

Study Programme: Soil, plant and genetics, Module: Soil Science and Plant Nutrition			
Course Unit Title: Soil degradation and recultivation			
Course Unit Code: 19.ZB10008			
Name of Lecturer(s): Prof. Maja Manojlović, associate professor Vladimir Ćirić			
Type and Level of Studies: Master			
Course Status (compulsory/elective): Elective			
Semester (winter/summer): winter			
Language of instruction: English			
Mode of course unit delivery (face-to-face/distance learning): Face-to-face			
Number of ECTS Allocated: 5			
Prerequisites:			
Course Aims: To acquire knowledge of the student about degradation and recultivation of soil.			
Learning Outcomes: Education and training of students for professional and scientific work in the field of soil protection from degradation, application of recultivation and bioremediation methods.			
Syllabus: Theory: Soil as a natural resource. Soil functions. Types of degradation: Degradation by soil erosion, in-situ damage. Degradation of chemical, physical and biological processes in soil. Carbon cycle in the environment. Factors that affecting organic matter. Measures to increase the content of organic matter in the soil. Legislation and directives for the prevention of soil degradation. The impact of technological progress on soil degradation processes. Soil protection practice. Remediation and recultivation of contaminated and damaged soils. Soil properties that affect the transport of metal ions in plants. Plant indicators of soil contamination with heavy metals. Detoxification - phytovolatilization, chelation, compartmentation. Advantages and disadvantages of fitoremediation. Practice: 1. Soil Survey. 2. Laboratory tests: active and potential acidity, salinity and alkalinity of the soil. 3. Fractionation of soil organic matter 4. Methods for the determination of heavy metals, pesticides and polycyclic aromatic hydrocarbons in soil. 5. Parameters related to the assessment of soil contamination.			
Required Reading: 1.Environmental Assessment of Soil for Monitoring Volume I:Indicators & Criteria (ENVASSO 2006-2008) https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/environmentalassessment-soil-monitoring-volume-i-indicators-criteria)			
Weekly Contact Hours:	Lectures: 2	Practical work: 2	
Teaching Methods: Theoretical and practical teaching			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Active class participation	5	written exam	30
Practical work	5	oral exam	30
Preliminary exam(s)	/	
Seminar(s)	30		