

COURSE OFFERED

Name of the course	Polish	Nowoczesne metody chemii analitycznej
	English	Modern Methods in Analytical Chemistry

1. LOCATION OF THE COURSE OF STUDY WITHIN THE EDUCATION SYSTEM

1.1. Section ¹	Section of Exact and Natural Sciences
1.2. Discipline ²	Chemical Sciences
1.3. Type of education	Stationary
1.4. Level of education	Doctoral School
1.5. Person preparing the course description	dr hab. Sławomir Michałkiewicz prof UJK
1.6. Contact	slawomir.michalkiewicz@ujk.edu.pl

2. GENERAL CHARACTERISTICS OF THE COURSE OF STUDY

2.1. Type of course ³	specialized subjects in the discipline
2.2. Language of the course	English

3. DETAILED CHARACTERISTICS OF THE COURSE OF STUDY

3.1. Type of classes ⁴		Laboratory
3.2. The number of hours ⁵		15
3.3. Location of classes		Classes in the laboratory of the Institute of Chemistry, UJK
3.4. Type of assessment		pass with grade
3.5. Didactic methods		practical exercises
3.6. Literature	basic	1. F. Scholz, Electroanalytical Methods, Springer, Berlin Heidelberg, 2010. 2. Z. Galus, fundamentals of Electrochemical Analysis, Ellis Horwood, New York 1994. 3. J. Wang, Analytical Electrochemistry, Wiley-VCH, New York 2000.
	supplementary	1. D.A. Skoog, D.M. West, F.J. Holler, S.R. Crouch, Podstawy chemii analitycznej, tom II, PWN, Warszawa 2007 (in polish). 2. Instrumentalne metody analizy chemicznej, red. W. Kubiak, J. Gołaś, skrypt AGH w Krakowie, Wyd. Naukowe AKAPIT, Kraków 2005 (in polish). 3. A. Cygański, Podstawy metod elektroanalitycznych, Wydawnictwo Naukowo-Techniczne, Warszawa 1999 (in polish).

4. OBJECTIVES, SYLLABUS CONTENT AND INTENDEND LEARNING OUTCOMES

4.1 Course objectives (including the form of classes)
C01. Deepening knowledge of the theoretical foundations of electrode processes: analyte transport, electrode reactions, equipment and voltammetric techniques used in chemical electroanalysis.
C02. Preparation for practical solution of chemical problems using voltammetric techniques.

¹ Section of Humanities:, Social Sciences, Section of Exact and Natural Sciences, Section of Medical and Health Sciences, Section of Arts.

² History,Linguistics, Literary Studies, Medical Sciences, Health Sciences, Political and Administrative Sciences, Legal Sciences, Security Sciences, Pedagogy, Communication and Media Studies, Management and Quality Studies, Biological Sciences, Chemical Sciences, Physical Sciences, Earth and related Environmental Sciences, Visual Arts and Artwork Conservation, Musical Arts.

³ General courses, domain specific subjects in the section, disciplinary subjects in the sections, specialized subjects in the discipline.

⁴ Classes, lecture, seminar.

⁵ Consistent with the education program at the Doctoral School
Jan Kochanowski University in Kielce.

SUBJECT LEARNING OUTCOMES	METHOD OF ASSESSMENT (+/-)																				
	Oral/written exam			Kolokwium			Project			activity in class			Own work			Group work			Others/ written report		
	The type of classes			The type of classes			The type of classes			The type of classes			The type of classes			The type of classes			The type of classes		
	L	C	S	L	C	S	L	C	S	L	C	S	L	C	S	L	C	S	L	C	S
W01											+									+	
W02											+										

W03											+								+	
U01											+								+	
U02											+								+	
U03											+								+	
K01											+								+	

7. CRITERIA OF ASSESSMENT OF THE INTENDED LEARNING OUTCOMES

Form of classes	Grade	Criterion of assessment
Lecture (L) ⁶	3,0	56-64% of possible points in the areas of knowledge, skills and social competences
	3,5	65-73% of possible points in the areas of knowledge, skills and social competences
	4,0	74-82% of possible points in the areas of knowledge, skills and social competences
	4,5	83-91% of possible points in the areas of knowledge, skills and social competences
	5,0	92-100% of possible points in the areas of knowledge, skills and social competences

Accepted for execution

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⁶ Niepotrzebne usunąć.