

(Table 5.2) Course unit description

Study program : Chemistry			
Type and level of studies: Master academic studies			
Course unit: Remediation Methods of chemical accidents			
Teacher in charge : Matović D. Zoran			
Language of instruction: English			
ECTS: 5			
Prerequisites: Enrolled the first year of the study program			
Semester: <i>Winter Semester</i>			
Course unit objective Introduce students to the possibility of occurrence and types of accidents in the environment and methods for their rehabilitation. Training students to independently analyze and apply methods of remediation of chemical accidents.			
Learning outcomes of Course unit Acquired skills to manage in situations of ecological accidents and disruption of ecological systems by pollutants. Recognizing the consequences of an accident on the basis of geological and atmospheric conditions and properties of substances and compounds that are uncontrollably released into the water, air and land.			
Course unit contents <i>Theoretical classes</i> Theoretical study: Contaminants and pollutants; Natural sensitivity and vulnerability of the geological environment pollution; Measures to prevent accidents and methods of revitalization. Precursors of accidents in the environment. View the types of pollutants and their behavior in the environment. Chemicals of importance to the environment, the toxicity of chemicals. Sources of environmental accidents. Types and sampling during the accident, the analysis parameters. Accidents and released in the air. Accidents and released in the water. Accidents and released in the country. Accidents and cross-border impact. Documented accidents and Information. An early warning system. Regulations in the country and international regulations. Examples from practice. * Theoretical teaching is much improved by using modern methods such as Turning Technologies LLC (Turning Point) knowledge quizzes and interactive whiteboard. The main role lies in better communication with students, as well as checking the acquired knowledge during lectures and also checking the ability of teachers to transmit knowledge to students. The said equipment was purchased thanks to the TEMPUS project: "Modernisation of Post Graduate Studies in Chemistry and Chemistry Related Programmes, 511044-TEMPUS-1-2010-1-UK-TEMPUS-JPCR". <i>Practical classes</i> Audio-visual methods of representing chemical accidents and did their rehabilitation. Field work (national institutions, fire departments of factories, plants and factory).			
Literature 1. <i>Strategies for Accelerating Cleanup at Toxic Waste Sites: Fast-Tracking Environmental Actions and Decision Making</i> , Scott Marshall Payne, S E T a C Foundation 2. <i>Geoenvironmental Engineering: Site Remediation, Waste Containment, and Emerging Waste Management Technologies</i> , Hari D. Sharma, Krishna R. Reddy, John Wiley & Sons (May 20, 2004) 3. <i>Accident Precursor Analysis and Management: Reducing Technological Risk Through Diligence</i> (2004), The National Academies Press. 4. <i>OECD Guiding Principles for Chemical Accident Prevention, Preparedness and Response</i> (2003), OECD Environment, Health and Safety Publications.			
Number of active teaching hours			Other classes /
Lectures: 2	Practice: 2	Other forms of classes:/ Independent work: /	
Teaching methods Lectures, colloquiums, seminars, laboratory exercises. Methods of Exercise: Practical classes will run visit national institutions, fire brigades of town, industries and manufacturing plants.			
Examination methods (maximum 100 points)			
Exam prerequisites	No. of points:	Final exam	No. of points:
Student's activity during lectures	10	oral examination	15
practical classes/tests	20	written examination	15

Seminars/homework	30	
Colloquiums	10		
Other	/		
Grading system			
Grade	No. of points	Description	
10	91-100	Excellent	
9	81-90	Exceptionally good	
8	71-80	Very good	
7	61-70	Good	
6	51-60	Passing	
5	<51	Failing	