



**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>	
Biocatalysis		13.3.1214	
<b>Name of unit administrating study</b>			
null			
<b>Studies</b>			
<b>faculty</b>	<b>field of study</b>	<b>type</b>	second tier studies (MA)
Faculty of Chemistry	Chemical Business	<b>form</b>	full-time
		<b>specialty</b>	all
		<b>specialization</b>	all
Faculty of Chemistry	Chemistry	<b>type</b>	second tier studies (MA)
		<b>form</b>	full-time
		<b>specialty</b>	all
Faculty of Chemistry	Environmental Protection	<b>specialization</b>	all
		<b>type</b>	second tier studies (MA)
		<b>form</b>	full-time
		<b>specialty</b>	all
		<b>specialization</b>	all
<b>Teaching staff</b>			
prof. dr hab. Adam Lesner			
<b>Forms of classes, the realization and number of hours</b>		<b>ECTS credits</b>	
<b>Forms of classes</b>		2	
Lecture		classes - 15 h	
<b>The realization of activities</b>		tutorial classes - 15 h	
lectures in the classroom		student's own work - 20 h	
<b>Number of hours</b>		TOTAL: 50 h - 2 ECTS	
Lecture: 15 hours			
<b>The academic cycle</b>			
2022/2023 winter semester			
<b>Type of course</b>		<b>Language of instruction</b>	
an elective course		english	
<b>Teaching methods</b>		<b>Form and method of assessment and basic criteria for evaluation or examination requirements</b>	
Multimedia presentation with discussion		<b>Final evaluation</b>	
		Graded credit	
		<b>Assessment methods</b>	
		Written exam with 3-5 open questions	
		<b>The basic criteria for evaluation</b>	
		: exam (3-5 open questions) positive grades range:	
		100%: 5.0	
		81-90%: 4.5	
		71-80%: 4.0	
		61-70%: 3.5	
		51-60%: 3.0	
		< 51%: 2.0	
		Assessment criteria in accordance with the University of Gdańsk Study Regulations	
<b>Method of verifying required learning outcomes</b>			
Chemical Buissines, Chemistry and Environmental protection: Written exam containing of 3-5 open questions focused onthe issues mentioned during the lecture.			
<b>Required courses and introductory requirements</b>			

<p><b>A. Formal requirements</b> lack</p>	
<p><b>B. Prerequisites</b> lack</p>	
<p><b>Aims of education</b></p> <p>This course will provide the principles of utilization of enzymes in various branches of human life (Health care system, industry and science). The examples of broadly utilized crucial enzymes will be provided. Summing up the take home message from this lecture will be ability to understand and identify the impact of biocatalysis in human life.</p>	
<p><b>Course contents</b></p> <p>Short introduction to enzymology. Enzymes as biocatalysis. Limited instances of selected enzymes broadly utilized in all aspects of human life including industry, health system and science) will be provided. The lecture will deliver examples of technological processes in that enzymes play crucial role.</p>	
<p><b>Bibliography of literature</b></p> <p>Literature required to pass the course: any enzymology handbook Extracurricular readings pubmed medline articles on the lecture topic</p>	
<p><b>The learning outcomes (for the field of study and specialization)</b></p> <p>Chemical Business: K_BChII_W01 knows and understands in-depth complex physicochemical processes and is able to analyze their course in connection with other fields of science K_BChII_W02 knows and understands the axiological conditions regarding the use of modern techniques and measuring instruments as well as IT tools in chemistry, taking into account economic aspects K_BChII_U01 is able to based on the acquired knowledge, propose a solution to problems in chemistry, taking into account the economic aspect, using advanced measurement and analytical techniques K_BChII_U02 is able to define his/her interests, develop them within the chosen field of study and in connection with the subject of the master's thesis by implementing the process of self-education and planning his/her professional career K_BChII_K03 is willing to critically assess the level of his/her own knowledge in the light of the achievements of the studied scientific discipline K_BChII_K04 is willing to properly assess the acquired knowledge, respect it and disseminate it in order to solve specific cognitive and practical issues</p> <p>Chemistry: K_W01 uses in-depth knowledge of spectroscopic methods of chemical compound analysis K_W03 demonstrates in-depth knowledge in the field of modern measuring techniques used in chemical analysis K_U03 finds necessary information in specialist literature, databases and other sources, lists basic scientific journals in chemistry K_U04 applies acquired knowledge of chemistry and related scientific disciplines K_K01 knows the limitations of her/his own knowledge;</p>	<p><b>Knowledge</b></p> <p>Students are able to provide the fundamental information provided in the lecture including enzymes and their utilization in selected important processes. Also illustrative examples of biocatalytic process will be in scope of his/her knowledge. Additionally students will be able to understand and explain mode of action of selected enzymes.</p>
	<p><b>Skills</b></p> <p>Students are able to present and explain chemical phenomena and processes, i.e. explain foundation of particular techniques, interpret data analyze information linked to bioanalysis including text, tables, plots, schemes, figures; formulate descriptions of different chemical phenomena and processes, describe them with use of own words and figures (schemes); explain similarities and differences in properties of processes, explain course of different phenomena from everyday life with the use of chemical knowledge in correlation with other sciences; interpret information, formulates conclusions and explain opinions</p>
	<p><b>Social competence</b></p> <p>Students: understand need for learning, demonstrate inventiveness in determination of main concerns essential for understanding of various duties; understand social aspects of pragmatic usage of knowledge and skills and related obligation</p>

understands the need for further education and can inspire other people to do so  
K\_K05 understands the need for independent search of information in scientific literature and popular science magazines

**Contact**

[adam.lesner@ug.edu.pl](mailto:adam.lesner@ug.edu.pl)