

# Master of Science in Environmental Sciences

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Study programme Coordinator  
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# Agenda for today

1. Department of Environmental Systems Science (D-USYS) - 6 Research Institutes
2. Master in Environmental Sciences @ ETH
3. Study Programme in Environmental Sciences
4. Possible Profession
5. Student association „UFO“
6. What do we expect from you?
7. Prerequisites & Additional Requirements
8. Acception versus Rejection
9. Consecutive study programmes
10. How to apply
11. Resources - website, study guide/brochure

Additional Material: Difference to Earth and Climate Science and Environmental Engineering

# 1. Department of Environmental Systems Science (D-USYS) - 6 Research Institutes



## **Institute of Agricultural Sciences**

- BSc & MSc Study programmes in Agricultural Sciences

The remaining five institutes form the **BSc and MSc degree programmes in Environmental Sciences**. Each institute contributes to teaching and training in the form of at least one major.



## **Institute for Atmospheric and Climate Science**

- Major: Atmosphere and Climate



## **Institute of Biogeochemistry and Pollutant Dynamics**

- Major in Biogeochemistry and Pollutant Dynamics



# 1. Department of Environmental Systems Science (D-USYS) - 6 Research Institutes



## **Institute of Integrative Biology**

- Major in Ecology and Evolution
- Major in Human Health, Nutrition and Environment



## **Institute for Environmental Decisions**

- Major in Environmental Systems and Policy

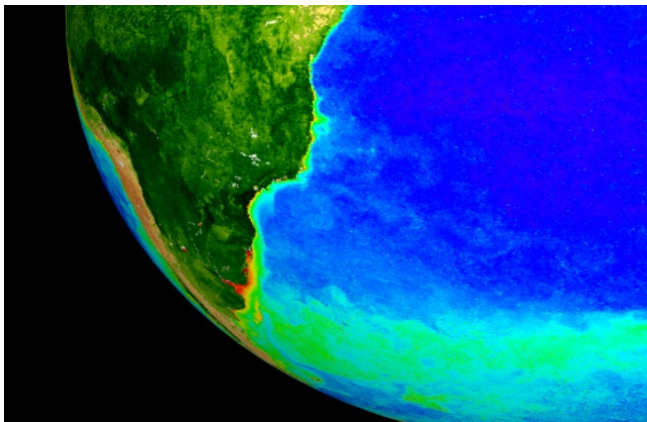


## **Institute of Terrestrial Ecosystems**

- Major in Forest and Landscape Management

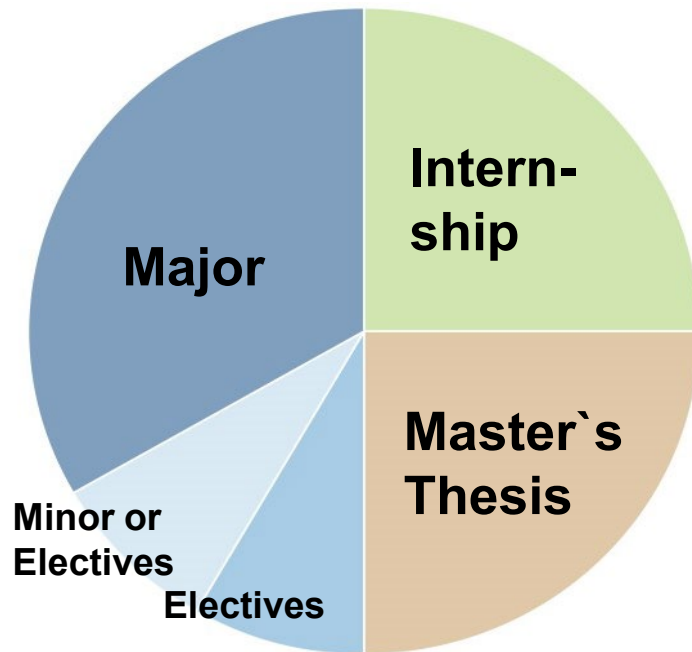
## 2. Master in Environmental Sciences @ ETH

- Students gain knowledge about **relevant research questions** and findings from both **fundamental and applied research**.
- The Master's degree programme in Environmental Sciences offers a **wide range of choices** in lectures and opportunities for research collaboration with **world-class level** groups.
- Graduates from the Master's degree programme are equipped with high-level **theoretical and methodological competence** and with **social and personal skills** to take up challenging professional work or an academic career.








