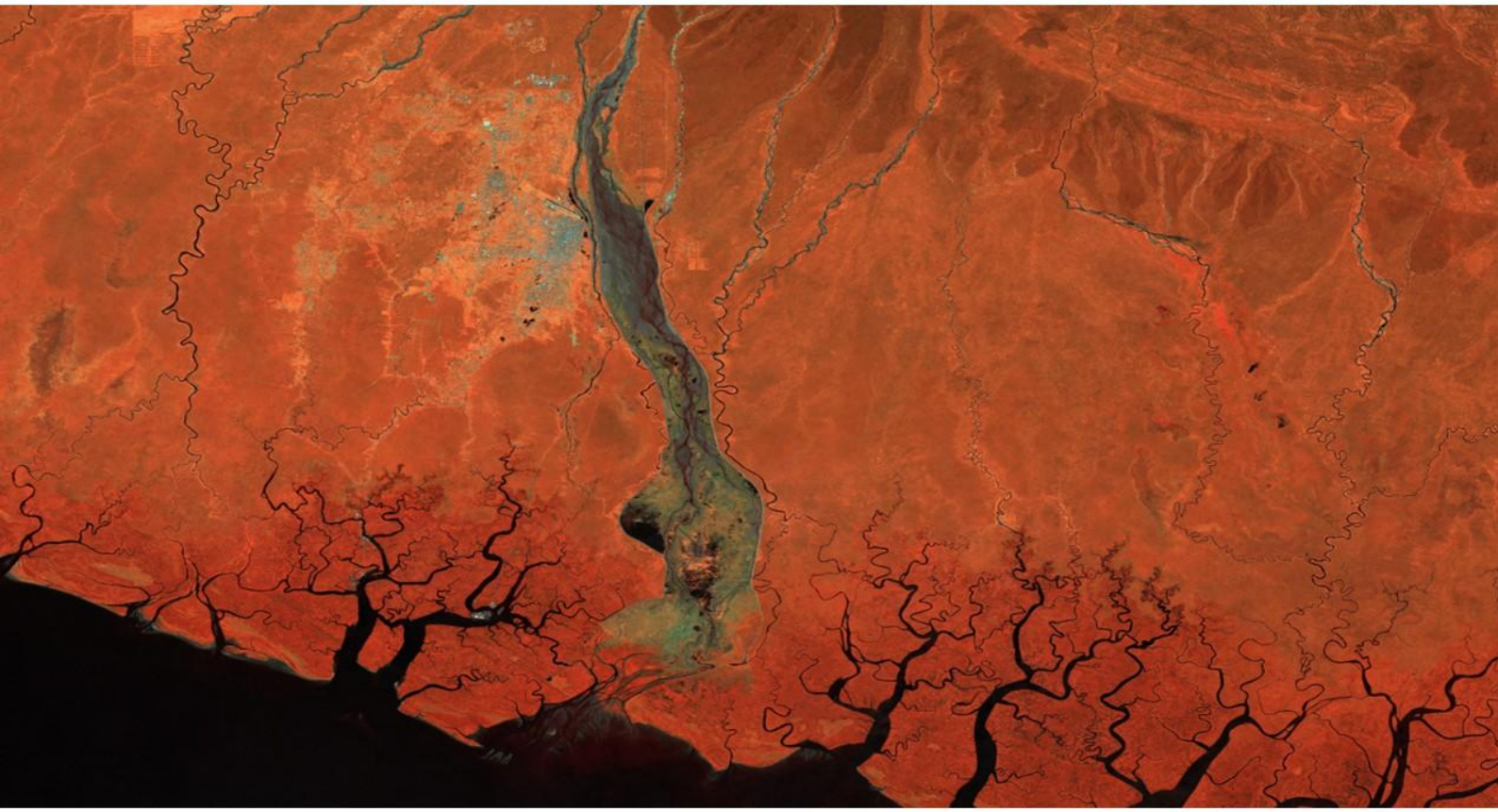
Universität Zürich[UZH]

Department of Geography
Geographisches Institut

Study guide to the Master of Science programme in

Earth System Science



False-colour satellite image of a river delta

Starting Fall Semester 2026
Academic Year 2026/2027

1. Preface

Welcome! We are pleased that you are interested in choosing the Master's study programme in Earth System Science at the University of Zurich.

In this guide ("Wegleitung"), the study programme is explained for students starting their studies in the fall semester 2026. For students who have started their studies before the fall semester 2026, the study guide of the corresponding year (begin of studies) and transitional regulations are relevant. This study guide describes the structure as well as administrative matters of the MSc programme in Earth System Science (ESS). For further questions, the Student Advisory Service of the Department of Geography (GIUZ) is your first contact point:

Contact:

Office	Y25-K-10 Winterthurerstrasse 190 8057 Zurich Universität Irchel (UZH)
Phone	+41 (0)44 635 51 18 (Student Advisory Service)
Email	TEACHING-SUPPORT@GEO.UZH.CH
Website	STUDENT ADVISORY SERVICE GEOGRAPHY AND EARTH SYSTEM SCIENCES

Appointments can be booked via the Student Advisory Services website.

Further information about the study programme and particularly about individual courses can be found on the following websites:

UZH FOR STUDENTS
COURSE CATALOGUE UZH
COURSE CATALOGUE ETH ZURICH

To allow students to efficiently plan their studies, an information event about the Master's programme is held at the end of the Bachelor's programme. For new students at UZH, usually a short introduction event takes place in the week before or the first week of every semester. Details can be found here. For further information, please contact the student advisory service.

More information on the Master's programme in Earth System Science can be found on the website of the Department of Geography:

STUDYING AT GIUZ

Imprint
Student Advisory Service of the Department of Geography
April 2026

2. Earth System Science at the University of Zurich (UZH)

The study programme in Earth System Science (ESS) offers a unique combination of research perspectives. It enables students to understand, observe and describe, analyse and predict interactions and processes in and between different spheres through sound scientific knowledge and a broad expertise. The Master's study programme in ESS allows specialization in individual research fields. Profound knowledge of current research projects is imparted, and critical discussions of socially relevant topics are encouraged. Furthermore, the students' intellectual and communicational skills are promoted.

2.1 Aim of the study programme

- Students acquire basic knowledge of the different spheres of the earth (anthroposphere, biosphere, lithosphere, hydrosphere, atmosphere).
- Students are able to apply approaches from natural and computer sciences to the analysis of current issues in an appropriate manner.
- Students are able to collect data in experiments, describe, analyse, and explain physical observations and to compare them with models.
- Students are able to obtain specific specialist information and basic scientific material in a targeted manner, to structure and interpret it adequately and to present it in a way that is appropriate and understandable at university level.
- Students are capable of efficient teamwork and can organise and motivate themselves independently in groups.

