

Study Programme: Environmental Engineering And Occupational Safety Engineering			
Course Unit Title: Monitoring and management of systems			
Course Unit Code: MPK014			
Name of Lecturer(s): Petrović Maja			
Type and Level of Studies: master			
Course Status (compulsory/elective): compulsory			
Semester (winter/ summer): summer			
Language of instruction: english			
Mode of course unit delivery (face-to-face/distance learning): face-to-face			
Number of ECTS Allocated: 6			
Prerequisites: none			
Course Aims: Developing the knowledge in planning and conducting of monitoring and management of industrial and other systems. Introducing students with requirements, implementation and application of environmental legislation in industrial and other systems. Acquiring knowledge for identifying appropriate sampling methods and analytical methods for environmental media testing. Acquiring knowledge for recognizing validity of laboratory test results. Acquiring knowledge for evaluating compliance with legal requirements and interpretation of results obtained from monitoring.			
Learning Outcomes: Upon completion of the course and the passed exam students will be able to: Plan and design environmental monitoring in different industrial and other systems; Identify the relevant legal regulations related to the environmental protection; Identify appropriate methods for sampling and laboratory analysis of different environmental media in order to assess the validity of test results; Determinate compliance and interpret results obtained by monitoring.			
Syllabus. Monitoring and management of systems - terms and definitions. Monitoring and management systems - basic principles and goals. Planning and implementation of regular monitoring practice in order to manage industrial and other systems. Identification of methods for sampling and laboratory analysis of different environmental media in order to realize monitoring. Municipal waste landfills - sources of environment pollution, legislation, planning of monitoring at municipal solid waste landfills. Sampling of landfill gas, leachates and groundwater at municipal solid waste landfills and field measurements (films). Laboratory analysis of leachates and groundwater (remote laboratory approach). Evaluation of compliance and interpretation of results obtained from the municipal solid waste landfill. Planning and design of monitoring in different industrial systems (case studies).			
Required Reading: Relevant literature in English, tbd			
Weekly Contact Hours: 2	Lectures: 3	Practical work: 0	
Teaching Methods: Lectures. Laboratory exercises. Consultations. In order to collect pre-examination points during the semester, students are obliged to attend regular lectures and laboratory exercises and to solve the case study that they will present. After successfully completing the pre-service obligations, students are entitled to take the exam. The exam consists of a written and mandatory oral part. During the semester, students can pass a written part of the exam through two colloquiums. If the student does not pass the written part of the exam through the form of a colloquium, the student enters the written part of the exam which covers the materials of the entire semester. The overall assessment of the exam is formed by summing up the number of points won from pre-examination, colloquium (or written exam) and oral examination.			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Attendance			
Computer exercises			
Tests (4x)			