### 3. Study Programme in Environmental Sciences - **Structure**

The master programme consists of 120 credit points. It can be completed within 2 years (full-time study). The maximum duration would be four years.



#### Categories of the Master (120 CP)

	Major	40 CP
	Minor or Electives	10 CP
	Electives	10 CP
	Internship	30 CP
	Master`s Thesis	30 CP



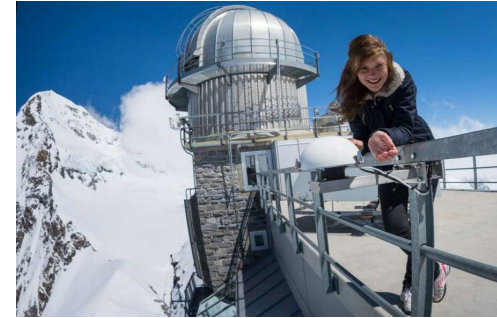
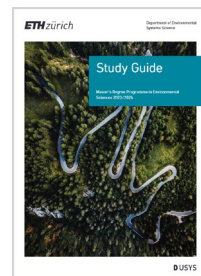
# 3. Study Programme in Environmental Sciences – **Majors**

## You choose one of out of six Majors

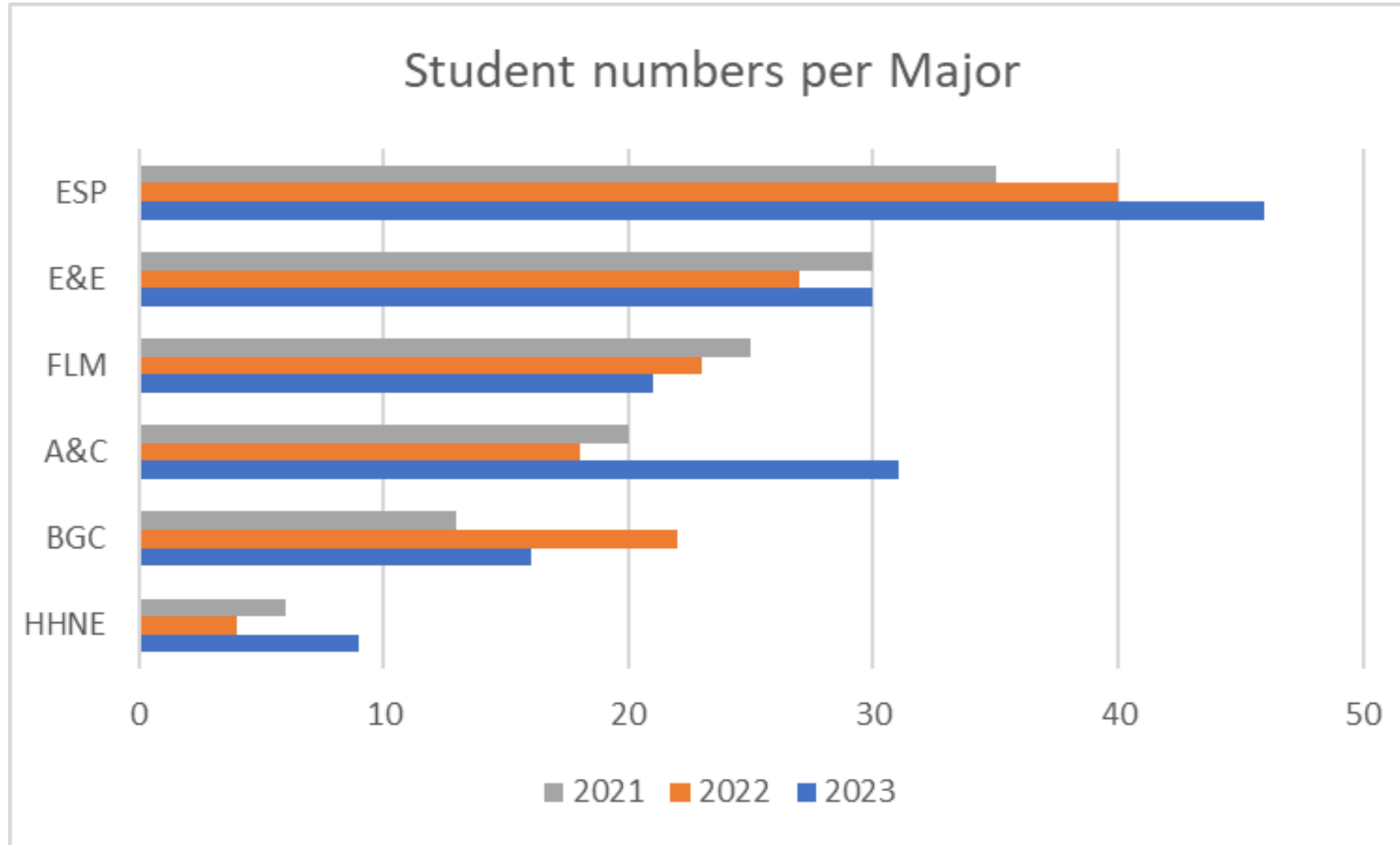
- Atmosphere and Climate
- Biogeochemistry and Pollutant Dynamics
- Ecology and Evolution
- Environmental Systems and Policy
- Forest and Landscape Management
- Human Health, Nutrition and Environment