2.2 Educational foci

The study programme Earth System Sciences provides a sound basic knowledge in the following areas:

- **Atmosphere:** Climate systems, atmospheric chemistry and physics
- **Anthroposphere:** Human-environment relations, sustainable development, globalisation
- **Biosphere:** Evolution, biodiversity, ecology
- **Hydrosphere:** Water cycle, hydrological processes, climate impacts on water resources, cryosphere
- **Lithosphere:** Structure of the earth, plate tectonics, earth and climate history
- **Remote Sensing:** Instruments and methods for recording the earth's surface, land use classifications

In addition, basic mathematical and scientific education in mathematics, chemistry and physics is part of the study programme.

3. Occupational fields for earth system scientists

Earth system scientists can benefit from a wide occupational field, ranging from education or academia to (non-) governmental institutes and companies. The educational background of ESS candidates is interdisciplinary, and their skillset allows them to quickly familiarize and develop themselves in any of the fields studied. ESS candidates are particularly strong in linking processes and studying the large scope of systems of which these processes are part of. This is essential for contemporary issues like environmental change or food and energy production. More generally, earth system scientists can work on a broad range of cases where humans interact with their environment and, as such, with our planet.

Earth system scientists usually find jobs quickly after their graduation, both in Switzerland and abroad. Thanks to the social importance of topics such as environmental protection, natural hazards and support of the growing human population, the jobs for earth system scientists are interesting and challenging. Even if your ambition is outside of common ESS applications, the strong analytical background that the ESS curriculum offers is very attractive for potential employers.

4. MSc studies at the UZH Faculty of Science

The courses at the Faculty of Science ("Mathematisch-naturwissenschaftliche Fakultät", MNF) are structured into Bachelor's and Master's degrees. The Master's degree is based on previous knowledge acquired during the Bachelor's programme. Further information about our Bachelor's programme is provided in the **BACHELOR'S DEGREE STUDY GUIDE (GERMAN ONLY)**.

The Master's programme conveys advanced scientific knowledge and enables students to carry out independent scientific work. The structure of the Master's programme at GIUZ is described below.

After obtaining a Master's degree in Earth System Science, excellent students can strive to acquire a PhD degree. This depends on the availability of funds and the acceptance into a promotion programme and/or finding an advisor willing to lead a dissertation project.

Moreover, a Master's degree is the fundamental requirement for acquiring the teaching diploma for high schools. The didactical education is provided by the Institute of Education (IfE) of the UZH.

Within the study programme "Master of Science in Earth System Science", students can specialize in a specific field of ESS. For a successfully completed Master's programme in ESS, the diploma „Master of Science in Earth System Science" (MSc UZH in Earth System Science) is awarded.

4.1 Enrolment

Enrolment is necessary to follow a study programme at UZH. All students must be enrolled as long as they require services from the University. These services include participation in courses, the claim for counselling and support, the use of libraries and IT services, taking exams, as well as the validation of degrees. Semester fees have to be paid up to and including the semester in which the Master's exam is taken and the validation of the graduation took place, even if no other modules are taken that semester.

Registration

Before the first matriculation, students need to register at the Student Administration Office of UZH. This is also the case after a deregistration due to the interruption of studies. The requirements for admission to the University of Zurich are explained here:

APPLICATION AND ADMISSION

Application deadlines:

- Fall Semester: 30th of April
- Spring Semester: 30th of November

The enrolment is automatically renewed every semester through the online semester enrolment tool at:

SEMESTER ENROLMENT

STUDY START AND REGISTRATION

4.2 Begin of studies and study duration

Generally, the beginning of Master's studies is in the fall semester. If students begin their Master's study programme in the spring semester, they may need to consider certain preconditions for modules (e.g. module B is only bookable after completion of module A). However, a start in the spring semester is easily feasible.

The standard study duration for MSc programmes is three or four semesters. After studying 12 semesters, the semester fee will be doubled. The Faculty Board might permit exceptions upon handing in a justified request. In any case, before a student completes 12 semesters, they should contact the student advisory service to discuss the further course of studies.

Further information can be found on p. 1 of the Ordinance on Tuition Fees at the University of Zurich/ **VERORDNUNG ÜBER DIE STUDIENGEBÜHREN AN DER UNIVERSITÄT ZÜRICH (GERMAN ONLY)**.

4.3 The credit-point system (ECTS credits)

Every degree programme at UZH uses the principle of the European Credit Transfer System (ECTS). A Master's degree consists of 90 or 120 ECTS credits (if a minor is added). For all coursework, students get ECTS credits based on an official assessment. The following principles apply:

- ECTS credits are awarded only after an official assessment.
- One ECTS credit corresponds to a workload of 25-30 hours, which includes lectures and time for individual work (self-study, solving exercises, preparation for exams, etc.).
- 30 ECTS credits can be gained per semester in full-time study.
- Only whole ECTS credits can be obtained.

Students have online access to their transcript of records (overview of all passed and failed modules) at any time. The student affairs office of the faculty needs to be informed about any discrepancies within four weeks after a module has ended.

TRANSCRIPT OF RECORDS

4.4 Structure

The degree programmes at the MNF are structured into Bachelor's and Master's degrees (Bachelor of Science: BSc; and Master of Science: MSc). For the enrolment in a Master's curriculum, a Bachelor's degree in geography or a similar subject is required. The Master's programme provides in-depth scientific education and prepares candidates for autonomous scientific work. The structure of the Master's programme is explained below.

The courses of the Master's study programme are structured into compulsory modules, core elective modules and elective modules. Students can decide for themselves which and how many modules they would like to book and complete each semester. Most modules are taught during one semester (fall or spring), however, some modules cover two subsequent semesters. In addition, some modules require the (successful) completion of other modules. This and further information on individual modules are provided in the online course catalogue.

UZH COURSE CATALOGUE

The MSc degree also forms the basis for pursuing a teaching education for high school ("Lehrdiplom"). The didactical education is provided by the Institute of Education (IfE) of UZH. This track requires excellent knowledge of the German language and a tailoring of the MSc curriculum to modules that are compulsory for the teaching diploma.

TEACHING DIPLOMA

INFORMATION ON THE TEACHING DIPLOMA (GERMAN ONLY)

4.5 Structure of major and minor

The Bachelor's (180 ECTS credits) and Master's study programmes (90 or 120 ECTS credits) at the Faculty of Science (MNF) are divided into major and minor subjects. Within the Master's programme (90 ECTS credits), no minor is included. Nevertheless, an additional minor (30 ECTS) can be completed if the study programme is extended to 120 ECTS credits.

At the Faculty of Science (MNF) and ETH Zürich (ETH), a new minor can be started at the Master's level. At other faculties, a minor at the Master's level may require a certain minor at the Bachelor's level. A list of all major and minor subjects of UZH can be found on the following website.

