

Course title	Physico-chemical processes in the environment						
Code	ZDIK31						
Study	Postgraduate Interdisciplinary University Study Programme <i>Environment Protection and Nature Conservation</i>						
Semester	II.						
ECTS	5						
Course state	Elective (general)						
Professors	Izv. prof. dr. sc. Maja Dutour Sikirić, Associated professor Doc. dr. sc. Darija Domazet Jurašin, assistant professor						
Colaborators							
Entrance conditions	-						
Aim	Introduce students with basic knowledge about physico-chemical processes in the environment.						
Learning outcomes	The purpose of this course is to introduce students to the basic principles of physico-chemical processes that regulate chemical reactivity, transformation, retention and bioavailability of ions, molecules, radicals, inorganic and organic compounds in the environment .						
Connections between students activity, learning outcomes and evaluation						Points*	
	Students activity	ECTS	Learnin g outcom es	Course activity	Evaluation methods	min	max
	Active participation	1	1-5	Lectures	Attendance record		
	Preparation of seminar paper	1	1-5	Seminar	Seminar evaluation		
	Preparation for the exam	3	1-5	Test	Test evaluation		
Total	5						
Consultations							
Teaching form	Lectures		Seminars		Exercises		
No. of hours	15		-		-		
Content	<ol style="list-style-type: none"> 1. Introduction 2. Elements of chemistry (chemical thermodynamics, chemical kinetics) 3. Physico-chemical processes in the environment (ionic reactions, dissolution, precipitation, oxidation-reduction processes, adsorption, ionic exchange, diffusion, filtration) 4. Colloid systems 5. Surfactants and environment 						
Compulsory literature	<ol style="list-style-type: none"> 1. M. Dutour Sikirić, N. Filipović-Vinceković, V. Tomašić; 2005: Physico-chemical processes in the environment, lecture notes 2. P. Atkins, J. De Paula 2015: Physical Chemistry, 10th Edition, Oxford University Press, Oxford 						
Optional literature	<ol style="list-style-type: none"> 1. D. L. Sparks, 2003: Environmental Soil Chemistry, 2nd Edition, Academic Press 2. W. Stumm, J. J. Morgan, 1998: Aquatic Chemistry, 3rd Edition, John Wiley & Sons, Inc., New York 3. S. E. Manahan, 2010: Environmental Chemistry, 9th Edition CRC Press, LLC., Boca Raton, Florida 						

Completion condition	Active participation
Exam form	Oral or written (seminar paper)
Possible teaching languages	Croatian / English
Form of quality monitoring	Student survey