For details, please check the

- website: <https://usys.ethz.ch/en/studies/environmental-sciences/master.html> or
- [study guide](#)



### 3. Study Programme in Environmental Sciences – **Student numbers per Major**





### 3. Study Programme in Environmental Sciences – Minors

**You decide if you select no, one or two Minor(s)\***

There are **six minors** to choose from:

- Sustainable Energy Use
- Physical Glaciology
- Catchment Management and Natural Hazards
- Forest Engineering and Wood Products
- Agricultural Plant Production and Environment
- Environmental, Resource and Food Economics

**\* Only the Major Environmental Systems and Policy requires a Minor**



### 3. Study Programme in Environmental Sciences – **Professional Internship**

- **compulsory**
- 30 credit points
- **18 weeks full-time**
- outside of ETH Zurich
- Solving environmental problems **in a business setting**
- the students acquire **practical experience**
- **apply the knowledge** acquired during the studies
- the internship shows **possibilities of future professional activities**



### 3. Study Programme in Environmental Sciences – **Master`s Thesis**

- **Compulsory**
- 30 credit points
- **a scientific thesis written independently** by the student
- **Duration is six months**
- Topic is usually chosen within the major
- **Supervision** by an authorized supervisor
- Grading by supervisor and at least one co-supervisor



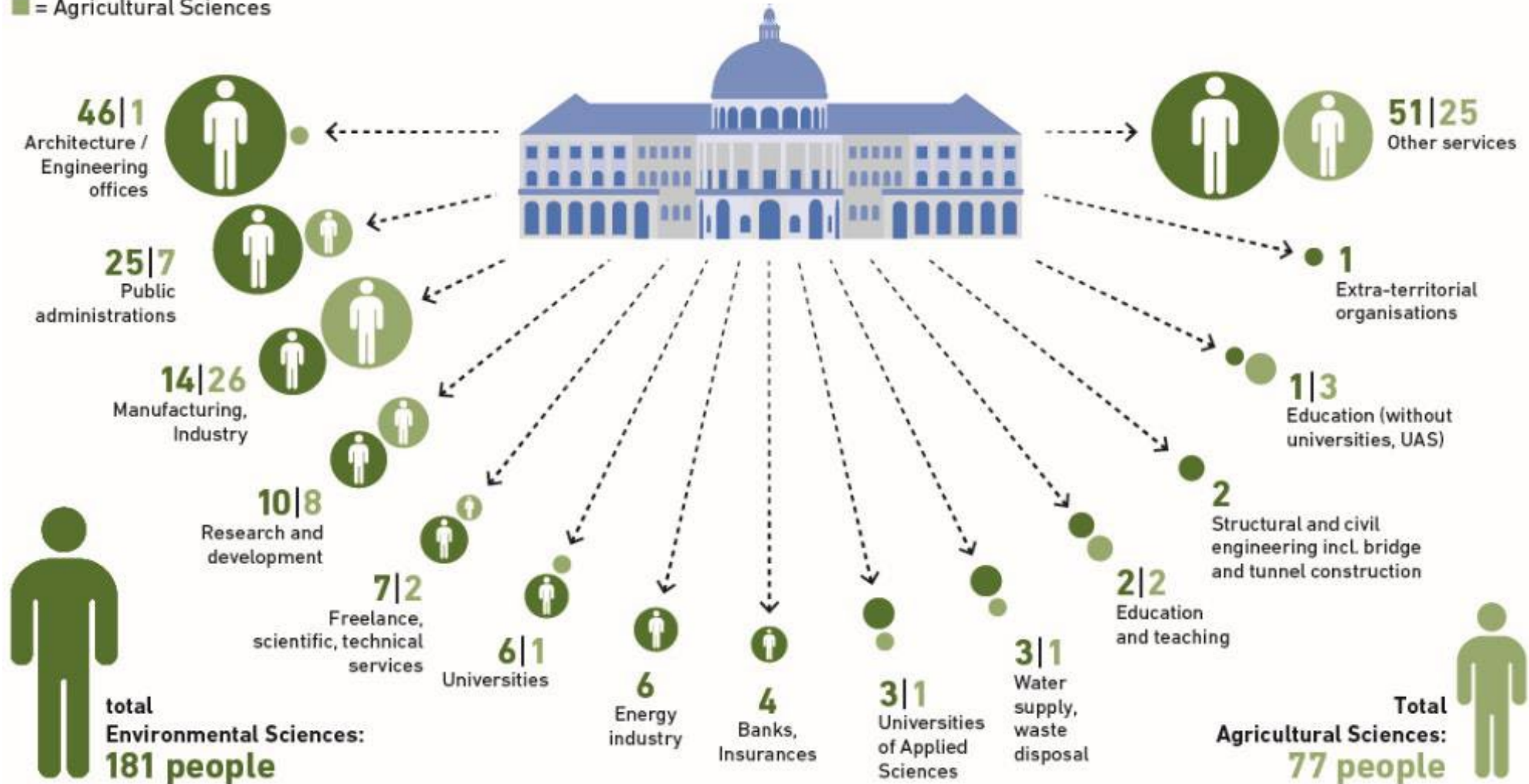


## 4. Possible Profession

Professional domains of Master's graduates; Data from surveys of 2009, 2011, 2013, 2015, 2017, 2019, taken one year after graduating

■ = Environmental Sciences

■ = Agricultural Sciences



## 5. Student association „UFO“

### By the Students & for the students

- Organizing social events (e.g. ski weekend, cheese fondue, clothes swap)
- Master Weekend at the beginning of the first semester
- ThirstdayBar
- Newsletter