UZH DEGREES

4.6 Compulsory, core elective and elective modules

The study programme includes three different types of modules: compulsory, core elective and elective modules. Modules can contain one or more course types such as lectures, exercises, seminars or field trips. Every module is completed by an assessment. The type of assessment depends on the module and is published in the online course catalogue. There are three different kinds of modules:

- **Compulsory modules** are mandatory for all students of a certain study programme. Students who fail the assessment of a module can repeat it once. If the repetition results in a failure, the student is excluded from all study programmes, which contain this module as a compulsory module.
- **Core elective modules** are modules, which can be chosen from a given list. If a student fails the assessment of a core elective module twice, the module can be replaced by another core elective module (that needs to be passed).
- **Elective modules:** are modules, which can be selected freely. Elective modules can be substituted without restrictions.

4.7 Module booking

Information about modules can be found in the online course catalogue ("Vorlesungsverzeichnis"), see links below. The general structure of a curriculum is defined in the study guide, but the students can compose individual schedules by themselves.

MODULE BOOKING UZH

HOW TO BOOK MODULES UZH

After having paid the semester fees, it is possible to book modules online. The faculty's deadlines must be considered. It is recommended to book modules at your earliest convenience. For the MNF, the online booking tool opens around five weeks before the lecture period. Booking modules is usually possible until one week after the start of lectures, however, some modules need to be booked earlier. A deregistration of modules at the MNF is usually possible until the first week of the semester.

BOOKING AND CANCELLING MODULES

Module booking ETH Zürich

Modules at ETH must be booked separately. This requires prior registration as a "special student" at ETH, which must be confirmed each semester. Afterwards, ETH modules can be booked directly online via myStudies.

MODULE BOOKING ETH ZURICH: REGISTRATION AS SPECIAL STUDENTS UZH

MYSTUDIES ETH ZURICH

4.8 Assessments

Registration for Exams:

With the booking of a module at UZH, students are automatically registered for the assessment of the respective module. In most cases, you can unsubscribe from the module, including the exam, without specifying any reason within the first weeks of the lecture period, but check the course catalogue for specific module deadlines. A deregistration after the cancellation deadline is only possible upon submission of a medical certificate or a written request. If students are ill on the day of the examination, they must apply for cancellation within 5 working days of the examination and hand in a medical certificate (doctor's note).

ASSESSMENTS AND EXAMS

Applications are made through the online student portal. Afterwards, missed exams (no-shows) will be graded as failed. In the final diploma, only passed assessments will be listed.

LAUNCHPAD STUDENTSERVICES

For modules at ETH, the exam registration has to be carried out separately. Depending on the type of examination, a deregistration is possible until shortly before the exam.

Students have online access to their transcript of records (overview of all passed and failed modules) at any time.

TRANSCRIPT OF RECORDS

Grading of Exams

The module coordinator is responsible for assessments. The form of the assessment – written exam, assignments, or other tasks – is communicated in the course catalogue. They can be graded (1-6) or marked with a pass/fail.

At UZH, you can see the results in your account after about 4 weeks. Afterwards, the Faculty Board validates the results before they become final. You have the right to see the graded exam and to consult the teacher(s) who graded the exam. The date and time will be communicated by the teacher or by the secretary.

At ETH, the results are first validated and then disseminated via myStudies. At a later stage, the results are automatically communicated to UZH and listed for your degree.

MYSTUDIES ETH ZURICH

Regulations for repeat examination

The regulations follow those of the institute that offers the module, i.e. the UZH Department of Geography or the ETH Department of Earth Science. Usually, exams can be repeated once for every module. After two failed attempts, the respective module cannot be booked anymore. In the unfortunate case of two failed attempts for a compulsory module, all curricula which require that specific module cannot be continued. If a student fails a core elective module at the repeat examination, it can be replaced once by another core elective module, also with the possibility to repeat the exam once. Elective modules can be replaced without constraints. After a failed module, the students need to register for the repeat exam. The application for the repeat exam is binding, and it is not possible to unsubscribe. Students can also opt to repeat the entire module.

The described regulations are also applicable to the Master's exam. A one-time repetition of the Master's thesis, with a new topic, is possible.

4.9 Mobility

It is possible to spend one semester at another university. This must be discussed with, and approved by, the Student Advisory Service of the Department of Geography. The host university must be recognised by UZH, and the modules taken must fall within the scope of the Geography curriculum. Credits obtained abroad may be counted towards the elective modules of the Master's degree and, under certain conditions, towards compulsory and core elective modules (see the section chapter 4.6).

Overall, at least 60% of the 90 ECTS credits must be completed through UZH modules. Please note that modules taken at ETH cannot be counted towards this requirement. For this reason, the Geography curriculum allows for only one exchange semester. Exceptions may be granted by the Faculty Board upon submission of a written request. Studying at another university in Switzerland or abroad is a very exciting and valuable experience. Furthermore, it offers the possibility of improving a foreign language. All necessary information about studying abroad can be found on the website of GIUZ. The student advisory service supports students in planning mobility stays at other universities.

Please note: Applications must be submitted until 15 January for the following academic year (autumn to autumn!). This means that the registration deadline is the same for students who wish to take up a mobility stay in the spring or autumn semester.

EXCHANGE PROGRAMS

4.10 Degree

The diploma certificate is written in German and English. It lists the weighted average of the grades, which is calculated following the study regulations. If applicable, separate grades are listed for the major and for the minor subject. A list with all completed modules with the ECTS credit points is attached, as well as a "Diploma Supplement" which summarizes general information about the educational background in Switzerland and particularly at the University of Zurich and about the specific MSc curriculum.

The Master's degree does not automatically get issued upon completion of all necessary ECTS credits. An online request has to be submitted by the student to obtain the Master's degree. If all requirements are met, the corresponding title will be validated at the next meeting of the Committee for Student Affairs by the Faculty of Science, but only if the application was submitted at least four weeks before the meeting. Otherwise, the diploma will be issued after the subsequent meeting.

MASTER'S DEGREE ESS

IMPORTANT DEADLINES

4.11 Transfer of additional credits

It is possible to credit up to a maximum of 10 additional ECTS credits to each study unit (major and minor). This can include modules of UZH and ETH, as well as language courses of the language center of UZH and ETH. A maximum of 4 ECTS credits can be credited for language courses (BSc and MSc together). Only full modules qualify (i.e. not individual courses or half modules), and compulsory modules cannot be excluded from the calculation.

The additional ECTS credits are listed in the final transcript of records as "academic achievement not counted towards degree" but are not included in the calculation of the final average grade.

4.12 Official regulations for Master's degrees at MNF

The following regulations are (legally) binding:

- The **framework of academic regulations** ("Rahmenverordnung") contains the general regulations for all BSc and MSc studies at the Faculty of Science at the University of Zurich.
- The **study regulations** ("Studienordnung") contain information about the individual study degrees at the MNF. This concerns for example modules, exams and credit points.
- This **study guide** ("Wegleitung") provides practical information about the study programs in Geography and Earth System Science at the Department of Geography.

