

# Field of Study 2 - Water Resources Management

## Master of Science in Environmental Engineering

Students enrolled in this FoS will acquire profound knowledge about the hydrological cycle and its relation to the biosphere, pedosphere and atmosphere. They understand water related conflicts in national and international river basins and find sustainable solutions by integrating and balancing ecological, social and economic requirements. They are able to apply analytic tools like optimization methods and physically based hydrological models to solve complex water resources challenges like drought and flood mitigation or water quality problems at the catchment scale. Furthermore, the students will evaluate the consequences of man-made deterioration of river courses and alleviate these effects by ecological decentralized restoration measures. They will be able to focusing on integrated water resources management, planning and designing flood protection measures and finding solutions in mitigating ecological impacts.

### Required Modules

- BGU54011 Integrated Water Resources Management
- BGU54009 Flood Risk and Flood Management

### Elective Modules

- BGU54008T2 Hydrological and Environmental River Basin Modeling
- BGU54015 Water Management at the Catchment Scale (Field trip to the Adige River Basin)
- BGU54019 Numerical Modelling of Water Demand and Supply in Arid Regions
- BGU54017 Environmental Remediation Strategies
- NN Water Resources and Hydro Power
- BV460012 Rivers as an ecosystem
- BV170009 International Water Rights and Politics
- BV040005 Naturnahe Bauweisen
- NN Modelling of Groundwater-Soil-Plant Interactions
- BGU38011 Bewirtschaftung von Kanalnetzen und Regenwassermanagement
- BGU54021 Remote Sensing in Hydrology

Pending module codes will be updated before the beginning of the semester.