- God parents for new students
- File server....



## 6. What do we expect from you?

- In general:
  - **Interest in scientific perspectives**
  - Committed, communicative personalities who **think critically**
  - **independent personalities**
  - **highly motivated**
  - **Eagerness to learn**
- More specific:
  - **BSc Degree in environmental sciences or a comparable study programme** (e.g. Environmental Engineering, Biology, Chemistry, Physics)
    - **3 years of full-time study programme** at a university
    - BSc Degree with **at least 180 credits/ECTS** (or equivalent)
    - **including mathematics, biology, chemistry and/or physics**
  - **Good to very good academic performance**





## 7. Prerequisites & Additional Requirements (1) – Basic knowledge

### Mathematics (14 credits)

- Analysis I & II and Linear Algebra
- Systems Analysis
- Statistics

### Natural sciences / environmental systems (32 credits)

- General Biology I & II
- Evolutionary Biology
- Microbiology
- Ecology
- Chemistry I & II
- Physics I & II
- Environmental Systems I & II
- Atmosphere
- Pedosphere
- Hydrosphere

### Humanities and social sciences (6 credits)

- Economics
- Environmental Law
- Environmental Policy in Switzerland
- Methods of Argument in Science and Ethics
- Methods of Empirical Social Research

*Please check the course catalogue for the content of these courses!!*

## 7. Prerequisites & Additional Requirements (2) – Specific Knowledge

### Atmosphere and Climate

- Atmospheric physics
- Atmospheric chemistry
- Meteorology
- Climate
- Numerical modelling

### Biogeochemistry and Pollutant Dynamics

- Biogeochemistry
- Global cycles
- Environmental chemistry
- Environmental physics
- Environmental microbiology
- Ecotoxicology

### Ecology and Evolution

- Ecology
- Evolution
- Genetics
- Infectious diseases

You have to prove at least **12 credits** for your chosen major on the basis of courses listed above.

