

Module Nr.	Credits	Workload	Semester	Frequency	Duration
SE-O-5	3 CP	90 h	2	Yearly (SS)	1 Semester
Courses			Contact time	Self-study	Group size
Environmental Geotechnics			2 h/week	60 h	---
Environmental Geotechnics					
Prerequisite for participation					
Recommended previous knowledge: completed module in Computational Methods-1 (including lecture: Soil behaviour and simple constitutive models for soils).					
Learning outcomes					
After successfully completing the modules, the students are able to					
<ul style="list-style-type: none"> • assess environmental pollutants with regard to their hazard potential and migration behaviour in soil and groundwater, • develop strategies for the demobilization of pollutants and remediation of contaminated sites based on a comprehensive understanding of physical-chemical properties of soils, • identify the design principles of technical barrier systems used for landfills and low contaminated soils. 					
Content					
Interdisciplinary knowledge necessary for the safe disposal of environmentally hazardous substances and the remediation of contaminated soil is presented from the perspective of soil, groundwater and soil-air interactions. Furthermore, technical barriers for the encapsulation of landfills will be addressed.					
The lecture contents cover the following topics:					
<ul style="list-style-type: none"> • Relevant environmental pollutants and their respective industrial sectors • Advective and diffusive transport of pollutants in porous media • Methods for soil remediation and containment of pollutants • Barrier systems for landfills and low contaminated soils • Individual project work dealing with specific questions of environmental geotechnics • Future challenges of environmental geotechnics 					
Teaching methods / Language					
Lectures (2 h/week) / English					
Project work with oral presentations / English					
Modes of assessment					
Final written exam (90 minutes)					
Presentation of project work (Deadline will be announced at the beginning of the semester)					
Requirements for the award of credit points					
Passed final module examination: written examination					
Presentation of the project					
Module applicability (in other study programs)					

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Weight of the mark for the final score 2.5 %
Module coordinator and lecturer(s) Prof. Dr.-Ing. habil. T. Wichtmann (coordinator) W. Lieske, MSc.
Other information