Both the framework of academic regulations and the study regulations are published on the MNF website:

FACULTY OF SCIENCE REGULATIONS

4.13 Reasonable adjustments for students with disabilities or chronic illnesses

The Disability Office at UZH supports students with disabilities or chronic illnesses and provides individual guidance on accessibility and equal opportunities. Through reasonable adjustments for students (NTA), students can request accommodations such as extra exam time or alternative exam formats. The NTA must be actively applied for: after consulting with the Disability Office and submitting medical documentation, a report is prepared, which forms the basis for submitting the application to the faculty within the deadlines. The faculty then decides on the specific measures.

UZH DISABILITY OFFICE

REASONABLE ADJUSTMENTS FOR STUDENTS WITH DISABILITIES OR CHRONIC ILLNESSES (NTA)

5. The MSc programme in Earth System Science

5.1 General information

Earth system scientists contribute to the comprehension of interactions and occurrences in various earth spheres. They can observe and describe, analyse and predict such interactions due to their ability to think in an interconnected way. For example, they can describe and analyse correlations between forest fires and climate extremes or between rising sea levels and glacier melting. Their appreciation of past, current, and future processes plays a decisive role in this context.

In the Master's programme, students have a lot of flexibility to design their own studies. This freedom requires responsibility, motivation and independence. These assets are valuable, even critical, in your future career and contribute to the unique profile of interdisciplinary and independent thinking and working as earth system scientists. The MSc committee (the scientific coordinator ESS and the supervisor(s) of the Master's thesis) help and support you in designing and successfully completing your personal MSc programme. This section provides an overview of the ESS Master's programme, including a general overview, admission matters, mobility and options to pursue a teaching degree.

If you apply for the ESS Master's from outside of UZH, you must submit a motivation letter, your CV and the full overview of your BSc degree in the online admission procedure. For details, see **Admission to the Master's Programme.** It is possible to start in September (fall semester) or in spring (spring semester). In the case of admission with additional requirements, you can start with those modules anytime. You should prioritize your requirements, and at latest, you have to finish them before starting the MSc Thesis.

The MSc programme is almost exclusively taught in English. Few modules can be offered in German but none of these are compulsory.

5.2 Structure

The next pages show the general structure of the Earth System Science Master's programme. Students can choose between a 30 ECTS credits and a 60 ECTS credits Master's thesis. This decision must be made at the beginning of the Master's study, as it influences the general structure of the study programme.

The Master's curriculum in ESS allows for some flexibility for the students. In this Master's programme, a specialization in a system is possible, but cannot be mentioned on the diploma. Independent of the system you choose, the diploma will have "Master in Earth System Science" as the title. The module list will, of course, demonstrate the focus you chose. The systems that can be focused on are:

Geo-Biosphere system

- Geology
- Geochronology
- Soil Science
- Palaeontology

Human-Environment system

- Human Geography
- Natural Risk Analysis
- Environmental Politics
- Sustainability and Resources

Hydro-Atmosphere system

- Hydrology
- Glaciology
- Atmosphere and Climate Science

Modifications to the suggested courses in the systems (see chapter 5.3), e.g. substitution of modules, may be possible and can be discussed with the scientific coordinator. The ESS Master's programme is very interdisciplinary. It requires and enables candidates to study more than one focus system. The curriculum does not support a minor within the nominal study load of 90 ECTS credits. An additional minor can, however, be taken, but it extends this study load by 30 ECTS credits.

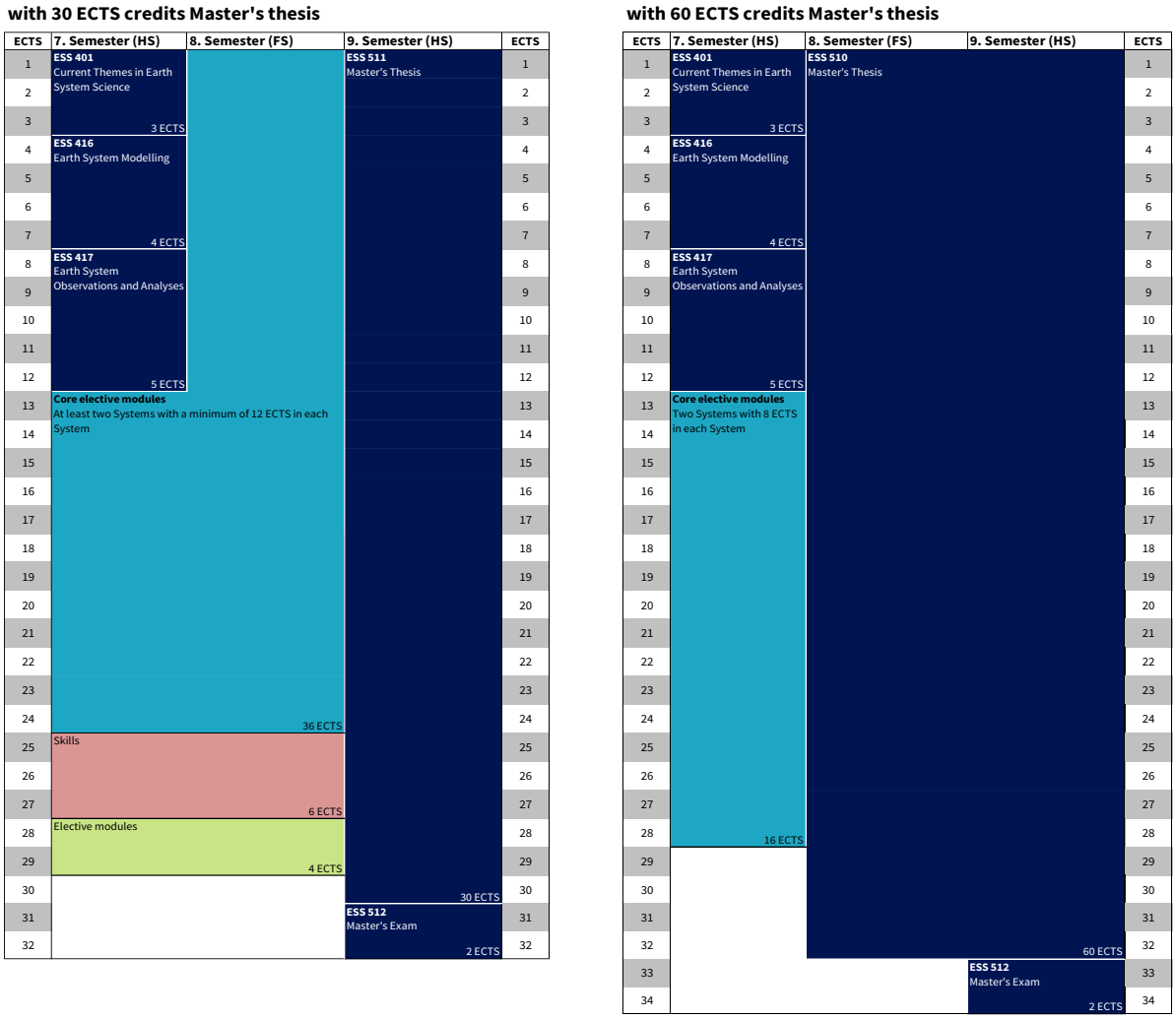


Figure 1: Structure of the Master's programme in ESS

5.3 Personal study plan

The ESS Master's programme is very flexible, in the sense that you can, with few constraints, determine the study focus yourself: Are your interests in the interface between the geosphere and biosphere, or rather in the relation between humans and the environment, or the hydrosphere and the atmosphere? You can tailor your Master's programme to match your interests.