*Please check the course catalogue for the content of these courses!!*

## 7. Prerequisites & Additional Requirements (3) – Specific Knowledge

### Environmental Systems and Policy

- Social sciences
- (Statistical) modelling
- Deploying policy analysis

You have to prove at least **12 credits** for your chosen major on the basis of courses listed here.

### Forest and Landscape Management

- Botanical species knowledge
- Forest and landscape ecology
- Spatial information systems (GIS)
- Planning and use of forest and landscape
- Environmental law, politics and economics

### Human Health, Nutrition and Environment

- Human anatomy and physiology
- Food sciences
- Environmental chemistry and ecotoxicology
- Immunology
- Microbiology
- Statistical application

*Please check the course catalogue for the content of these courses!!*



## 7. Prerequisites & Additional Requirements (4) – form

### Record of Subjects Taken or to be Taken

Please list all your classes, courses, theses, etc. in the same order as they appear on your official transcript. Please provide a short summary of the course descriptions (max. 489 characters).

No.	CIVIL-312	Acad Year	2022	Subject	Hydraulic structures and schemes								
Course Description and/or Textbook Used Hydraulic structures and schemes are vital for ensuring supply of clean and renewable energy as well as water in enough quantity and sufficient good quality in order to fight against famine, poverty and diseases in the world.					Duration (Weeks)				14				
					Contact Hrs per Week				5				
					thereof	Lecture	3	Tutorial	2	Lab	0	Thesis	
					Grade		Credits				5		

Good example

### Record of Subjects Taken or to be Taken

Please list all your classes, courses, theses, etc. in the same order as they appear on your official transcript. Please provide a short summary of the course descriptions (max. 489 characters).

No.	AHT 102	Acad Year	2019	Subject	Intro Art History I (AP Art History) - High School								
Course Description and/or Textbook Used AP Art History					Duration (Weeks)								
					Contact Hrs per Week								
					thereof	Lecture	0	Tutorial		Lab		Thesis	
					Grade	TR	Credits				3		

Bad example

## 7. Prerequisites & Additional Requirements (5)

- In case you do not fulfil the prerequisites of
  - 52 credits in the basic knowledge AND
  - 12 credits in the specific knowledge
  - And the gap is 15 credits or less for the basic knowledge and not more than 20 credits for both parts, then you will receive additional requirements in the fields you are missing.
- If you miss more than 15 credits for the basic knowledge or more than 20 credits for both parts, you will be rejected
- There is no assessment year or other possibility to catch up the knowledge you are missing!

If you have the chance to take courses which are required for the study programme in Environmental Sciences at your home university then take them in in the remaining time!

# 8. Acception versus Rejection

## Acception

- Good to excellent grades
- matching profile/ study programme
- Good background in mathematics, biology, chemistry and/ or physics
- Completed Bachelor Degree
- Less than 15 and/ or 20 credits missing
- Coming from a consecutive study programme (next slide)

## Rejection

- Weak grades
- Missing documents
- non-specialized profile/ study programme
- No background or poor knowledge in mathematics, biology, chemistry and/ or physics
- Bachelor Degree not equivalent to 180 credit points/ three year of fulltime study



# 9. Consecutive study programmes

## No additional requirements

- BSc in Environmental Sciences and Engineering, Ecole polytechnique fédérale de Lausanne (EPFL)

## Additional requirements are possible

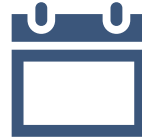
- University of Basel Geosciences
- University of Lausanne, BSc in Geosciences and Environment, orientation environmental studies (not Geology or Geography)
- University Neuchâtel Bachelor in Natural Systems
- University of Zurich, Earth System Science

# 10. How to apply (1)



## 1. Online application

Details regarding requirements and link to the [online application process](#)



## 2. Application Deadlines

International Bachelor's degrees:

1 November -15 December 2023

Swiss Bachelor's degrees: 1 April - 30 April 2024



## 3. Admission decision

You will be informed by end of March

- **Rejected**
- **Admitted with additional requirements**  
(5-15 ECTS complementary courses)
- **Admitted without additional requirements**



Start in advance, double-check information and contacts, don't submit on the last day!

