


**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>	
Proteomics. Analysis of proteome.		13.3.1223	
<b>Name of unit administrating study</b>			
null			
<b>Studies</b>			
<b>faculty</b>	<b>field of study</b>	<b>type</b>	drugiego stopnia
Wydział Chemii	Biznes chemiczny	<b>form</b>	stacjonarne
		<b>specjalty</b>	wszystkie
		<b>specialization</b>	wszystkie
		<b>type</b>	drugiego stopnia
Wydział Chemii	Chemia	<b>form</b>	stacjonarne
		<b>specjalty</b>	wszystkie
		<b>specialization</b>	wszystkie
		<b>type</b>	drugiego stopnia
Wydział Chemii	Ochrona środowiska	<b>form</b>	stacjonarne
		<b>specjalty</b>	wszystkie
		<b>specialization</b>	wszystkie
		<b>type</b>	drugiego stopnia
<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>		4 classes - 30 h tutorial classes - 30 h student's own work- 40 h TOTAL: 100 h - 4 ECTS	
Lecture			
<b>The realization of activities</b>			
classroom instruction			
<b>Number of hours</b>			
Lecture: 30 hours			
<b>The academic cycle</b>			
2024/2025 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>	
		Lecture: 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>			
<b>Required courses and introductory requirements</b>			
<b>A. Formal requirements</b>			
biochemistry organic chemistry			

<b>B. Prerequisites</b>	
lack	
<b>Aims of education</b>	
Provide the fundamental information focused on proteome analysis including protein properties, proteome organization and complexity, proteome dynamics in selected organisms. Proteome qualitative and quantitative methods of proteome assessment. Basic analytical techniques. Advanced analysis methods.	
<b>Course contents</b>	
Properties of proteins. Protein in cell organization. Basic separation techniques of proteins mixtures. Proteome dynamics. Mass spectrometry coupled techniques. Top-down approach versus bottom-up. Quantitative proteome studies using in cell labelling. Analysis of data.	
<b>Bibliography of literature</b>	
Literature required to pass the course: Proteomics – any book for students focused on the topic Extracurricular readings: Pubmed Medline review articles in the field of proteomic	
<b>The learning outcomes (for the field of study and specialization)</b>	<b>Knowledge</b>
Chemical Business: K_BChII_W01 knows and understands in-depth complex physicochemical processes and is able to analyse 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  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; understands the need for further education and can inspire other people to do so K_K05 understands the need for independent search of	Students are able to provide the fundamental information provided in the lecture including proteins and proteome of living cells. Also the selected distinct separation techniques will be in scope of his/her knowledge. Additionally students will be able to understand and explain mass spectrometry coupled methods of proteome analysis ie bottom up or top down approaches. Finally students get some introduction into the large data manipulation and interpretation.
	<b>Skills</b>
	Students are able to present and explain chemical phenomena and processes, i.e. explain foundation of particular techniques, interpret data analyze information linked to proteome analysis 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 particular techniques, 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
	<b>Social competence</b>
	Students: understand need for learning, demonstrate inventiveness in determination of main concerns essential d for understanding of various duties; understand social aspects of pragmatic usage of knowledge and skills and related obligation

information in scientific literature and popular science magazines	
<b>Contact</b>	
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