


KAPITAŁ LUDZKI
 NARODOWA STRATEGIA SPÓJNOŚCI

 Projekt współfinansowany przez
 Unię Europejską w ramach
 Europejskiego Funduszu
 Społecznego

UNIA EUROPEJSKA
 EUROPEJSKI
 FUNDUSZ SPOŁECZNY


Course title		ECTS code	
Proteomics. Analysis of proteome.		13.3.1223	
Name of unit administrating study			
null			
Studies			
faculty	field of study	type	drugiego stopnia
Wydział Chemii	Biznes chemiczny	form	stacjonarne
		specjalty	wszystkie
		specialization	wszystkie
		type	drugiego stopnia
Wydział Chemii	Chemia	form	stacjonarne
		specjalty	wszystkie
		specialization	wszystkie
		type	drugiego stopnia
Wydział Chemii	Ochrona środowiska	form	stacjonarne
		specjalty	wszystkie
		specialization	wszystkie
		type	drugiego stopnia
Teaching staff			
prof. dr hab. Adam Lesner			
Forms of classes, the realization and number of hours		ECTS credits	
Forms of classes		4 classes - 30 h tutorial classes - 30 h student's own work- 40 h TOTAL: 100 h - 4 ECTS	
Lecture			
The realization of activities			
classroom instruction			
Number of hours			
Lecture: 30 hours			
The academic cycle			
2024/2025 winter semester			
Type of course		Language of instruction	
an elective course		English	
Teaching methods		Form and method of assessment and basic criteria for evaluation or examination requirements	
Multimedia presentation with discussion		Final evaluation	
		Graded credit	
		Assessment methods	
		Written exam with 3-5 open questions	
		The basic criteria for evaluation	
		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	
Method of verifying required learning outcomes			
Required courses and introductory requirements			
A. Formal requirements			
biochemistry organic chemistry			

B. Prerequisites	
lack	
Aims of education	
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.	
Course contents	
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.	
Bibliography of literature	
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	
The learning outcomes (for the field of study and specialization)	Knowledge
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.
	Skills
	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
	Social competence
	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	
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