Complete list of elective courses at ETH 2023 / 2024

Weather Systems and Atmospheric Dynamics

Module courses

- **701-1221-00** Dynamics of Large-scale Atmospheric Flow  
  HS 2V+1U 4
- **651-4053-05** Boundary Layer Meteorology  
  HS 3G 4
- **701-1224-00** Mesoscale Atmospheric Systems - Observation and Modelling  
  FS 2V 2
- **701-1216-00** Weather and Climate Models  
  FS 3G 4
- **701-1226-00** Inter-annual Phenomena and their Prediction  
  FS 2G 2

Recommended electives

- **701-1236-00** Messmethoden in der Meteorologie und Klimaf.  
  FS 1V 1
- **701-1258-00** The Global Atmospheric Circulation and Climate  
  FS 1G 2
- **701-1266-00** Weather Discussion  
  FS 2P 2.5

Climate Processes and Feedbacks

Module courses

- **701-1235-00** Cloud Microphysics  
  HS/FS 2V+1U 4
- **701-1251-00** Land-Climate Dynamics  
  HS 2G 3
- **701-1216-00** Weather and Climate Models  
  FS 3G 4
- **701-1232-00** Radiation and Climate Change  
  FS 2G 3
- **701-1252-00** Climate Change Uncertainty and Risk: From Probabilistic Forecasts to Economics of Clim. Adaption  
  FS 2V+1U 3
- **701-1228-00** Cloud Dynamics: Hurricanes  
  FS 3G 4

* takes only place in FS when there are enough participants

Recommended electives

- **651-4057-00** Climate History and Paleoecology  
  HS 2G 3
- **651-1317-00** Global Biogeochemical Cycles and Climate  
  FS 3G 3
- **651-4004-00** The Global Carbon Cycle - Reduced  
  FS 2G 3
- **651-4226-00** Geochemical and Isotopic Tracers of the Earth System  
  FS 2V 3
- **651-4157-00** Past droughts, floods and rainfall variability  
  FS 2S 2
- **651-xxxx-xx** Impact and drivers of past ocean circulation changes  
  FS 2

1 will be offered every second year (next time in FS 2025)
2 will be offered every second year (first time in FS 2024)

Climate History and Paleoecology

Module courses

- **651-4057-00** Climate History and Paleoecology  
  HS 2G 3
- **651-1317-00** Global Biogeochemical Cycles and Climate  
  FS 3G 3
- **651-4004-00** The Global Carbon Cycle - Reduced  
  FS 2G 3
- **651-4044-04** Micropalaeontology and Molecular Palaeontology  
  FS 2G 3
- **651-4226-00** Geochemical and Isotopic Tracers of the Earth System  
  FS 2V 3
- **651-4157-00** Past droughts, floods and rainfall variability  
  FS 2S 2
- **651-xxxx-xx** Impact and drivers of past ocean circulation changes  
  FS 2

1 will be offered every second year (next time in FS 2025)
2 will be offered every second year (first time in FS 2024)

Recommended electives

- **651-4041-00** Sedimentology I: Physical Processes and Sedimentary Systems  
  HS 2G 3
- **651-4043-00** Sedimentology II: Biological and Chemical Processes in Lacustrine and Marine Systems  
  HS 2G 3
- **651-4049-00** Conceptual and Quantitative Methods in Geochem,  
  HS 2G 3
- **UNIBE-103709** Methods of Climate Reconstruction  
  HS every 2yr 2
- **UNIBE-26396** Quaternary Climate Change and Terrestrial Ecos.  
  HS 2V 3

* Takes place as block course (7 days) probably in June 2024

Hydrology and Water Cycle

Module courses

- **701-1253-00** Analysis of Climate and Weather Data  
  HS 2G 3
- **701-1251-00** Land-Climate Dynamics  
  HS 2G 3
- **102-0287-10** Watershed Modelling  
  HS 4G 6
- **651-4053-05** Boundary Layer Meteorology  
  HS 3G 4

Recommended electives

- **651-4023-00** Groundwater  
  HS 3G 4
- **102-0287-00** River Basin Erosion  
  HS 2G 3
- **701-0535-00** Environmental Soil Physics/Vadose Zone Hydrology  
  HS 2G+2U 3
- **651-2915-00** Seminar in Hydrology  
  HS 1S 0
- **860-0012-00** Cooperation and Conflict Over Int. Water Resources  
  FS 2S 3
- **701-1224-00** Mesoscale Atmospheric Systems- Observation  
  FS 2V 2
and Modelling
701-1216-00  Weather and Climate Models  FS  3 G  4
102-0448-00  Groundwater II  FS  4 G  6
102-0488-00  Water Resources Management  FS  2 G  3

Recommended as additional elective courses

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701-1241-00  Atmospheric Remote Sensing  HS  1 V  3
701-1271-00  Statistical Learning for Atmospheric and Climate Science  HS  2G  3
651-4273-00  Numerical Modelling in Fortran  HS  2 V  3
651-4273-01  Numerical Modelling in Fortran (Project)  HS  1 U  1
701-1271-00*  High Performance Computing for Weather and Climate  FS  3G  3
701-3001-00  Environmental Systems Data Science: Data Processing  HS  2 G  2
701-3003-00  Environmental Systems Data Science: Machine Learning  HS  2 G  3
701-1644-00  Mountain Forest Hydrology  HS  3 G  5
* also offered in the category "Lab and Field work"
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MSc Environmental Sciences
Methods and tools courses
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