When you have been admitted to the curriculum, among the first tasks is to prepare a personal study plan. Please send your personal study plan to the Teaching Team to discuss it with the scientific coordinator of the curriculum. If you choose the 60 ECTS credits Master's thesis (which is only possible in the research areas of Physical Geography and Remote Sensing), the personal study plan also has to be discussed with the supervisor of the thesis. Please start booking the modules that you plan to take in your first semester as soon as possible, even before approval. You can always cancel or change. Contact the scientific coordinator for a short discussion of your study plan in your first semester and again if you plan substantial changes.

Please note that UZH modules must cover at least 60% of all credit points of the ESS master's programme (i.e., at least 54 ECTS credits) to obtain the ESS MSc degree.

5.4 Applying for the Earth System Science Master's

The UZH BSc in Earth System Science grants unrestricted access to the ESS MSc curriculum. Please register for the Master's in time. Other scenarios are outlined below.

With any ESS-related Bachelor's degree from a recognized academic institution, you can apply for the ESS Master's. Admission to the programme depends on your academic record and may require taking BSc modules in natural science (physics, math, chemistry, biology) or any of the ESS skills and domains (remote sensing, GIS, physical geography, geology). These credit points are in addition to the 90 ECTS credits of the Master's.

The list of BSc modules to be taken is tailored to your background and provided during the application procedure (indication of restriction see table below). Please note that most BSc courses at UZH and ETH are only offered in German. Non-German speakers may have to finish equivalent modules at their home institute or another recognized university.

The information given here is an indication; please contact the Student Advisory Service with your specific case. An official assessment is only given at the time of admission. The final list of additional requirements depends on the choices during your Bachelor's curriculum and is provided during the application procedure.

The following modules (or equivalents) are required for students applying to the ESS Master's. Note that this list may be subject to change and that the final additional requirements are tailored to the applicant's background.

Modules or equivalents required for the ESS Master at GIUZ

Code	ECTS	Semester	Title	Language
ESS 111	6	HS	Dynamic Earth I: Geology	German*
SDS 210	5	FS	Programming with Spatial Data	English
GEO 121	5	FS	Physical Geography II:	German*
GEO 123	5	FS	Geographic Information Science and Remote Sensing II: Introduction to Cartography and Geovisualisation	English
EEE 102	5	FS	Introduction to Ecology	English
PHY 118	5	HS	Physics I for natural sciences	English
CHE 170	4	HS	Basics in Chemistry for natural sciences	German*
MAT 182	6	HS	Analysis for natural sciences	German & English

FS = Spring Semester, HS = Fall Semester

*This course is taught in German, for non-german speaking students a replacement course in English will be assigned whenever possible.

If you apply for the ESS Master from outside UZH you must submit a motivation letter, your CV and the full overview of your BSc degree in the online admission procedure.

ADMISSION TO THE MASTER'S PROGRAMME

ADMISSION REQUIREMENTS

You can start either in the fall or in the spring semester. In the case of admission with additional requirements, you can start with those modules anytime. The MSc programme is almost exclusively taught in English. A few MSc modules can be offered in German but none of those are compulsory.

6. Structure and content of the MSc programme

6.1 General

The curriculum covers 90 ECTS credits and contains compulsory, core elective modules and additional elective modules. Students can choose between a 30 ECTS credits and a 60 ECTS credits Master's thesis. This decision has to be made at the beginning of the master's studies, as it influences the general structure of the study programme.

30 ECTS credits thesis (ESS 511)

The general structure can be divided into compulsory ESS modules, including the Master's thesis and exam (44 ECTS credits), core elective systems (36 ECTS credits), skills (6 ECTS credits), and elective modules (4 ECTS credits).

60 ECTS credits thesis (ESS 510)

The general structure can be divided into compulsory ESS modules, including the Master's thesis and exam (74 ECTS credits), and core elective systems (16 ECTS credits). The 60 ECTS credits thesis is only possible in the research areas of Physical Geography and Remote Sensing.

6.2 Compulsory modules

Code	ECTS	Semester	Title
ESS 401	3	HS	Current Themes in Earth System Science
ESS 416	4	HS	Earth System Modelling
ESS 417	5	HS	Earth System Observations and Analysis

FS = Spring Semester, HS = Fall Semester

The main part of the Master's programme consists of synthesising the knowledge and skills students have learned and applying them to current scientific issues. This is achieved by three compulsory courses, the Master's thesis (ESS 510 or ESS 511), and the Master's exam (ESS 512).

6.3 Core elective modules

The three core elective systems, Geo-Biosphere, Human-Environment, and Hydro-Atmosphere, determine the focus of your Master's curriculum. Depending on the scope of the Master's thesis (30 or 60 ECTS credits) a different number of courses must be completed within the core elective systems.

30 ECTS credits thesis (ESS 511)

Students must choose at least two out of three systems. In each chosen system, a minimum of 12 ECTS credits must be obtained. In total, 36 ECTS credits must be obtained in the different systems.

60 ECTS credits thesis (ESS 510)

Students must choose two out of three systems. In each system, at least 8 ECTS credits must be obtained. Each system consists of core elective modules listed in the following sections. This means that you can shape this part of the curriculum not only by selecting your preferred systems but also by selecting the preferred modules within the system. As such, you have a lot of freedom to tailor the curriculum to your interests. Due to the great number of modules across different departments, the list may contain inaccuracies. *For the modules you choose, please check the listed information in the course catalogue!*

In case of a 30 ECTS credits thesis, any surplus of credit points from core elective system modules may count towards the elective modules. All modules must be offered by UZH or ETH, and the scientific coordinator must approve your suggestion. The latter also holds for "mobility modules" in case you study a semester abroad.

