

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 417 Earth System Observations and Analyses	ESS 511 Master's Thesis	1
2				2
3				3
4	ESS 416 Earth System Modelling			4
5				5
6				6
7				7
8	Core elective modules At least two Systems with a minimum of 12 CP in each System			8
9				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				24
25	Skills			25
26				26
27				27
28	Elective modules			28
29				29
30				30
31			ESS 512 Master's Exam	31
32				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 417 Earth System Observations and Analyses		1
2				2
3				3
4	ESS 416 Earth System Modelling			4
5				5
6				6
7				7
8	Core elective modules Two Systems with 8 CP in each System			8
9				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				24
25				25
26				26
27				27
28				28
29				29
30				30
31				31
32				32
33			ESS 512 Master's Exam	33
34				34

Mandatory

	Earth System Science
	Core elective modules
	Skills

Elective section

	Elective modules from UZH or ETH
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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

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Core elective and Skills module list

Geo-Biosphere System (Core elective)			
Code	CP	Sem.	Module title
GEO 412	6	FS,b	Soil Science III: practical project
GEO 417	6	HS,2	Environmental archives and age determination
GEO 463	6	HS	Soil science I: current challenges in soil science
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
BIO 308	2	HS	Introduction to Limnology (Inland water ecosystems)
UWW 221	3	HS,b	Species Interactions and Biodiversity
UWW 231	2	HS,b	Analysis and Management of Biological Populations
UWW 252	2	HS,b	Spatial Ecology and Remote Sensing
UWW 273	3	HS	Introduction to Theoretical Ecology
651-4004	3	FS	The global carbon cycle - reduced
651-4041	3	HS	Sedimentology I: physical processes and sedimentary systems
651-4054	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	HS	Hydrological field measurements and calculations
GEO 475	6	FS	Hydrological Modeling 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	FS	Watershed Modelling
102-1251	3	HS	Hydrology II (rainfall-runoff processes)
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 857	3	FS	Snow and avalanches: processes and risk management
GEO 886	3	FS, b	Natural Resource Management of Mountain Areas
BIO 312	2	FS	Integrated Species Conservation and Management
UWW 231	2	HS,b	Analysis and Management of Biological Populations
UWW 291	3	HS	Ecology and Evolution at the Heart of the 'Wicked Problems'
701-1317	3	FS	Global Biogeochemical Cycles and Climate
701-1551	3	HS	Sustainability Assessment
701-1651	3	HS	Environmental Governance
851-0594	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 876	3	FS	Introduction to Programming for Spatial Problems
STA 120	5	FS	Introduction to Statistics
STA 260	1	HS	Practical Introduction to R
STA 433	2	FS	R programming
UWW 271	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)