

Possible Impacts of Climate Change on Water Resources (I002479)

Course size *(nominal values; actual values may depend on programme)*

Credits 3.0 **Study time** 90 h **Contact hrs** 30.0h

Course offerings in academic year 2022-2023

A (semester 2) English Gent

Lecturers in academic year 2022-2023

Holzmann, Hubert	WIEN03	lecturer-in-charge
Formayer, Herbert	WIEN03	co-lecturer
Mehdi-Schulz, Bano	WIEN03	co-lecturer

Offered in the following programmes in 2022-2023

	crdts	offering
International Master of Science in Soils and Global Change (main subject Soil Biogeochemistry and Global Change)	3	A

Teaching languages

English

Keywords

Position of the course

Contents

This lecture series introduce the functioning of the earth system with a particular focus on the atmospheric and hydrological system. It integrates experts from the field of meteorology, hydrology, forestry and alpine hazard research. Their presentations provide knowledge about

- climate and weather at different spatial scales (including past and future trends),
- water cycle and water balance components and their interactions,
- global and regional climate models and weather forecast systems (e.g. ECMWF, ALADIN),
- soil, vegetation, atmosphere interactions with emphasis on evaporation processes,
- hydrological water balance models for climate change impact assessments,
- examples of cc-impact studies with respect to water resources, forestry and alpine hazards.

Initial competences

no previous knowledge expected

Final competences

After participation the students will have gained a deep understanding of the coupled atmospheric hydrological system, the impact if climate factors (precipitation, temperature) on evapotranspiration and runoff behaviour. They will be able to distinguish between hard and soft facts in climate change discussion and will gain knowledge about the reliability of expected boundary conditions of different climate change scenarios. Based on presented research results they will improve their understanding of the quantitative impact of climate change on runoff, forestry, alpine risks and its related aspects (hydropower capacity, snow cover and tourism, wood production etc.)

Conditions for credit contract

This course unit cannot be taken via a credit contract

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Lecture

Learning materials and price

e-learning course

References**Course content-related study coaching****Assessment moments**

end-of-term assessment

Examination methods in case of periodic assessment during the first examination period

Written examination

Examination methods in case of periodic assessment during the second examination period

Written examination

Examination methods in case of permanent assessment**Possibilities of retake in case of permanent assessment**

examination during the second examination period is possible

Calculation of the examination mark