Geo-Biosphere System

Code	ECTS	Semester	Title
ESS 841	3	HS	Analyzing the plant-soil system: Theory
ESS 842	6	FS	Analyzing the Plant Soil System: Practice
GEO 417	3	HS	Environmental archives and age determination I*
GEO 418	3	FS	Environmental archives and age determination II*
GEO 463	6	HS	Currents Challenges in plant-soil systems
GEO 820	2	FS	Stable isotopes in ecosystem science
BIO 148	3	FS	Introduction to Palaeontology (if not available: BIO 274 (1 ECTS credit) as alternative)
EEE 311	6	FS	Remotely Sensing the Basis of Biodiversity
EEE 321	6	FS	Ecological Networks
EEE 330	6	HS,b	Population Ecology
EEE 334	6	HS,b	Biodiversity from Species to Landscape Scale (Remote Sensing)
651-4041	3	HS	Sedimentology I: physical processes and sedimentary systems
651-4044	3	FS	Micropalaeontology and Molecular Palaeontology
651-4070	5	FS,ir	Landslide analysis
751-5118	2	FS	Global Change Biology

*Modules GEO 417 and 418 must be taken together. The ECTS credits for GEO 417 are only awarded upon successful completion of module GEO 418 in the following semester (spring term).

Human-Environment System

Code	ECTS	Semester	Title
GEO 423	6	HS	Political Geography
GEO 425	6	FS	Political Ecology: From Critique to Transformation
GEO 433	6	FS	Global Economic Geographies of Agriculture and Food System
GEO 805	3	HS,b	Natural hazards and risk assessment in mountain regions
GEO 835	3	FS	Geography of Sustainability Transitions
GEO 837	3	HS	Geographies of Environmental Governance
GEO 856	3	FS	The high-mountain cryosphere: processes and risk
GEO 857	3	FS	Snow and Avalanches: Processes and Risk Management
EEE 330	6	HS,b	Population Ecology
EEE 333	6	FS	Conservation Science and Practice of Swiss Amphibians
EEE 351	3	FS	Conservation Biology
701-1317	3	FS	Global Biogeochemical Cycles and Climate
701-1651	6	HS	Environmental Governance
860-0023	3	HS	International environmental politics

FS = Spring Semester, HS = Fall Semester, b = Block course

Hydro-Atmosphere System

Code	ECTS	Semester	Title
GEO 411	6	FS,ir	Modelling of the Cryosphere
GEO 471	6	FS	Hydrological field measurements and calculations (offered every two years)
GEO 475	6	HS	Hydrological Modelling
GEO 815	3	HS	Quantification and modelling of the Cryosphere
GEO 851	3	HS	Glacier Mass Balance Measurements and Analysis
GEO 856	3	FS	The high-mountain cryosphere: processes and risk
102-0468	3	HS	Watershed Modelling
651-4023	4	HS	Groundwater
651-4057	3	HS	Climate history and paleoclimatology
701-0412	3	FS	Klimasysteme (German)
701-1228	4	FS	Cloud Dynamics
701-1232	3	FS	Radiation and climate change
701-1252	3	FS	Climate Change Uncertainty and Risk

FS = Spring Semester, HS = Fall Semester, ir = irregular

6.4 Skills

Skill modules with 30 ECTS credits thesis

In the skills block students have to take courses for at least 6 ECTS credits from the following list:

Code	ECTS	Semester	Title
GEO 877	3	FS	Spatial Algorithms
STA 120	5	FS	Introduction to Statistics
STA 433	2	FS	R programming (if not available: BIO 369 (3CP) as alternative)
EEE 352	4	HS	Contemporary analysis for ecology

FS = Spring Semester, HS = Fall Semester

More than 6 ECTS credits can be selected, in which case the surplus can count towards the elective modules.

Skills with 60 ECTS credits thesis

With a 60 ECTS credits thesis the acquisition of needed skills lies in the responsibility of the students and is decided in consultation with the supervisor of the Master's thesis. Courses completed in this block will not be credited for the diploma.

6.5 Elective modules

30 ECTS credits thesis (ESS 511)
Within the 4 ECTS credits in elective modules, you can book any module from the core elective systems or any other module that is a reasonable addition to your study programme. Non-scientific modules also qualify, e.g. courses of the language centre of UZH and ETH. A maximum of 4 ECTS credits for language courses can be credited (Bachelor's and Master's together). Sports courses do not qualify.

From the GIUZ department

- Core elective modules, which are not already taken as such
- Modules of the Minos Spatial Data Science (With the module code SDS; SDS 210 is a compulsory module in the BSc programme)
- Elective modules of the department
- Additional field trips

Other subjects
The whole offer of UZH and ETH, primarily on Master level. Subject to certain restrictions by the responsible field or instructor.

Internship
See information below (chapter 6.5)

When choosing elective modules, the following points must be considered:

- Modules can have specific prerequisites that are defined in the course catalogue.
- The content of your elective modules should support your individual study goals.
- Sports courses cannot be credited as elective modules.
- Modules at ETH have to be booked at ETH via myStudies.

60 ECTS credits thesis (ESS 510)
There are no elective modules.

The following elective modules are offered by the Department of Geography; this represents a selection only and is not an exhaustive list.

ECTS	Module title	Type	Semester	Assessment
1	GEO 717 Google Earth Engine	BL	FS	SA
1	GEO 802 Data Information Literacy	BL	HS	SA
3	GEO 808 Political Economy: Space and Capital in the 21st Century	SE	FS	SA
1	GEO 812 Getting started with R for spatial analysis	BL	HS	-
6	GEO 818 Dendro-Ecology	VL, BL	HS/FS	SA, PP, SA
1-3	GEO 7xx Modules with integrated field trips	E	HS/FS	SA

FS = Spring Semester, HS = Fall Semester

6.6 Master's thesis and exam

The Master's thesis is the proof of your ability to work scientifically. You design the thesis yourself with the support of a supervisor of your choice. During the Master's programme, you can approach any lecturer and ask for thesis opportunities. You must write your thesis within one of your chosen core elective systems, and you must consider interactions between at least two Earth spheres.

The acquisition of needed skills for the successful completion of the thesis lies in the responsibility of the student and is not credited separately. The needed skills have to be discussed with your Master's thesis committee at the beginning of the Master's studies and have to be acquired either before or during the Master's thesis.

30 ECTS credits thesis (ESS 511)

The thesis covers 30 ECTS credits (six months full-time) and must be completed within 12 months. The Master's exam (next section) takes place shortly after handing it in. The thesis and exam are graded separately and passed if the grade is 4.0 or higher. In the event of an insufficient grade, a new thesis with a different topic must be written.

60 ECTS credits thesis (ESS 510)

The 60 ECTS credits Master's thesis has to be completed within one and a half years (18 months) and is only possible in the TSAs Physical Geography and Remote Sensing. The Master's exam (next section) takes place shortly after handing it in. The thesis and exam are graded separately and passed if the grade is 4.0 or higher.

A 60 ECTS credits thesis is meant to be more research-oriented than a 30 ECTS credits thesis and is recommended for students willing to publish a scientific paper based on their thesis. Furthermore, it is a good option for students who are considering doing a PhD after their master's studies. The 60 ECTS credits thesis is only possible in the research areas of Physical Geography and Remote Sensing.

