.ethz.ch valid on the press date of this brochure. The order of listing in each section follows these rules: all courses of study programme Environmental Science (numbers starting with 701) which take place in the autumn semester are listed first. Followed by courses of other study programmes in autumn semester with increasing numbers. The same rules apply for the spring semester. Detailed information for each course is given in the ETH Zurich online course catalogue.
Students who enrolled in the MSc degree programme before autumn semester 2019, can get credits for the courses 701-0743-01 Rechtlicher Umgang mit natürlichen Ressourcen and 851-0735-11 Environmental Regulation: Law and Policy in the core module “Decision Making, Policy and Planning” of the FLM Major. This applies only for spring semester 2020.

103-0338-00* Projektwoche Landschaftsentwicklung  
701-1653-00 Policy and Economics of Ecosystem Services  
701-1654-00 Forest Economics and Environmental Valuation  
701-1651-00 Environmental Governance  

* This course has a limited capacity. The timing of the field week is coordinated with other FLM field courses.

Methods and Tools (at least 5 CP)
Students enhance their methodological know-how for sampling, processing and analysing spatio-temporal data of large-scale systems, and increase their modelling and analytical skills (e.g. Geographic Information Technology).

701-1673-00 Environmental Measurement Laboratory  
701-1679-00 Landscape Modelling of Biodiversity: From Global Changes to Conservation  

Project-related Work (mandatory, 5 CP)
The project-related work consists of an interdisciplinary project in which students work in teams on real-world cases. The project aims at providing a set of complex problems that require the integration of different knowledge domains and that sharpen science-based problem solving skills.

701-1692-00 Interdisciplinary Project

Electives
Additionally to the mandatory 40 credit points (CP) in the major Forest and Landscape Management students choose up to 20 CP in the category Electives/ Minors. The following courses are particularly suitable for this major:

Natural Science Foundations
701-1620-00 Tree Genetics – Concepts and Applications  
751-5125-00 Stable Isotope Ecology of Terrestrial Ecosystems  
751-5118-00 Global Change Biology

Ecosystem Management
701-1453-00* Ecological Assessment and Evaluation  
701-1663-00** Exploring Resilience of Tropical Forest Landscapes  
701-1456-00** Applied Ecosystem Management (Field Course in Serbia)  
701-1640-00 AK des multifunktionalen Waldmanagements  

* Takes place next time in autumn semester 2020  
** Takes places every other year: 701-1663-00 will take place in autumn semester 2020; 701-1456-00 will take place in spring semester 2020

Decision Making, Policy and Planning
103-0468-00 Participatory Modeling in Integrated Landscape Development  
701-0743-01 Rechtlicher Umgang mit natürlichen Ressourcen  
103-0330-00 Landscape Aesthetics  
751-2700-00 Bodenmarkt und Bodenpolitik  
851-0735-11* Environmental Regulation: Law and Policy  

* Students who enrolled in the MSc degree programme before autumn semester 2019, can get credits for this course/ these courses in the core module “Decision Making, Policy and Planning” of the FLM Major. This applies only for spring semester 2020.

Methods and Tools
701-1316-00 Physical Transport Processes in the Natural Environment  
701-1677-00 Quantitative Vegetation Dynamics: Models from Tree to Globe  
701-1682-00 Dendroecology  
701-1776-00 Geographic Data Processing with Python and ArcGIS  
401-0627-00 Smoothing and Nonparametric Regression with Examples
2.6 Major in Human Health, Nutrition and Environment

For advice regarding this major, students may contact Prof. Dr. Roland Regös, roland.regoes@env.ethz.ch.

Human health is determined by complex interactions between individual lifestyles (food, nutrition, behaviour), environmental factors (e.g. climate, pollutants, infectious diseases, radiation) and societal aspects (e.g. medical infrastructure, information, prevention, regulation). The major in Human Health, Nutrition and Environment focuses on pollutants, infectious diseases and diet as examples of important factors affecting human health. Moreover it also addresses the understanding of the influence of these factors on human health under changing conditions (e.g. urbanisation, migration, climate change, pollution). The programme promotes the understanding of the complex underlying mechanisms by taking an integrative, systemic approach, bridging the molecular, cellular, organismal and population levels. This approach fosters integrative thinking and provides the basis to map out strategies on a societal level to improve human health. This interdisciplinary programme therefore combines the biomedical knowledge with a system-oriented view on the human population.

Prerequisites

A BSc degree in Environmental Sciences ETH Zurich with the specialisation “Environmental Biology”, “Biogeochemistry” or “Human-Environment Systems” provides a solid basis for this major programme. However, students need to acquire sound knowledge and skills during the second and third Bachelor’s year in the field of human nutrition as well as human anatomy and physiology. Depending on the chosen modules training in environmental organic chemistry and immunology is essential.

The curriculum of the major programme comprises the four modules listed below and a term paper. The module “Public Health” is mandatory for all students of this major. Two further modules have to be chosen.

While within the module “Public Health” and each of the two other modules a minimum of 10 credit points must be acquired, the total minimum number of credit points to be earned in three modules is 34 (34 CP + 6 CP from the Term Paper add up to a minimum of 40 CP for the major).

