

Course Unit Descriptor

Study Programme: Bachelor Academic Studies in Chemistry - Quality Control and Environmental Management, Bachelor Academic Studies in Environmental Protection – Environmental Protection Analyst			
Course Unit Title: Accidents in the environment			
Course Unit Code: IKK-202			
Name of Lecturer(s): Full Professor Milena Bečelić-Tomin			
Type and Level of Studies: Bachelor of Science Degree			
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: None			
Course Aims: Introduce students to the possibility of accident occurrence, types of accidents and environmental monitoring after accidents.			
Learning Outcomes: Identifying potential sites of accidents in industrial installations, types and causes of industrial accidents. Gaining knowledge about the consequences of an accident on the properties of substances, compounds that are uncontrollably discharged into the water, air and ground.			
Syllabus:			
<i>Theory</i>			
Industrial accidents and natural disasters. Managing risk of major industrial accidents, accident prevention, risk assessment for the environment and human health, controlling risks and activities, planning emergency measures. Methods for hazard identification. The effects of the explosion and fire; liquid vapour explosions in a state of boiling; explosion of pressure vessels, release and expansion of gases, vapours, liquids, aerosols and dust hazardous materials. Local and international regulations. Domino effect. Behaviour of pollutants released during accidents into the environment. Sensitivity of various environmental media to released pollutants. Chemical substances that can be released during accidents. Gathering information about accidents. Types and sampling of environmental media after accidents. Ecosystems potentially threatened by accidents.			
<i>Practice</i>			
Practical instruction through case studies follows the theoretical instruction.			
Required Reading:			
1. J. Casal: Evaluation of the Effects and Consequences of Major Accidents in Industrial Plants, Volume 8 (Industrial Safety Series) (Industrial Safety Series), Elsevier Science, 2007			
2. H. Wood: Disaster and Minewater, Good Practice and Prevention, IWA Publishing, 2012.			
Weekly Contact Hours: 4	Lectures: 2	Practical work: 2	
Teaching Methods: Lectures, seminar(s)			
Knowledge Assessment (maximum of 100 points): 100			
Pre-exam obligations	points	Final exam	points
Active class participation	5	Written exam	40
Practical work	5		
Preliminary exam(s)	20	Oral exam	20
Seminar(s)	10		