The Master's exam

The Master's exam (ESS 512) is a compulsory part of the MSc thesis (ESS 510 or ESS 511). The exam usually consists of an oral presentation of your thesis work and an oral examination by a committee consisting of supervisors and an external expert. It tests the familiarity with your thesis subject and the capability to synthesise and apply the knowledge. For the Master's exam, the regulations listed in the information sheet are to be followed. Unsubscribing is possible until two weeks before the exam date, but only in consultation with your thesis supervisor.

The Master's exam is passed when the Master's presentation and the disputation together are graded with at least a 4.0. A failed Master's exam can be repeated once. If the repetition is insufficient as well, no Master's degree can be obtained at the Faculty of Science anymore.

More information can be found on the information leaflet about the Master's thesis and the Master's exam on the webpage

MASTER'S THESIS AND EXAM

TIMETABLE MASTER'S THESIS AND EXAM

Writing the thesis at UZH or at ETH Zurich

ESS is a programme at GIUZ (UZH), and the thesis can be written at any of the groups within the Department of Geography that are involved in the ESS curriculum. Depending on your focus, topics at ETH or other UZH faculties may be of special interest to you. It is possible to take up such a topic and their lecturer can act as supervisor for your thesis.

However, the supervision team needs to be chaired by a person with promotion rights at UZH GIUZ, and the thesis must be defended at UZH. Once you have defined a topic and found a supervisor, you need to write a short proposal and hand in all the other necessary documents on GEO Leangate. After that, make sure to register for the Master's thesis module (ESS 510 or ESS 511) and the Master's exam (ESS 512).

GEOLEANGATE

6.7 Field trips

The GIUZ publishes an overview of elective modules and MSc core elective modules with field trips on its website. Within the elective area, additional external field trips may also be taken, offered by UZH Alumni Geo, ETH Zurich, and other geography institutes at various universities in Switzerland and abroad.

For GEO-7xx modules with integrated excursions, there are no restrictions regarding credit recognition within the elective area.

Field trips Website GIUZ
UZH Alumni GEO Field trips

Recognition of external field trips

One day of excursion corresponds to 0.5 ECTS credits; however, only whole ECTS credits are awarded. For multi-day excursions, a maximum of 1 ECTS credit (equivalent to 2 days) can be recognised.

Credits for field trips are awarded based on confirmation of participation. The form "Confirmation of Field trip" can be downloaded from the GIUZ website under "Downloads / Guidelines". This form must be submitted online no later than the end of the last semester of the Master's programme.

Downloads Forms
Submission for Transfer of Credits

Field trips at ETH Zurich (Earth Sciences)

The range of Earth Sciences excursions can be found on the ETH Zurich website.

Field trips ETH Zürich

6.8 Tutorials

Students who work as tutors in a module offered by the Department of Geography obtain 2 ECTS credits per module in the elective section. During the entire period of study (Bachelor's and Master's studies), a maximum of 5 ECTS credits can be credited.

Tutorials are a useful and recommended addition to the studies and a valuable experience. Tutors support the instructors in exercises and seminars of the lower semesters. The correction of assignments is also part of the activity as a tutor. Acquired knowledge and skills are applied and passed on. Future teachers can collect first-hand experiences in teaching. Apart from the 2 ECTS credits per tutorial, tutors receive financial compensation as well. Open positions for tutorials for the following semester are published on the website in the middle of the semester. Students are also informed about open tutor positions and application deadlines by email.

Jobs GIUZ
Submission for Transfer of Credits

6.9 Internships

A research or vocational internship can be a useful addition to an academic education. For a four-week internship, 2 ECTS can be credited as an elective module. During the entire study (Bachelor and Master), a maximum of 5 ECTS credits, which correspond to a ten-week internship, can be credited. A faculty member must approve of the internship before its completion.

Internship forms

An internship report of approximately 5-10 pages is handed in to this faculty member. In addition, a short form of the report is intended to show other students different options for gaining work experience and to help them organize their own internship. For this purpose, the internship is briefly described on approximately one A4 page, whereby the important key points are mentioned. The report is to be submitted as a Word document in English or German and should contain the points listed on the second page of the template. The form must be uploaded and submitted via the homepage for "Submission for Transfer of Credits". Links leading to relevant websites can be included in the

text and must be listed additionally at the end of the report. One or two images are requested for illustration purposes and must be handed in separately. They need a minimum resolution of 920x556 pixels in landscape format.

INTERNSHIP REPORTS

SUBMISSION FOR TRANSFER OF CREDITS

By submitting their report, students agree to its upload to the GIUZ's online internship catalogue and thereby its public accessibility. Internship positions must be organized independently. Open positions are published on our website.

OPEN POSITIONS

UZH CAREER SERVICES - HOME

HOMEPAGE IAESTE SWITZERLAND

7. Earth System Science as a Minor

Earth System Science can be taken as minor with 30 or 60 ECTS credits. For the Master's degree programme, it is only possible to complete the minor with 30 ECTS. The 30-ECTS credits option (can be taken during BSc or during MSc) includes basics in ESS, physical geography, remote sensing and GIS. The table below lists the compulsory modules (CM) for the 30-ECTS credits option.

Code and title	ECTS	Semester	30 CP
ESS 111 Dynamische Erde I (part of ESS110)	6	HS	CM
ESS 101 Einführung in die Erdsystemwissenschaften	2	HS	CM
GEO 113 Fernerkundung und GIS I	5	HS	CM
ESS 123 Exkursionen zu Dynamische Erde	1	FS	CM
ESS 244 Earth System Science Field Course	2	FS	CM

Please consult the **BSC STUDY GUIDE** ("Wegleitung") for more information, but please be aware that most courses on the BSc level are taught in German.

EARTH SYSTEM SCIENCE AS MINOR

8. Teaching Diploma for Upper Secondary Education (Matura school)

As the Teaching Diploma for Upper Secondary Education **can only be completed in German**.

To teach geography at a Swiss upper secondary school (Matura school), a teaching diploma in geography for upper secondary education is required. Geography may be chosen as either a first or second teaching subject. Didactic training can begin during the master's programme. However, a completed degree in Geography or Earth System Science is a prerequisite for obtaining the teaching diploma. The pedagogical training is offered by the Institute of Education (Institut für Erziehungswissenschaften (IfE)) and requires dual enrolment in both the academic faculty and the IfE.