Public Health (mandatory for all students of this major programme)*
This module includes all aspects of public health including the patterns of community health, epidemiology and statistical concepts, as well as biological and environmental determinants, the role of the social sciences, communication and monitoring of food safety in public health.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>401-0629-00</td>
<td>Applied Biostatistics*</td>
<td>HS</td>
<td>3 G</td>
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<tr>
<td>752-6105-00</td>
<td>Epidemiology and Prevention</td>
<td>HS</td>
<td>2 V</td>
<td>3</td>
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<tr>
<td>752-6151-00</td>
<td>Public Health Concepts*</td>
<td>HS</td>
<td>2 V</td>
<td>3</td>
</tr>
<tr>
<td>363-1066-00</td>
<td>Designing Effective Projects for Promoting Health@Work</td>
<td>FS</td>
<td>2 G</td>
<td>3</td>
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<tr>
<td>752-6104-00</td>
<td>Nutrition for Health and Development</td>
<td>FS</td>
<td>2 V</td>
<td>2</td>
</tr>
</tbody>
</table>
* Key lecture of the module

Nutrition and Health
This module is primarily designed to describe and discuss the impact of diet and lifestyle on obesity and chronic diseases in the industrialised world, but it also includes the negative health consequences of insufficient food and micronutrient deficiencies in the developing world. The module promotes food-based strategies to maintain health and to prevent disease and offers a broad spectrum of disciplines from nutrigenomics through nutrition to consumer behaviour with a special emphasis on the physiology of eating.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>Type</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>752-2122-00</td>
<td>Food and Consumer Behaviour</td>
<td>HS</td>
<td>2 V</td>
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<tr>
<td>752-5103-00</td>
<td>Functional Microorganisms in Foods</td>
<td>HS</td>
<td>2 G</td>
<td>3</td>
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<tr>
<td>752-6101-00</td>
<td>Dietary Etiologies of Chronic Disease</td>
<td>HS</td>
<td>2 V</td>
<td>3</td>
</tr>
<tr>
<td>752-6402-00</td>
<td>Nutrigenomics</td>
<td>HS</td>
<td>2 V</td>
<td>3</td>
</tr>
<tr>
<td>752-1300-01</td>
<td>Food Toxicology</td>
<td>FS</td>
<td>1 V</td>
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<tr>
<td>752-6102-00</td>
<td>The Role of Food and Nutrition for Disease Prevention</td>
<td>FS</td>
<td>2 V</td>
<td>3</td>
</tr>
<tr>
<td>752-6302-00</td>
<td>Physiology of Eating</td>
<td>FS</td>
<td>2 V</td>
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</tbody>
</table>

The courses listed in the following sections refer to the ETH Zurich course catalogue → [www.vvz.ethz.ch](http://www.vvz.ethz.ch) valid on the press date of this brochure. The order of listing in each section follows these rules: all courses of study programme Environmental Science (numbers starting with 701) which take place in the autumn semester are listed first. Followed by courses of other study programmes in autumn semester with increasing numbers. The same rules apply for the spring semester. Detailed information for each course is given in the ETH Zurich online course catalogue.
Environment and Health
This module focuses on chemical and microbial pollutants, particularly in water. It considers their impact on the environment and looks at the role of human behaviour in this context. It deals with the exposure, annoyances and risks for humans from these factors. The module provides an understanding of the biochemical and cellular mechanisms as well as processes in natural and technical systems.

701-1341-00 Water Resources and Drinking Water HS 2 G 3
376-1353-00 Nanostructured Materials Safety HS 1 V 2
701-0662-00 Environmental Impacts, Threshold Levels and Health Effects FS 2 V 3
701-1312-00 Advanced Ecotoxicology FS 2 V 3
701-1350-00 Case Studies in Environment and Health FS 2 V 4
701-1704-01 Health Impact Assessment: Concepts and Case Studies FS 2 V 3
376-1353-00 Nanostructured Materials Safety HS 1 V 2

Infectious Diseases
Infectious diseases are still among the major causes of death worldwide. To understand and eventually control the spread of these diseases we need to consider the demography, agricultural and ecological factors in addition to microbiology and immunology. In this module, we account for this complexity and introduce students to a discipline that has been recently called “One Health”.

701-0263-01 Seminar in Evolutionary Ecology of Infectious Diseases HS 2 G 3
701-1471-00 Ecological Parasitology HS 1 V + 1 P 3
701-1703-00 Evolutionary Medicine for Infectious Diseases HS 2 G 3
551-0223-00 Immunology III HS 2 V 4
752-4009-00 Molecular Biology of Foodborne Pathogens HS 2 V 3
701-1708-00 Infectious Disease Dynamics FS 2 V 4

Term Paper (mandatory)
The term paper is mandatory for all students and is designed to provide experience in literature-based research and write review-type of paper in collaboration with representatives of this major.

701-1701-00 Human Health, Nutrition and Environment: Term Paper HS 13 A 6

3 Minor Programmes and Elective Courses

Minors [Ergänzungsfächer] are units of several lectures, which focus on a specific subject and are awarded with at least 10 CP. Selecting two minors gains the required 20 credit points. As “Elective Courses”, basically courses from the complete ETH course catalogue can be taken. Students not taking any minors or choosing elective courses in addition to a minor have various possibilities of gaining 20 or 10 credit points respectively (cf. section 3.12).

3.1 Minor in Sustainable Energy Use
For advice regarding this minor, students may contact Dr. Christian Pohl, christian.pohl@env.ethz.ch.

The minor “Sustainable Energy Use” introduces students to the production, distribution and consumption of energy. The goal of this minor is to prepare students to interact with experts from the energy sector. With a deepened understanding of the energy sector and its dynamics students will be able to present the environmental science point of view in a more differentiated manner. The minor is designed for students who plan to work in the energy sector. Since energy relates to all majors of environmental sciences, it can be recommended to all interested major students. The learning targets are, depending on the selected courses, to become acquainted with renewable energy production, storage and energy conservation, with the electricity market and the strategic positioning of renewable energies, or with the successful planning of renewable energy projects.

701-0967-00* Projektentwicklung im Bereich erneuerbarer Energien HS 2 G 2
701-1346-00 Carbon Mitigation HS 2 G 3
052-0609-00 Energie- und Klimasysteme I HS 2 G 2
227-0731-00 Power Market I – Portfolio and Risk Management HS 4 G 6
151-0206-00 Energy Systems and Power Engineering FS 2 V + 2 U 4
151-0928-00 CO2 Capture and Storage and the Industry of Carbon-Based Resources FS 3 G 4
227-0664-00 Technology and Policy of Electrical Energy Storage Information FS 2 G 3
227-0730-00 Power Market II – Modeling and Strategic Positioning FS 4 G 6
363-0514-00 Energy Economics and Policy FS 2 G 3
529-0191-01 Renewable Energy Technologies II, Energy Storage and Conversion FS 3 G 4

* Very good German skills required
3.2 Minor in Global Change and Sustainability

For advice regarding this minor, students may contact Dr. Christoph Baumberger, christoph.baumberger@usys.ethz.ch.

