

Title	Electrochemical methods in environmental analysis						
Code	ZDIK29						
Study Program	Postgraduate Interdisciplinary University Programme Environment protection and Nature Conservation						
Semester	III.						
ECTS	5						
Status	elective						
Lecturer	Associate Professor Lidija Jakobek, PhD						
Co-Lecturers							
Requirements for Enrolment	Enrollment in postgraduate interdisciplinary specialist study						
Objectives	Introduction to electroanalytical technique principles, their advantages and disadvantages, the application of specific techniques in the environmental analysis						
Learning Outcomes	<ol style="list-style-type: none"> 1. Explain the electroanalytical technique principles 2. Discuss advantages and disadvantages of specific electroanalytical techniques 3. Suggest specific electrochemical method for the analysis of environmental samples (environmental pollutants) 4. Discuss (anticipate) problems in the application of specific method 5. Suggest the solution for that problem and apply electrochemical method in the analysis of environmental samples 						
Connection between Learning Outcomes, Curricular and Student Activities	Student Activities	ECTS	Learning Outcomes	Curricular Activities	Methods of Assessment	Credits*	
						min	max
	Lecture attendance	0.25	1-2	Lecture(consultation	record	2	5
	Seminar attendance	0.25	1-2	Seminar	record	3	5
	Working assignment writing	3	3-5	Work assignment (essay)	Essay Review	30	60
	Preparation and presentation of the assignment	1.5	3-5	Discussion and analysis	Oral exam	20	30
Total	5					55	100
Consultations	Monday after 12 am, or any other time according to the student requirements						
Learning Activities	Lectures		Seminars		Practice		
Hours	10		5				
Contents / Teaching Units	-Basics of electrochemistry and electroanalytical methods (classification, electrochemical cell, electrodes) -potentiometric methods (potentiometric measurements, potentiometric titration) -conductometry (basic principal, conductometric titration) -coulometry (potentiostatic coulometry, coulometric titration) -voltammetry (linear sweep voltammetry, cyclic voltammetry) -the application of electroanalytical methods in the environmental analysis						
Obligatory Literature	<ol style="list-style-type: none"> 1. Piljac, I., Elektroanalitičke metode, RMC, Zagreb, 1995. 2. Skoog, D.A., West, D.M., Holler, F.J. Osnove analitičke kemije, Školska knjiga, Zagreb, 1999. 3. Rajeshwar, K., Ibanez, J.G. Environmental electrochemistry, Elsevier Science and Technology Books, 1997. 						

Recommended literature	1. Sequeira, C.A.C. Studies in Environmental sciences 59, Environmental oriented electrochemistry, Elsevier, Amsterdam, London, New York, Tokyo, 1994.
Requirements for Acquiring Signature	The determination of the working assignment (essay) title
Type of Exam	Essay writing + oral presentation
Lectures Language	Croatian, English
Quality Monitoring	Interview after lectures