TEACHING DIPLOMA FOR UPPER SECONDARY SCHOOL (MATURA SCHOOL) – GERMAN ONLY

MORE INFORMATION TO THE TEACHING DIPLOMA

Application Deadlines for Dual Enrolment in the Teaching Diploma Programme (Upper Secondary Education)

- Start in the Fall Semester: April 30th
- Start in the Spring Semester: November 30th

Contacts and further information
Institut für Erziehungswissenschaften (IfE) UZH

Abteilung Lehrerinnen und Lehrerbildung Maturitätsschulen (LLBM)
Kantonsschulstrasse 3, 8001 Zürich

+41 (0)44 634 66 55
sekretariat.llbm@ife.uzh.ch

Dr. Itta Bauer
Geography Teacher Training
Büro: Y25-L-08
Winterthurerstr. 190, Universität Irchel,8057 Zürich

+41 (0)44 635 51 47
itta.bauer@geo.uzh.ch

8.1 Geography as a First Teaching Subject

The basis for obtaining the teaching diploma for upper secondary schools (Matura schools) with geography as either a monodisciplinary subject (i.e., teaching geography exclusively) or as the first teaching subject (i.e., in combination with a second subject) is a completed Bachelor's and Master's degree in Geography (BSc in Geography and MSc in Geography, respectively). While the teaching diploma may be pursued in geography alone, it is also possible—but not mandatory—to obtain the qualification in a second teaching subject, such as history, biology, chemistry, physics, or mathematics, etc. The second subject must be selected from either the Faculty of Science or the Faculty of Arts and Social Sciences. Subjects offered by the Faculty of Business, Economics and Informatics or by ETH Zurich, such as sports, are not eligible. Students interested in qualifying for a second teaching subject are strongly advised to begin taking modules in that discipline already during their bachelor's studies. In addition, they must complete the didactic training specific to the second subject. For detailed information regarding subject requirements and eligibility, students should consult the Institute of Education (IfE).

8.2 Geography as a Second Teaching Subject

Students who are pursuing a minor in geography may select Geography as their second teaching subject, provided they are also completing the teaching diploma for upper secondary schools (Matura schools) in their major field of study. This option is available exclusively to students whose major is in a subject that is taught at Swiss upper secondary schools (e.g., history, biology, or physics). The subject-specific academic requirements for Geography as a second teaching subject amount to 90 ECTS credits. Because the required modules are predefined, early planning of the minor program structure is strongly recommended. A detailed list of the subject-specific requirements is available on the website of the Department of Geography (GIUZ).

INFORMATION ON TEACHING DIPLOMA

9. Varia

9.1 Students' Society Geography (Fachverein)

The Student Society Geography's primary aim is the protection of the interests of geography students towards the department. It is related to the University of Zurich Student Association (VSUZH). The Student Society offers the possibility to establish contacts between the students, but it also aims to cooperate with the lecturers as well as with other student societies.

The Geoteam regularly organizes events such as the very popular "DoBar" ("Do" for Thursday in German) at the Irchelbar and the "Geofest". For the continued existence and representation of students' interests, students are always needed and welcome to join!

geoteam@geo.uzh.ch

Student Association Geoteam

9.2 Geographie Alumni UZH

The "Geographie Alumni UZH", offers different field trips and lectures on geographical issues.

Geography Alumni UZH serves as a link between the university and the public. Its primary goal is to make scientific research accessible in an understandable form through specialized lectures on current key topics and field trips in Switzerland and abroad. Geography Alumni UZH includes current geography students, active and former geography teachers, university graduates, and faculty members from various academic disciplines. The organization fosters and enables a close-knit professional and personal network. As a regional chapter, Geography Alumni UZH is a member of the ASG (Swiss Association of Geography, Verband Geographie Schweiz). In collaboration with the ASG, Geography Alumni UZH jointly sponsors the journal Geographica Helvetica (Swiss Journal of Geography). This journal is open access and is managed by an editorial team with leadership at the University of Zurich.

Homepage Geographica Helvetica

Homepage GEO Alumni

Membership

The membership fee is CHF 20 per year for students, and CHF 60 per year for all other members.

9.3 Libraries

Several different libraries are available to students, including:

Main Library of the University of Zurich, Winterthurerstrasse 190.
The Library of the Department of Geography is integrated into the Main Library of the University of Zurich.
Zentralbibliothek Zürich, Predigerplatz.
ETH Library, ETH-City Campus.
Schweizerisches Sozialarchiv, Stadelhoferstrasse 12.

9.4 Important University Information Offices

Student Administration Office (Kanzlei)

University Main Building, Rämistrasse 71, 8006 Zürich, room E 8
Opening hours: Monday - Friday: 9.30-12.30 o'clock

+41 (0)44 634 22 17

kanzlei@uzh.ch

Homepage

Student Affairs Office, Faculty of Science (MNF)
University Irchel, room 10-G-23
Opening hours: Tue / Thu: 10.00-12.30 / 13.45-16.15,
Wed: 10.00-12.30 (mornings only during non-lecture period)

+41 (0)44 634 40 07

bama@mnf.uzh.ch

HOMEPAGE

Psychological Counselling Service
Plattenstrasse 28, 8032 Zürich
Consultations (appointments by arrangement) are free of charge and strictly confidential.

+41 (0)44 634 22 88

pbs@ad.uzh.ch

HOMEPAGE

Advisory Centre for Grants and Loans
University Main Building, Rämistrasse 71, 8006 Zürich, room KOL Ea 4c
Opening hours: Tue - Fr: 10.00-12.30. Appointments by arrangement.

+41 (0)44 634 22 04

studienfinanzierung@ad.uzh.ch

HOMEPAGE

Disability office
University Main Building, Rämistrasse 71, 8006 Zürich, room KOL Ea 4c
Opening hours: Tue - Fr: 10.00-12.30. Appointments by arrangement.

+41 (0)44 634 45 44

fsb@sib.uzh.ch

HOMEPAGE

Global Student Experience (Exchange Programs)
University Main Building, Rämistr. 71, 8006 Zürich, room KOL E 17
Opening hours: Mo - Fr: 9.30 - 12.30 or by arrangement

+41 (0)44 634 41 57

outgoing@int.uzh.ch

HOMEPAGE

Academic Sports Association Zurich (ASVZ)
Secretary and information desk: Polyterrasse ETH
September-Mai: Monday - Friday 10.00 - 16.00 / Thursday 10.00 - 19.00
June-August: Monday - Friday 10.00 - 14.00 o'clock

+41 (0)44 632 42 10

info@asvz.ethz.ch

HOMEPAGE

Accommodation Agency
Accommodation (rooms and flats) service for students, lecturers and employees of the UZH and ETHZ
Sonneggstrasse 27, 8006 Zürich
Opening hours: Monday, Wednesday - Fr 11.00 - 13.00 o'clock

+41 (0)44 632 20 37

zimmervermittlung@ethz.ch

Homepage

Studentische Wohngenossenschaft (Woko)
Sonneggstrasse 63, 8006 Zürich
Opening hours: Monday - Thursday 11.00 - 15.00 o'clock
Phone hours: Monday - Thursday 9.00 - 13.00 o'clock

+41 (0)44 632 42 90

woko@woko.ch

Homepage

9.5 Further Offers

Career Services
Hirschengraben 60, 8001 Zürich

+41 (0)44 634 21 54 or 62

Homepage (Career Services)

Homepage (student jobs)

Homepage UZH Alumni (marketplace etc.)