Global Change and Sustainability encompass a wide range of environmental issues, such as climate change, soil degradation, biodiversity, desertification, fresh water resources and urbanisation. These challenges are intimately linked to policy issues. The minor provides a policy-oriented inter- and transdisciplinary introduction to current themes in this area.

The programme is specifically designed for students with a background in natural sciences. The courses enable students to integrate the economic, social and political dimensions of the associated debates in sustainability assessment and policy design and to reflect on the understanding of global change and sustainability gained by scientific methods.

Course list from which students have to achieve at least 10 credits.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-0019-00*</td>
<td>Readings in Environmental Thinking</td>
<td>HS</td>
<td>2</td>
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</tr>
<tr>
<td>701-1551-00</td>
<td>Sustainability Assessment</td>
<td>HS</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>551-0209-00</td>
<td>Sustainable Plant Systems</td>
<td>HS</td>
<td>2</td>
<td>2</td>
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<tr>
<td>860-0023-00</td>
<td>International Environmental Politics</td>
<td>HS</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>701-0016-00**</td>
<td>Philosophical Issues in Understanding Global Change</td>
<td>FS</td>
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<td>2</td>
</tr>
<tr>
<td>701-1653-00</td>
<td>Policy and Economics of Ecosystem Services</td>
<td>FS</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>751-5118-00</td>
<td>Global Change Biology</td>
<td>FS</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>860-0012-00</td>
<td>Cooperation and Conflict Over International Water Resources</td>
<td>FS</td>
<td>2 + 2 A</td>
<td>3</td>
</tr>
</tbody>
</table>

* Will likely be offered in autumn semester 2020

** Uncertain, if offered in spring semester 2020

3.3 Minor in Transdisciplinarity for Sustainable Development

For advice regarding this minor, students may contact Prof. Dr. Michael Stauffacher, michael.stauffacher@usys.ethz.ch.

The minor in “Transdisciplinarity for Sustainable Development” addresses the issue of sustainable development from a methodological perspective, namely to understand and improve how science can collaborate with society: It introduces different methods and tools how to structure wicked problems; it addresses concepts and methodologies how to assess sustainable development with a special focus on justice related issues; it integrates knowledge from various disciplines and actors to develop strategic actions. The minor combines theoretical, conceptual and methodological introductory courses with concrete application in real-world case studies. It targets students who want to learn how to concretely tackle problems of sustainable development both from a scientific and practically oriented perspective.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>Year</th>
<th>Credits</th>
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<tbody>
<tr>
<td>701-1543-00*</td>
<td>Transdisciplinary Methods and Applications</td>
<td>HS</td>
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<tr>
<td>701-1551-00</td>
<td>Sustainability Assessment</td>
<td>HS</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>701-0998-00</td>
<td>Environmental and Human Health Risk Assessment of Chemicals</td>
<td>FS</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>701-1502-00</td>
<td>Transdisciplinary Case Study</td>
<td>FS</td>
<td>15</td>
<td>7</td>
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</tbody>
</table>

* Takes place next time in autumn semester 2020

3.4 Minor in Life Cycle Assessment

For advice regarding this minor, students may contact Prof. Dr. Michael Stauffacher, michael.stauffacher@usys.ethz.ch.

Life-cycle assessment is a widely applied tool to assess environmental impacts along a product’s life-cycle. With this minor, the students learn about environmental assessment methodologies and their various applications. The goal is to qualify students for further academic studies at the PhD level as well as for practical work in engineering or consulting industry. The minor requires basic knowledge of environmental assessment tools. Theoretical input is combined with computer lab, exercises and practical case studies.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>Year</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>101-0577-00</td>
<td>An Introduction to Sustainable Development in the Built Environment</td>
<td>HS</td>
<td>2</td>
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<tr>
<td>102-0317-00</td>
<td>Advanced Environmental Assessments</td>
<td>HS</td>
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<tr>
<td>102-0317-03</td>
<td>Advanced Environmental Assessment (Computer Lab I)</td>
<td>HS</td>
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<tr>
<td>102-0317-04</td>
<td>Advanced Environmental Assessment (Computer Lab II)</td>
<td>HS</td>
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<tr>
<td>101-0588-01</td>
<td>Re-/Source the Built Environment</td>
<td>FS</td>
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<td>3</td>
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<tr>
<td>101-0608-00</td>
<td>Design-Integrated Life Cycle Assessment</td>
<td>FS</td>
<td>2</td>
<td>3</td>
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<tr>
<td>102-0348-00</td>
<td>Prospective Environmental Assessments</td>
<td>FS</td>
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</tr>
</tbody>
</table>
3.5 Minor in Biogeochemistry

For advice regarding this minor, students may contact Dr. Anouk N’Guyen van Chinh, anouk.nguyen@usys.ethz.ch.

Biogeochemists analyse the distribution and transformation of natural and anthropogenic compounds in the earth system. Students of this minor obtain a deeper process-level understanding, allowing them to assess and predict the fate of elements and chemical compounds in the environment. Students should be interested in linking molecular perspectives with interdisciplinary approaches. To gain 10 CP students have to choose at least one course from each module.

Understanding Processes

- **701-1313-00 Isotopes and Biomarkers in Biogeochemistry**
  - HS 2 G 3
- **701-1315-00 Biogeochemistry of Trace Elements**
  - HS 2 G 3
- **701-1310-00 Environmental Microbiology**
  - FS 2 V 3
- **701-1317-00 Global Biogeochemical Cycles and Climate**
  - FS 3 G 3

Applying Biogeochemical Knowledge for Problem-solving

- **701-1341-00 Water Resources and Drinking Water**
  - HS 2 G 3
- **701-1346-00 Carbon Mitigation**
  - HS 2 G 3

3.6 Minor in Physical Glaciology

For advice regarding this minor, students may contact Dr. Hanna Joos, hanna.joos@env.ethz.ch.

