

Course Unit Descriptor

Study Programme: Bachelor Academic Studies in Environmental Protection – Environmental Protection Analyst			
Course Unit Title: Environmental Chemistry			
Course Unit Code: OZZS-203			
Name of Lecturer(s): Assistant Professor Branko Kordić			
Type and Level of Studies: Bachelor of Science Degree			
Course Status (compulsory/elective): Compulsory			
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: 8			
Prerequisites: None			
Course Aims: To provide students with systematic knowledge of the most important areas of physical chemistry necessary for understanding the physical and chemical processes in the environment.			
Learning Outcomes: General knowledge and understanding of the state of the matter, energy changes in physical and chemical processes, chemical and physical equilibrium, the processes at interfaces and chemical kinetics.			
Syllabus: <i>Theory</i> Gaseous state. Ideal and real gas state. The laws of thermodynamics, thermochemistry, chemical potential. Liquid state. Surface tension and viscosity. Chemical equilibrium. Equilibrium between phases. Thermodynamic principles of multi-component equilibria. Ideal and dilute solutions. Real solutions. Chemical kinetics. Processes at interfaces. Fundamentals of colloidal chemistry. <i>Practice</i> Computational tasks from the major topics in the curriculum.			
Required Reading: 1. Atkins, P.: Atkins' physical chemistry, New York: Oxford University Press, 2010. 2. Schwarzenbach, R.P., Gschwend, P.M., Imboden, D.M.: Environmental Organic Chemistry – Second Edition, Wiley, 2003.			
Weekly Contact Hours: 6	Lectures: 3	Practical work: 3	
Teaching Methods: Lectures, calculation exercises, consultation.			
Knowledge Assessment (maximum of 100 points): 100			
Pre-exam obligations	points	Final exam	points
Active class participation	10	Written exam	40
Practical work	20	Oral exam	10
Preliminary exam(s)	20		