

# Master's degree in Earth System Science

with 30 ECTS credits Master's thesis

CP	7. Semester (HS)	8. Semester (FS)	9. Semester (HS)	CP
1	ESS 401 Current Themes in Earth System Science	ESS 416 Earth System Modelling	ESS 511 Master's Thesis	1
2				2
3		3 CP		3
4	ESS 417 Earth System Observations and Analyses		4 CP	4
5				5
6				6
7				7
8				8
9	Core elective modules At least two Systems with a minimum of 12 CP in each System			9
10				10
11				11
12				12
13				13
14				14
15				15
16				16
17				17
18				18
19				19
20				20
21				21
22				22
23				23
24			36 CP	24
25	Skills			25
26				26
27			6 CP	27
28	Elective modules			28
29			4 CP	29
30				30
31			ESS 512 Master's Exam	31
32			2 CP	32

with 60 ECTS credits Master's thesis

CP	7. Semester (HS)	8. Semester (FS)	9. Semester (HS)	CP
1	ESS 401 Current Themes in Earth System Science	ESS 416 Earth System Modelling		1
2				2
3		3 CP		3
4	ESS 417 Earth System Observations and Analyses		4 CP	4
5		ESS 510 Master's Thesis		5
6				6
7				7
8				8
9	Core elective modules Two Systems with 6 CP in each System			9
10				10
11				11
12				12
13				13
14				14
15				15
16				16
17				17
18				18
19				19
20				20
21				21
22				22
23				23
24			16 CP	24
25				25
26				26
27				27
28				28
29				29
30				30
31				31
32			60 CP	32
33			ESS 512 Master's Exam	33
34			2 CP	34

Mandatory	
<span style="background-color: #92d050; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	Earth System Science
<span style="background-color: #66b3ff; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	Core elective modules
<span style="background-color: #e06666; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	Skills
Elective section	
<span style="background-color: #ffff99; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	Elective modules from UZH or ETH

- CP ECTS credits
- HS fall semester
- FS spring semester
- ir irregular course
- b block course
- 2 Course over two semesters
- 
- UZH Lecture codes starting with: ESS, GEO, BIO, STA, UWW
- ETH Lecture codes starting with: 102, 651, 701, 751, 851

**Contact:**  
<https://www.geo.uzh.ch/de/studium.html>  
 student-advice@geo.uzh.ch  
 +41 44 635 51 18

## Core elective and Skills module list

### Geo-Biosphere System (Core elective)

Code	CP	Sem.	Module title
ESS 841	3	HS	Analyzing the plant-soil system: Theory
ESS 842	6	FS,b	Analyzing the plant-soil system: Practice
GEO 417	6	HS,2	Environmental archives and age determination
GEO 463	6	HS	Soil science I: current challenges in plant-soil systems
GEO 818	6	HS,2	Dendro-Ecology
GEO 820	2	FS	Stable isotopes in ecology and soil science
BIO 148	3	FS	Introduction to Paleontology (if not available: BIO 274 (1CP) as alternative)
BIO 308	2	HS	Introduction to Limnology (Inland water ecosystems)
EEE 330	6	HS,b	Population Ecology
EEE 334	2	HS,b	Biodiversity from Species to Landscape Scale (Remote Sensing)
651-4004	3	FS	The global carbon cycle - reduced
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

### Hydro-Atmosphere System (Core elective)

Code	CP	Sem.	Module title
ESS 367	3	FS	Remote Sensing of the Atmosphere
GEO 411	6	FS,ir	Field studies on high mountain processes
GEO 471	6	FS	Hydrological field measurements and calculations
GEO 475	6	HS	Hydrological Modelling and Programming
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 risks
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
701-1251	3	HS	Land-Climate Dynamics
701-1252	3	FS	Climate Change Uncertainty and Risk

### Human-Environment System (Core elective)

Code	CP	Sem.	Module title
GEO 423	6	HS	Political Geography
GEO 424	6	FS	Environment in History
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	Regional Environmental Governance
GEO 856	3	FS	The high-mountain cryosphere: processes and risks
GEO 425	6	FS	Political Ecology: from critique to transformation
GEO 857	3	FS	Snow and avalanches: processes and risk management
EEE 330	6	HS,b	Population Ecology
EEE 264	3	HS	Environmental Policy of the EU
EEE 204	2	FS	Biodiversity and Society
701-1317	3	FS	Global Biogeochemical Cycles and Climate
701-1651	3	HS	Environmental Governance
860-0023	3	HS	International environmental politics

### Skills

Code	CP	Sem.	Module title
GEO 803	2	HS,b	Solving Geospatial Problems using Matlab
GEO 812	1	HS,b	Getting started with R for spatial analysis
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 (R)

**Explanation**  
**30 ECTS credits Master's thesis:** 36 ECTS credits for Core elective modules (at least two systems with a minimum of 12 ECTS credits in each chosen system) and 6 ECTS credits for Skills  
**60 ECTS credits Master's thesis:** 16 ECTS credits for Core elective modules (two systems with a minimum of 8 ECTS credits in each chosen system)