The learning goals of this minor are comprehensive knowledge on components of the cryosphere with focus on the physical background and engineering applications. Depending on the choice of courses, different foci are offered: Achieving knowledge on the physics of glaciers and numerical modelling of the thermomechanics of glaciers, basic knowledge on glaciers and snow/avalanches for engineering applications, and knowledge of the role of the cryosphere in the climate system.

Course list from which students have to achieve at least 10 credits.

- **101-0288-00 Snow and Avalanches: Processes and Risk Management**
  - FS 2 G 3
- **651-1504-00 Snowcover: Physics and Modelling**
  - FS 3 G 4
- **651-4090-00 Quantification and Modelling of the Cryosphere: Spatial and Thermal Processes**
  - FS 2 P 6
- **651-4162-00 Field Course Glaciology (Blockkurs 7.5 Tage)**
  - FS 6 P 3

3.7 Minor in Catchment Management and Natural Hazards

(Predominantly in German)
For advice regarding this minor, students may contact Prof. Hans R. Heinimann, hans.heinimann@env.ethz.ch.

The water channel network is a dominant structure of catchment areas that affects physical, biological and human activities. The scientific-technical revolution of the 19th-century resulted in a split-up of the investigation and management of those areas, represented by several scientific disciplines. The challenge is to reintegrate the scattered analysis and design activities into a more holistic landscape and resource management approach. A more holistic approach aims at analysing and understanding the interactions between geomorphologic, atmospheric, hydrologic, biological and anthropogenic processes, and designing land-use regimes that control hydrologic and geomorphologic processes in a way that minimises the degradation of resources and maximises the resilience of the whole system.

Course list from which students have to achieve at least 10 credits.

- **701-0565-00 Grundzüge des Naturgefahrenmanagements**
  - HS 3 G 3
- **101-1250-00 Wildbach- und Hangverbau**
  - HS 2 V 3
- **102-0293-00 Hydrology**
  - HS 2 G 3
- **651-3525-00 Ingenieurgeologie**
  - HS 3 G 3
- **651-4088-03 Physische Geographie III [Universität Zürich]: Geomorphologie und Glaziologie**
  - HS 1 V 5
- **101-0288-00 Snow and Avalanches: Processes and Risk Management**
  - FS 2 G 3
3.8 Minor in Operations Engineering and Management for Forest and Timber Industries

For advice regarding this minor, students may contact Prof. Hans R. Heinimann, hans.heinimann@env.ethz.ch.

Forest operations engineering and management research aims at (1) understanding the fundamental principles that underlie the behavior of forest operations systems and at (2) developing concepts, methods and tools that support the design, control and management of these systems. The basic research paradigm represents operations systems as flow networks and uses mathematical models to describe its behavior and to evaluate the efficiency, effectiveness and environmental performance of alternate policies, strategies, and practices. The operations core is a system that includes research, design, engineering, production within operating units, networks of information and material flows that tie operating units together, and the development, distribution and delivery of goods and services to customers. A minor in Forest Operations Engineering and Management covers three different aspects of designing, controlling and continuously improving supply chains in the forest sector:

1. Production technology
2. Production management
3. Environmental management

It enables students to understand and apply methods of production and operations sciences.

Production Technology

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Description</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>101-0637-10</td>
<td>Holzstruktur und Funktion</td>
<td>HS</td>
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<tr>
<td>101-0637-20</td>
<td>Holzbearbeitung und -verarbeitung</td>
<td>HS</td>
<td>G</td>
<td>3</td>
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<tr>
<td>101-0678-00</td>
<td>Holzphysik &amp; Holzbasierte Materialien</td>
<td>FS</td>
<td>G</td>
<td>3</td>
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<tr>
<td>363-0448-00</td>
<td>Global Operations Strategy</td>
<td>FS</td>
<td>G</td>
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Production Management

<table>
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<th>Semester</th>
<th>Type</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>363-0445-00</td>
<td>Production and Operations Management</td>
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<tr>
<td>363-0445-02</td>
<td>Production and Operations Management [Additional Cases]</td>
<td>HS</td>
<td>A</td>
<td>1</td>
</tr>
</tbody>
</table>

Environmental Management

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Description</th>
<th>Semester</th>
<th>Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>102-0317-00</td>
<td>Advanced Environmental Assessments</td>
<td>HS</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>102-0317-03</td>
<td>Advanced Environmental Assessment [Computer Lab I]</td>
<td>HS</td>
<td>U</td>
<td>1</td>
</tr>
<tr>
<td>102-0317-04</td>
<td>Advanced Environmental Assessment [Computer Lab II]</td>
<td>HS</td>
<td>P</td>
<td>2</td>
</tr>
</tbody>
</table>

3.9 Minor in Soil-Plant Relations and Land Use

For advice regarding this minor, students may contact Prof. Dr. Ruben Kretzschmar, ruben.kretzschmar@env.ethz.ch.

With this minor, students gain advanced knowledge in various aspects of soil-plant relations and nutrient cycling in natural and managed ecosystems. Courses range from process oriented understanding of plant-soil relations to aspects of land use planning and land use policy. Students choosing this minor should be interested in soils as a natural resource, nutrient cycling in soil-plant systems, and current problems of land use.

At least 6 credit points have to be gained from the list of Block I: Soil-Plant Relations.

Block I: Soil-Plant Relations

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Description</th>
<th>Semester</th>
<th>Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-1681-00*</td>
<td>Element Balancing and Soil Functions in Managed Ecosystems</td>
<td>HS</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>751-3405-00</td>
<td>Chemical Nature of Nutrients and their Availability to Plants: The Case of Phosphorus</td>
<td>HS</td>
<td>G</td>
<td>4</td>
</tr>
<tr>
<td>751-5101-00</td>
<td>Biogeochemistry and Sustainable Management</td>
<td>HS</td>
<td>G</td>
<td>2</td>
</tr>
<tr>
<td>751-3404-00</td>
<td>Nutrient Fluxes in Soil-Plant Systems: The Case of Nitrogen</td>
<td>FS</td>
<td>G</td>
<td>4</td>
</tr>
</tbody>
</table>

* will be offered in autumn semester 2019 for the last time

Block II: Land Use

[All courses with German titles are taught in German.]