# 10. How to apply (2)

**ETH zürich**

News & events ETH Zurich **Studies at ETH Zurich** Doctorate Research Industry & Knowledge Transfer Campus

Home » Studies at ETH Zurich » Master's degree studies » Application

## Application Master

ETH Zurich ranks as one of the top international universities in the technical and scientific disciplines. Depending on your educational background, there are different requirements for your application to our Master's degree programmes.

**Contact**  
☎ +41 44 632 81 00  
✉ E-mail  
+ Show more

**Email**  
Before contacting us by email, please check if your query is included in our **FAQ**. Questions answered in the FAQ will not receive an individual reply.

**Desk**  
Wednesday 11-13 h  
Location map (PNG, 52 KB)   
Telephone  
Mon-Fri (except Wed) 9-11h  
Tel +41 44 632 81 00

**Links**  
+ Range of degree programmes  
+ Dates  
+ Language requirements

**Admission**  
Admission to its Master's degree programmes is highly selective. We are looking for applications from excellent Bachelor graduates from universities comparable to ETH Zurich that meet the degree-specific requirement profiles.

+ Open all

Why is the admission process highly selective? +

What are "reputed universities" or "comparable degrees"? +

**International Bachelor** > **ETH Zurich Bachelor** >

**EPFL Bachelor** > **Swiss university Bachelor** >

**University of applied sciences Bachelor** >

Please check this website for:

- FAQ
- Deadlines
- Necessary documents

## Deadlines

- **December 15th, 2023** for all students with a foreign Bachelor's degree
- **April 1 to 30, 2024** for students with a Swiss Bachelor's degree

**ETH zürich** Application for a Master's Degree Programme

### General Information

Which Master's programme are you applying for? Please choose...

Your email address  Your application number

Name  First Name  University

Title of (intended) degree  Credit System

Course Catalogue (URL)

Grading scale for courses and papers

Highest possible grade  Minimum pass grade  Lowest possible fail grade

Comments

### Record of Subjects Taken or to be Taken

Please list all your classes, courses, theses, etc. in the same order as they appear on your official transcript. Please provide a short summary of the course descriptions (max. 459 characters).

No.	Acad. Year	Subject	Duration (Weeks)	Contact hrs per Week	thereof	Lecture	Tutorial	Lab	Thesis	Grade	Credits
Course Description and/or Textbook Used <input type="text"/>											
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# 11. Resources - website, study guide/brochure

## Study programme Environmental Sciences

- Website information about [Study Programme](#), [Research](#), [Department](#)
- [Appendix Study Programme Regulations](#)
- Courses within the Study programme -> [Study Guide](#)
- [Course Catalogue ETH](#)

## Application

- [Website](#)
- [FAQ](#) (Admission, Deadlines, Documents, Fees, GRE, Language requirements, Scholarships...)
- [Student Portal](#) (Semester dates, Financial matters, Student life, Housing Office....)





Thank you for your attention!

Time for questions!



# Further information / questions

<https://usys.ethz.ch/en/studies/environmental-sciences/master.html>



**Admissions office > general questions**

[master@ethz.ch](mailto:master@ethz.ch)

+41 44 632 81 00



**Study programme coordinator > programme specific questions**

Susanne Lambrecht

[susanne.lambrecht@usys.ethz.ch](mailto:susanne.lambrecht@usys.ethz.ch)

+41 44 633 60 82

# Comparison of Majors in Earth and Climate Science, Environmental Science and Environmental Engineering

## Earth and Climate Science

- Engineering Geology
- Geology
- Geophysics
- Mineralogy and Geochemistry

**More related to the structure of the Earth**

## Environmental Science

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

**Focusing close to the earth surface and above**

## Environmental Engineering

- Urban Water Management
- Environmental Technologies
- Resource Management
- Water Resources Management
- River and Hydraulic Engineering

**More related to Water and Resource Management**