

Faculty of Civil and Environmental Engineering					
Study programme:	Environmental Engineering		Degree level: full-time programme: Master's degree		
Specialization	Advanced Technologies in Environmental Engineering		Diploma path: -		
Module name:	Soil Contamination and Remediation				
Module type:	obligatory	Semester: 2	ECTS 3	Module ID: EE1207	
No. of hrs in semester:	L - 15	C -	LC- 15	P-	SW- S-
Prerequisites:	<i>Complete with prerequisites or "-"</i>		The basic knowledge of soil science, chemistry and hydrology		
Teaching methods:	<i>lecture, laboratory class</i>		Assessment:	<i>Evaluation must be relevant to the intended learning outcomes</i>	
			lecture - test; laboratory class - evaluation of report		
Aims and objectives:	<i>Description of assumed knowledge, skills and social competence the student should have acquired after the completion of the module: student will acquire knowledge about several techniques of wetlands restoration, the threats and chances of restoration; student will acquire the skills in laboratory analyses, which are necessary to accomplish the restoration project; student will understand the impact of engineering on environment</i>				
Module content:	<i>Complete with module content: Characteristics, distribution and types of peatlands. Peatland functions and impacts of damage. Planning for restoration. Restoration approaches. Physico-chemical analyses of peat and water.</i>				
Learning outcomes	<i>Write min. 4, max. 8 learning outcomes in the following order: knowledge - skills - competences. Each learning outcome must be verifiable.</i>			<i>Relevance to the programme learning outcomes</i>	
LO1	student describes the restoration techniques			K_W03, K_W06	
LO2	student is able to develop sampling and analysis plan for organic soils and water			K_U07	
LO3	student is able to analyse organic soil and water quality			K_U07	
LO4	student is able to choose proper restoration method			K_U03, K_U15	
LO5	student understands the impact of engineering on environment			K_K02	
LO6					
LO7					
LO8					
workload	lecture attendance		15X1h	15	
	participation in laboratory classes		15X1h	15	
	preparation for laboratory classes			15	
	work on report			15	
	participation in student-teacher sessions related to the laboratory			5	

student work	preparation for and participation in test		15
		TOTAL:	80
quantitative indicators	Student workload - activities that require direct teacher participation 15h+15h+5h	35	ECTS 1
	Student workload - practical skills activities 15h+15h	30	1
basic references:	1.Schumann M., Joosten H., Global Peatland Restoration Manual. Institute of Botany and Landscape Ecology. Greifswald University, Germany, 2008 2. Mitsch W.J., Gosselink J.G.,Wetlands.John Wiley & Sons, 2007		
supplementary references:	1. Stream Corridor Restoration. Principles, Processes and Practices. USDA Natural Resources and Conservation Service, 2001		
learning outcomes	<i>methods of assessing learning outcomes</i>	type of class (if more than one) where the outcomes are assessed	
LO1	test	L	
LO2	laboratory report	LC	
LO3	laboratory report	LC	
LO4	laboratory report	LC	
LO5	laboratory report	LC	
LO6			
LO7			
LO8			
Department:	Department of Environmental Management and Protection	Group instructors:	dr inż. Agnieszka Wysocka-Czubaszek dr inż. Robert Czubaszek
Date:	19.12.2012	Coordinator:	dr inż. Agnieszka Wysocka-Czubaszek dr inż. Robert Czubaszek

L - lecture C - class LC - laboratory class P-project
SW - specialization workshop S - seminar