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Description</th>
<th>Semester</th>
<th>Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>103-0317-00</td>
<td>Introduction in Spatial Development and Transformation</td>
<td>HS</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>103-0435-01</td>
<td>Landmanagement</td>
<td>HS</td>
<td>G</td>
<td>5</td>
</tr>
<tr>
<td>751-5201-00</td>
<td>Tropical Cropping Systems, Soils and Livelihoods (with Excursion)</td>
<td>HS</td>
<td>G</td>
<td>5</td>
</tr>
<tr>
<td>103-0458-00</td>
<td>Haushaltersiche Bodennutzung</td>
<td>FS</td>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>751-2700-00</td>
<td>Bodenmarkt und Bodenpolitik</td>
<td>FS</td>
<td>G</td>
<td>2</td>
</tr>
</tbody>
</table>
3.10 Minor in Agricultural Plant Production and Environment

For advice regarding this minor, students may contact Prof. Dr. Achim Walter, achim.walter@usys.ethz.ch.

Agricultural plants form the basis for all our food systems and they are currently grown on more than half of the global land area on which plants can thrive. Therefore, their production often takes on a central role in questions of land use, biodiversity, soil degeneration, climate change, biogeochemical cycles, and other environmental issues. The minor in Agricultural Plant Production and Environment conveys in depth knowledge of important crops, grassland systems, plant production methods, cropping systems, and of interactions between agricultural plants and the environment. Students selecting this minor should have a profound interest in plant biology.

At least 6 credit points have to be gained from the list of "Advanced Courses". (All courses with German titles are taught in German).

**Basic Courses**

- 751-3700-00 Ökophysiologie HS 2 V 2
- 751-0280-00 Kulturpflanzen im World Food System FS 2 V 2
- 751-4002-00 Grasslandsysteme FS 2 G 2
- 751-4107-01 Einführung in den Acker- und Futterbau FS 2 V 2
- 751-5000-00 Sustainable Agroecosystems I FS 3 G 2

**Advanced Courses**

- 751-4003-01 Current Topics in Grassland Sciences (HS) HS 2 S 2
- 751-4104-00 Alternative Crops HS 2 V 2
- 751-5001-00 Agroecologists without Borders HS 2 S 2
- 751-5003-00 Sustainable Agroecosystems II HS 2 V 2
- 751-4003-02 Current Topics in Grassland Sciences (FS) FS 2 S 2
- 751-4704-00 Weed Science FS 2 G 2
- 751-4902-00 Moderne Pflanzenschutzmittel – Wirkungsweise, Rückstandsbildung und Umweltverhalten, FS 2 V 2

3.11 Minor in Environmental, Resource and Food Economics

For advice regarding this minor, students may contact Dr. Robert Huber, rhuber@ethz.ch.

The minor in Environmental, Resource and Food Economics provides students with the necessary knowledge and skills to address economic and socio-economic issues related to natural resource management. The minor consists of lectures and seminars on topics such as environmental, resource, agricultural and food economics. As some of the courses deal with advanced topics, basic knowledge in microeconomics is required (as covered in 751-0901-00 "Einführung in die Mikroökonomie", or equivalent courses).

At least 6 credit points have to be gained from the list of Block I. (All courses with German titles are taught in German).

**Block I (Basic Courses)**

- 363-0537-00 Resource and Environmental Economics HS 2 G 3
- 751-0903-00 Mikroökonomie des Agrar- und Lebensmittelsektors HS 2 V 2
- 751-1311-00 Einführung in das Agrarmanagement HS 2 V 2
- 751-1500-00 Entwicklungsoekonomik FS 2 V 3
- 751-1555-00 Empirical Agricultural Economics FS 2 G 3
- 751-1560-00 Produktion, Investition und Risikomanagement in der Landwirtschaft FS 2 V 3

**Block II (Applied Courses)**

- 751-2903-00L Evaluation of Agricultural Policies HS 2 G 3
- 751-2103-00 Socioeconomics of Agriculture HS 2 V 2
- 860-0023-00 International Environmental Politics HS 2 V 3
- 751-1552-00 Agrarische Ressourcen- und Umweltökonomie FS 2 V 2
- 751-2102-00 History of Food and Agriculture FS 2 V 3
- 751-2312-00 Agrarpolitik FS 2 G 3
3.12 Elective Courses

Courses from the entire ETH course catalogue (online) and a number of courses at the University of Zurich can be taken as elective courses.

Courses at other universities [e.g. University of Zurich, University of Bern, EPFL], which cannot be selected through myStudies, must be taken as “exchange courses”/“Mobilitätsfächer” (recognition in the Master’s degree programme only upon approval by the Director of Studies). Students must provide evidence of passing the required performance assessment issued by the university which offers the respective course (title of the course, CP, result/grade of the performance assessment). Students not taking any minors but choosing elective courses instead have various possibilities of gaining credit points.

Each major and minor course can be individually chosen as an elective course. By taking elective courses recommended in the list of the chosen major programme the knowledge gained in the major may be deepened and expanded; by choosing complementary or interdisciplinary courses it may be broadened.

Students who have to fulfil additional requirements are not allowed to count these courses towards the category “Elective Courses”.

Cf. section 8.2: It is also possible to gain the 20 credit points required in the category elective courses in view of the prerequisites for the Teaching Diploma (“Lehrdiplom”) in Biology, Chemistry and Physics or the Teaching Certificate (“Didaktik Zertifikat in Umweltlehre”; language of instruction is German). Some of the lectures for the Teaching Diploma or Certificate can be counted for both the Master’s Degree Programme and Teaching Diploma or Certificate.

