


**KAPITAŁ LUDZKI**  
 NARODOWA STRATEGIA SPÓJNOŚCI

 Projekt współfinansowany przez  
 Unię Europejską w ramach  
 Europejskiego Funduszu  
 Społecznego

**UNIA EUROPEJSKA**  
 EUROPEJSKI  
 FUNDUSZ SPOŁECZNY


<b>Course title</b>		<b>ECTS code</b>	
Advanced chemistry laboratory - bioinorganic chemistry		13.3.0433	
<b>Name of unit administrating study</b>			
Faculty of Chemistry			
<b>Studies</b>			
<b>faculty</b>	<b>field of study</b>	<b>type</b>	drugiego stopnia
Wydział Chemii	Chemia	<b>form</b>	stacjonarne
		<b>specjalty</b>	analityka i diagnostyka chemiczna, chemia obliczeniowa
		<b>specialization</b>	wszystkie
<b>Teaching staff</b>			
dr hab. Dariusz Wyrzykowski; dr Aleksandra Tesmar			
<b>Forms of classes, the realization and number of hours</b>		<b>ECTS credits</b>	
<b>Forms of classes</b>		1	
Laboratory classes		classes - 20 h	
<b>The realization of activities</b>		tutorial classes – 2 h	
classroom instruction		student's own work – 3 h	
<b>Number of hours</b>		Total: 25 h - 1 ECTS	
Laboratory classes: 20 hours			
<b>The academic cycle</b>			
2022/2023 winter semester			
<b>Type of course</b>		<b>Language of instruction</b>	
obligatory		polish	
<b>Teaching methods</b>		<b>Form and method of assessment and basic criteria for evaluation or examination requirements</b>	
conducting experiments		<b>Final evaluation</b>	
		Graded credit	
		<b>Assessment methods</b>	
		- ssignment work – conducting research and presenting results	
		- (mid-term / end-term) test	
		- graded course credit based on individual grades obtained during the semester	
		<b>The basic criteria for evaluation</b>	
		Lab classes - execution of laboratory exercises, correct preparation of reports from conducted laboratory work, obtaining a positive assessment from a test that includes laboratory exercises	
<b>Method of verifying required learning outcomes</b>			
<p>The student solves problems in writing (tests) or orally (answer stopped) in the field of synthesis and physicochemistry of chemical compounds, as well as the use of analytical techniques (K_W01, K_W03, K_W07, K_W10). The tutor observes the Student's work, paying attention to the Student's compliance with the rules of occupational health and safety.</p> <p>The tutor assesses the way the Student uses research equipment to solve the problems posed to him (K_U01, K_U02). The lecturer assesses the calculation method, the analysis of the measurement results and the conclusions from the experiments on the basis of the report prepared by the student (K_U08).</p> <p>Posing scientific and research problems to the student, and then analyzing his ability to solve them in a team (K_K01). The student solves the problems posed by the lecturer regarding the use of the acquired chemical knowledge and skills to protect human health and life and the natural environment.</p>			
<b>Required courses and introductory requirements</b>			
<b>A. Formal requirements</b>			
Completed inorganic chemistry course			

<b>B. Prerequisites</b> none	
<b>Aims of education</b>	
<ul style="list-style-type: none"> <li>- a continuation and extension of the course of inorganic, physical and coordination chemistry</li> <li>- the aim of the course is to acquaint students with the fundamental procedures of the examination of compounds of biological interest</li> <li>- this laboratory is intended to familiarize students with a designing of an experiment, an interpretation of the data and the methods of a visualization and a presentation of the results</li> <li>- a presentation the most important contemporary issues related to the investigation of the biological properties of the compounds based on the chemical tests</li> <li>- a development of the ability for planning and carrying out a single-handed experiments as well as for interpreting obtained data</li> </ul>	
<b>Course contents</b>	
<p>Laboratory techniques used for investigating of coordination compounds.</p> <p>The stopped flow method for studying reaction kinetics.</p> <p>Isothermal titration calorimetry for studying macromolecule - ligand interactions.</p> <p>The use of various buffer solutions for the preparation of biological samples for chemical tests. Familiarizing with the support of computer programs used for analysis and presentation of the results obtained.</p>	
<b>Bibliography of literature</b>	
<p>Literature required to pass the course</p> <p>S. Gaisford, M. A. A. O'Neill, "Pharmaceutical Isothermal Calorimetry", Informa Healthcare USA, Inc., NY (2007)</p> <p>J. Keeler, "Kinetics of Chemical Reactions", University of Cambridge, Department of Chemistry, 25, IA Chemistry 2002/03</p> <p>Extracurricular readings</p> <p>L. Stryer, J. L. Tymoczko, J. M. Berg, „Biochemistry”, 5 Edition 2005</p>	
<b>The learning outcomes (for the field of study and specialization)</b>	<b>Knowledge</b>
	<b>Skills</b>
	<b>Social competence</b>
<b>Contact</b>	
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