

M 6.2: Remediation Technologies

Responsible for the module:	Prof. Dr.-Ing. Anja Noke			
ECTS credits:	6 ECTS	Total workload:	180h	
Use of the module in this degree programme:	Mandatory module at 6. Semester	Of which face-to-face studies:	60h	
Duration and frequency of the offer:	14 Dates in SoSe	Of which self-study:	120h	
Use of the module in other degree programmes or scientific courses. Further education courses:				
Learning outcomes:				
<p>Knowledge and understanding (broadening knowledge, deepening knowledge, understanding knowledge)</p> <ul style="list-style-type: none"> ▪ <i>Students understand the processes of formation of soils and know the essential mechanical properties of soils as well as their composition and classification.</i> ▪ <i>Students understand the behaviour of water molecules and relevant pollutants in the soil system and the interaction between soil, groundwater, soil air and pollutants.</i> <p>Use, application and generation of knowledge (utilisation and transfer, scientific innovation)</p> <ul style="list-style-type: none"> ▪ <i>The students can classify different soils according to their grain size distribution, loss on ignition and other soil properties and draw conclusions about their use as building material or building ground.</i> ▪ <i>Students are able to evaluate suspected contaminated sites and contaminated land on the basis of available data and independently develop proposals for their remediation and estimate the probable success</i> <p>Communication and cooperation</p> <ul style="list-style-type: none"> ▪ <i>The students are able to recognise the economic and ecological effects of the formation and remediation of contaminated sites and to discuss them in a team.</i> <p>Scientific self-image or professionalism</p> <ul style="list-style-type: none"> ▪ <i>For the students, it becomes part of their professional self-image to sift through data of different origin, format and quality, to critically evaluate it and to use it for an overall assessment of suspected contaminated sites and contaminated land.</i> 				
Teaching content:				
<p>Please name the central subject-related, methodical, practical and/or interdisciplinary contents.</p> <ul style="list-style-type: none"> ▪ <i>Soil genesis, soil composition, soil physical and soil mechanical properties, classification of soils, soil as building material and building ground</i> ▪ <i>Relevant pollutants in soil and groundwater and their properties and behaviour</i> ▪ <i>Recording, investigation and assessment of suspected contaminated sites and contaminated land and their legal classification</i> ▪ <i>Remediation methods: Procedures for securing and decontamination, on-site, in-situ, ex-situ and off-site; thermal, mechanical, biological and combination procedures and their possible applications depending on the contamination present.</i> ▪ <i>Decontamination and remediation planning based on practical examples</i> 				
Language of instruction:	English			
Participation requirements:	none			
Preparation/Literature:	Current literature lists are handed out at the beginning of the semester.			
Further information:	Teaching materials are provided in Aulis.			
Related courses				
Title of the course	Lecturer	SWS	Teaching and learning methods	Forms, scope and

				duration of examinations
Soil Science	Prof. Dr.-Ing. Scholz	1	Seminar	Portfolio (PL)
Soil Lab	Prof. Dr.-Ing. Scholz	1	Laboratory	
Remediation Technologies	Prof. Dr.-Ing. Anja Noke	2	Seminar	
Module-related tutorial	Prof. Dr.-Ing. Anja Noke	1	Guided self-study	