For details see → www.usys.ethz.ch/en/studies/teacher-training

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**Especially Recommended Elective Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Semester</th>
<th>CP</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>701-0019-00*</td>
<td>Readings in Environmental Thinking</td>
<td>HS</td>
<td>2</td>
<td>S</td>
</tr>
<tr>
<td>701-1904-00*</td>
<td>ETH Sustainability Winter School</td>
<td>HS</td>
<td>2</td>
<td>G</td>
</tr>
<tr>
<td>363-1065-00</td>
<td>Design Thinking: Human-Centred Solutions</td>
<td>HS</td>
<td>5</td>
<td>G</td>
</tr>
<tr>
<td></td>
<td>to Real World Challenges</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>701-1902-00</td>
<td>Transdisciplinary Case Study</td>
<td>FS</td>
<td>15</td>
<td>P</td>
</tr>
<tr>
<td>101-0437-10</td>
<td>Urban Mobility</td>
<td>FS</td>
<td>2</td>
<td>G</td>
</tr>
<tr>
<td>101-0588-02</td>
<td>Grounded Materials</td>
<td>FS</td>
<td>6</td>
<td>G</td>
</tr>
</tbody>
</table>

* uncertain if offered in autumn semester 2019

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**English for Academic Purposes**

Those Master students who want to improve their English take one or two courses in “English for Academic Purposes”, offered by the Language Center of the University and ETH Zurich is recommended:

- Academic Reading, Speaking and Vocabulary B2  HS/FS  2  G  2
- Academic Reading, Speaking, and Vocabulary B2-C1 HS/FS  2  G  2
- Advanced discussions and vocabulary extension C1-C2 HS/FS  2  U  2
- Presentation Skills B2.2-C1                    HS/FS  1  U  1
- Writing your master’s thesis: Natural science and engineering C1-C2 HS/FS  2  G  2

It is important that students register at the Language Center ("Language Center of UZH and ETH Zurich" → https://www.sprachenzentrum.uzh.ch/en.html) and bring a signed confirmation (to the administration office) after they have passed a course if they wish to receive credits (enrolment via myStudies not possible). These courses can then be accredited as elective courses and are listed on the current transcript (Leistungsblick) and the Academic Record.

For recognition and acceptance of language courses in the category “Elective Courses” (max. 4 CP) offered by the “Sprachenzentrum” (enrolment at the Language Center and via myStudies – if possible – essential!), the following restrictions apply: Courses in English, French, Italian, and Spanish are only accredited from level B2 (advanced) onwards. German language courses are only accredited from level C2 onwards.
4 Professional Internship (Berufspraxis)

The professional internship is a compulsory part of the Master’s degree programme and should last for at least 18 weeks (full-time workload). During the internship, students will learn how to professionally handle environmental issues outside of ETH through their own practical experiences. They should apply the knowledge acquired from their studies. The internship can be completed in Switzerland or abroad, which broadens experience of how environmental problems are addressed in other countries.

Remark: Students who obtained additional requirements have to fulfil these before starting their internship.

Finding an internship position
Students must find the internship themselves. The following resources are available to aid in the search for an internship:

- a platform with current open internship positions → www.intranet.usys.ethz.ch/UMNW/Stellen
- register with addresses of Swiss companies offering internships → www.intranet.usys.ethz.ch/UMNW/berufspraxis/Praxisregister
- Login with a nethz password
- Overview of on-going and previous internships including reports → www.intranet.usys.ethz.ch/UMNW/berufspraxis/Berufspraxisarbeiten
  Login with a nethz password

Further the Internship Coordinator may be consulted to discuss any ideas (during office hours or on appointment; cf. section 9).

Agreement on the content of the internship
For the recognition of an internship as compulsory professional internship, an internship agreement must be approved in advance. The student and the company where the internship will take place prepare and sign an internship agreement on the nature of the internship, especially on the intern’s tasks. The Internship Coordinator and the supporting lecturer at D-USYS (a person from the teaching staff at D-USYS/ETH) then have to approve the agreement with their signatures too. Students should submit their internship agreement to the Internship Coordinator as early as possible.

During the internship, students must register in the Master of Environmental Sciences and apply for a leave of absence, reason for absence: Compulsory Practical Experience. Afterwards, students must enrol in the course 701-1001-00 Berufspraxis/Internship HS/FS P 30

By the end, students must document their internship in a personal report and enclose a professional dossier from their tasks.

Procedure for the compulsory professional internship

Preparation for the internship

Finding an internship position
Duration: appr. 1 – 6 months

Found a position
Preparation of internship agreement

Approval for internship agreement from internship coordinator and supporting lecturer

During the internship

Placement visit by supporting lecturer and occasionally by internship coordinator, or interim reports (internship outside Switzerland)

Finalisation of the internship

Finishing the internship
With the required documents for approval such as a personal internship report

Please consult the websites for more detailed information about the different aspects of the compulsory internship. → www.usys.ethz.ch/internship-envsc
5 Master’s Thesis

The Master’s thesis is a scientific thesis written independently by the student and shall closely reference to the scientific field of the chosen specialisation subject.

Permission to write the Master’s thesis is only granted to students who
- have successfully completed their Bachelor’s studies,
- have fulfilled all additional requirements for admission to the programme,
- have completed at least 32 of the required 40 CP in the core subjects of their specialisation.

The Master’s thesis is evaluated by the supervisor and at least one other expert. The duration of the Master’s thesis is set to maximum 28 weeks (6 months plus 2 weeks). The supervisor sets the starting and submission dates. On request the Director of Studies can extend the deadline if cogent grounds are given.

For projects offered, authorised advisors and further information go to

6 Student Exchange

In the Master’s degree programme in Environmental Sciences, students may obtain credit points (CP) from another university: either a maximum of 20 CP is accredited as part of the elective courses (applicable only to Master students holding a Bachelor’s degree from ETH Zurich) or 30 CP are accredited for a Master’s thesis abroad (applicable to all students).

Students planning to take courses or work on a Master’s thesis during a study period abroad will find further information at
→ www.usys.ethz.ch/en/studies/environmental-sciences/austausch

Students also must obtain approval in advance from the departmental exchange coordinator of the Master’s degree programme in Environmental Sciences (cf. section 9).

