

Study program: Bachelor academic studies in chemistry – quality control and environmental management; Bachelor Academic Studies in Environmental Protection-Environmental Protection Analyst, Bachelor with honours in Geography			
Course title: Accidents in the environment (IKK202)			
Status: elective			
Teacher(s): dr Milena Bečelić, dr Dejan Krčmar			
ECTS: 7			
Requirements: none			
Learning objectives 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>Theoretical instruction</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>Practical instruction</i> Practical instruction follows the theoretical instruction			
Literature: 1. Accident Precursor Analysis and Management: Reducing Technological Risk Through Diligence, The National Academies Press, 2004. 2. 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. 3. H.Wood: Disaster and Minewater, Good Practice and Prevention, IWA Publishing, 2012. Additional literature: OECD Guiding Principles for Chemical Accident Prevention, Preparedness and Response (2003), OECD Environment, Health and Safety Publications.			
Methods of Teaching Frontal teaching, exercises, project, consultations.			
Weekly teaching load 5 (75)	Lectures 2	Exercises 2	Other forms of teaching 1
Grading method (maximu 100 points)			
Pre-examination assignments	points	Final examination	points
Activities during lectures	0-5	Written examination	0-30
Activities during exercises	0-25	Oral examination	0-10
Colloquia	0-15	
Seminar paper	0-15		