Students intending to complete their Master’s thesis at another university are to identify an advisor at D-USYS (“supervisor”) and a tutor at their host university in advance. The regulations are given in the Programme Regulations under
7 Assessments and Master’s Degree

7.1 General

All regulations concerning studies at the ETH are available in the “Rechtssammlung der ETH Zürich” under

The credit system used is based on the European Credit Transfer System (ECTS). Credits are a standard measure for the students’ working time required to reach the educational goals. Calculations are based on a total of 1500 to 1800 working hours per year, equivalent to 60 credits. Thus, 1 credit corresponds to 25 to 30 hours of total work.

Assessments are in the form of written or oral examinations, written reports, oral presentations and active participation (e.g. in field courses, colloquia, seminars). Assessments can be held during the semester, as end-of-semester examinations or as examinations at the end of semester holidays. Details are given in the course catalogue. Both the examinations and the Master’s thesis are evaluated with a grade between one (lowest) and six (highest). Other assessments may also be rated with passed/failed.

Credits are only issued, and always allocated in their full amount, for satisfactory performance according to the requirements stated in the ETH course catalogue. Study performances are considered satisfactory if they receive a grade of at least 4.0 or “passed”. An assessment “failed” can be repeated once.

After each examination session in spring and autumn students have to make sure that their interim academic record in myStudies is complete.

For further information see the Programme Regulations for the Master of Science ETH in Environmental Sciences [Studienreglement 2013 für den Master-Studiengang Umweltwissenschaften, Ausgabe 14.12.2018-4](https://rechtssammlung.sp.ethz.ch/Dokumente/324.1.1002.11.pdf).

7.2 Assessments of the Master’s Programme

The instruction language at the Master’s level is English, however written and oral assessments may be offered in English or German. Students must inform the responsible examiner in writing at the time they register for an examination that they will complete the performance in the language of their choice.

Information about the different types of performance assessments are given on the student portal.

Major Courses

Courses pertaining to the major programme are evaluated by means of a performance assessment. The type and timing of the performance assessments are outlined in the ETH course catalogue.

Minor Courses and Elective Courses

Courses of minors as well as elective courses are also evaluated by means of a performance assessment, which are outlined in the ETH course catalogue.

Professional Internship

The performance will be assessed on the basis of the report(s) by the supervising lecturer and the Internship Coordinator with passed/failed and if approved, 30 credit points will be awarded.

Master’s Thesis

The supervisor as well as at least one co-supervisor (an expert in the topic) will grade the Master’s thesis. The Master’s thesis evaluation form (Master’s thesis evaluation form) states which criteria of the thesis will be evaluated.
7.3 Master’s Degree

Submission of the degree request
The Master’s degree is awarded when a total of 120 credits, in accordance with the regulations for the major chosen and the programme regulations (cf. section 1.2), is reached. Students should then apply to the students’ administration office (Studiensekretariat) for the conferral of the Master’s degree.

Final Academic Record, Degree and Academic Title
Graduates receive a final academic record in German and a transcript thereof in English. While interim academic records contain any evaluated study performance, in the final academic record only courses and performance assessments indicated in the application are listed. Upon request by the student, further performance evaluations can be listed in an addendum to the final academic record. The grade point average on the final academic record is calculated as the weighted mean of the grades listed in the application. The weighting corresponds to the credit points allocated to each course. The grade for the Master’s thesis is weighted as 30. With the final academic record (in German and English), graduated students will receive a Master’s certificate (in German, French or Italian) and a diploma supplement. The diploma supplement gives a short description of all courses (in German and English) attended during the Master’s degree programme, also showing the awarded credits.

The recipient of the Master’s degree is authorised to use the following academic title:
Master of Science ETH in Environmental Sciences
(Abbreviation: MSc ETH Environ. Sc.)

The German academic title is:
Master of Science ETH in Umwelt natur wissenschaften
(Abgekürzter Titel: MSc ETH Umwelt-Natw.)

The French academic title is:
Master of Science ETH en sciences naturelles de l’environnement

The major (Vertiefung) is also mentioned on the Master’s certificate; possible minors (Ergänzung/en) are only listed on the final academic record (in German) and on the certified decree translation (in English).

Diploma Celebration
The graduation ceremony takes place at the end of every year in the Auditorium Maximum (HG F30). Further information is given by the student’s administration office by E-Mail.

8 Educational Possibilities beyond Bachelor and Master

8.1 Doctorate
The Department of Environmental Systems Science and its research institutions offer outstanding conditions for a doctorate: an innovative atmosphere, state-of-the-art equipment and laboratories, and an environment inspiring young scientific talents to be successful. The doctorate involves independent scientific research work supervised by a professor.

Doctoral studies at the ETH Zurich generally take three to four years. On successful completion, candidates are awarded the title “Doctor of Sciences (Dr. sc. ETH Zürich)”. For details and regulations for doctoral studies at the Department of Environmental Systems Science see → www.usys.ethz.ch/en/doctorate

8.2 Teaching Certificate/Teaching Diploma for Grammar Schools
The Department of Environmental Systems Science offers a Teaching Certificate (Didaktik-Zertifikat) in Environmental Studies, which provides graduates with a basic didactic qualification for a broad range of professional activities in the field of education. A Teaching Diploma in Biology, Chemistry or Physics depending on the chosen major can be completed at ETH departments of biology, chemistry or physics. However candidates might be requested to fulfill extensive additional requirements. These Teaching Diplomas provide accreditation to teach at a grammar school (Gymnasium). In all these programmes, the language of instruction is German.

Die nachfolgend beschriebenen didaktischen Ausbildungsgänge können nach dem Erwerb des Bachelor-Diploms begonnen werden:

Didaktik-Zertifikat in Umweltlehre
9 Information and Advice

General Information on studies at the ETH Zurich:

→ www.ethz.ch/en/studies

Director of Studies

Special requests in connection with academic studies,
Permits for deviations from the established regulations and
requests for prolongations of Master’s theses

Prof. Dr. Bernhard Wehrli
Institute of Biogeochemistry and Pollutant Dynamics,
CHN E 19.1, Phone: 044 632 85 05
E-Mail: bernhard.wehrli@env.ethz.ch

Study programme coordinator

Advice and scheduling regarding individual curricula
and admission, Teaching Certificate or Teaching Diploma,
Curriculum planning

Dr. Susanne Lambrecht, CHN H 42.1, Phone: 044 633 60 82
E-Mail: susanne.lambrecht@usys.ethz.ch

Study administration

Administration (processing of e.g. Master’s thesis, Master’s
degree certificates, and performance assessments, Advice
on military and civil service deferrals)

Diana Haller, CHN H 41, Phone: 044 632 53 75
E-Mail: diana.haller@usys.ethz.ch

Coordinator for Professional Internships

Advisory service for students regarding the professional
internship e.g. evaluation and approval of internships

Andrea Funk, CHN H 42.2, Phone: 044 632 25 64
E-Mail: berufspraxis@usys.ethz.ch
Exchange studies

**Departmental exchange coordinator**
*Advice for student exchange (incoming and outgoing)*
Dr. Susanne Lambrecht, CHN H 42.1, Phone: 044 633 60 82
E-Mail: susanne.lambrecht@usys.ethz.ch

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Doctorate

**Advisor and administration regarding a Doctorate**
Madlaina Gartmann, CHN H 47, Phone: 044 632 25 23
E-Mail: phd@usys.ethz.ch

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Study advisor

**Study advisor for Majors and Social and Humanities Sciences**
*They give advice for teaching fields, courses and education referring to their major specifically*

**Atmosphere and Climate**
Prof. Dr. Reto Knutti, CHN N 12.1, Phone: 044 632 35 40
E-Mail: reto.knutti@env.ethz.ch

**Biogeochemistry and Pollutant Dynamics**
Dr. Anouk N’Guyen van Chinh, CHN E 21.2
Phone: 044 632 75 24
E-Mail: anouk.nguyen@usys.ethz.ch

**Ecology and Evolution**
Dr. Dieter Ramseier, CHN G 19, Phone: 044 632 43 78
E-Mail: dieter.ramseier@env.ethz.ch

**Environmental Systems and Policy**
Prof. Dr. Michael Stauffacher, CHN K 78
Phone: 044 632 49 07
E-Mail: michael.stauffacher@usys.ethz.ch

**Forest and Landscape Management**
Florian Knaus, CHN G 75.1, Phone: 044 632 39 87
E-Mail: florian.knaus@env.ethz.ch

**Human Health, Nutrition and Environment**
Prof. Dr. Roland Regös, CHN H 76.2
Phone: 044 632 69 35
E-Mail: roland.regoes@env.ethz.ch

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Social and Humanities Sciences

Dr. Christoph Baumberger, CHN H 73.1, Phone: 044 632 50 54
E-Mail: christoph.baumberger@usys.ethz.ch

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Academic Services

**Registrar’s Office ETH Zurich**
ETH Zurich, Campus Center, HG F 19
Phone: 044 632 30 00
E-Mail: registrar@ethz.ch

**Examinations Office ETH Zurich**
ETH Zurich, Campus Center, HG F 18.1
Phone: 044 632 20 68
E-Mail: exam@ethz.ch

**Student Exchange Office ETH Zurich**
ETH Zurich, Campus Center, HG F 23.1, Phone: 044 632 61 61
E-Mail: exchange@ethz.ch


Opening hours desk for Registrar’s, Examinations and Exchange Office: Mon – Fri, 11:00 – 13:00

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Student Services

**Student Advisory Service and Coaching**
Regula Cinelli ETH Zurich, Campus Center, HG F 69.1
Phone: 044 632 73 24
E-Mail: regula.cinelli@sts.ethz.ch


**Psychological Counseling Services University/ETH Zurich**
ETH Zurich, Campus Center, Plattenstrasse 28, 8032 Zurich
Phone: 044 634 22 80,
E-Mail: pbs@sib.uzh.ch

Student Services

**Financial Aid Office ETH Zurich**

ETH Zurich, Campus Center, HG F 22.1
Phone: 044 632 20 40/20 88
E-Mail: studienfinanzierung@sts.ethz.ch
→ ethz.ch/students/en/studies/financial/scholarships.html

**Disability Advisory Service**

Karin Züst Santschi ETH Zurich, Campus Center, HG F 68.3
Phone: 044 632 35 92
E-Mail: karin.zuest@sts.ethz.ch
→ ethz.ch/students/en/advice/disability-advisory-service.html

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**Association of students at ETH**

**VSETH**

*The VSETH (German: Verband der Studierenden an der ETH, English: Association of students at ETH) represents all students of ETH. It organizes a numerous forms of relief and support regarding the study at ETH Zurich.*

E-Mail: vseth@vseth.ethz.ch
→ vseth.ethz.ch/language/en/mainpage

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**Student Association**

**UFO**

*UFO stand for the German abbreviation Environment and Forestry Student Association (Umwelt- und Forstfachverein). It is one section of VSETH.*

E-Mail: info@ufo.ethz.ch
→ www.ufo.ethz.ch (only German Website)

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**Sport Association**

**Academic Sport Association Zurich (ASVZ)**

*The ASVZ offers all university members an attractive and varied sports program, which offers plenty of opportunities to discover new activities but also includes old favorites. The ASVZ is all about people, the joy of exercise, fitness, work/study-life balance and improving the quality of life.*

E-Mail: info@asvz.ch
→ www.asvz.ch/en/634-welcome-asvz

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**Nightline – We listen to you**

*You can contact us if you have problems or worries. Conversations and messages are confidential.*

Phone 044 633 7777
→ www.nightline.ch/public/en/home
Information

ETH Zurich
Department of Environmental Systems Science (D-USYS)
Advice for Master Students
CHN H 42.1
Universitaetsstrasse 8
8092 Zurich
Switzerland

cng_master@usys.ethz.ch
www.usys.ethz.ch
Phone +41 44 633 60 82 (Mo, Tu, Th, Fr)

Office hours
Monday, Tuesday, Thursday and Friday 1 – 3 pm

Consultation on appointment (by e-mail)

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