

Subject card

Subject name and code	Preparation of biomolecules. Structure and function of proteins, PG_00147203						
Field of study	Genetics and Experimental Biology						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2027/2028		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	5		ECTS credits		1.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Laboratory of Microbial Biochemistry -> Department of General and Medical Biochemistry -> Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Dorota Kuczyńska-Wiśnik				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	0.0	15
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	15		2.0		8.0	25
Subject objectives	Expanding knowledge in the field of protein biochemistry, presenting the latest literature data on conformational diseases						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[GBEL3_W03] The molecular mechanisms of genetic information transmission and gene expression, as well as the molecular and genetic basis of human physiology and diseases, including infectious diseases.		Knows the molecular and genetic basis of human diseases		[SW4] test/exam - oral or written		
Subject contents	Protein structure (secondary, tertiary and quaternary, inherently disordered proteins), mechanisms protecting cells against proteostasis disorders, diseases related to abnormal conformation and aggregation of proteins.						
Prerequisites and co-requisites	Passing the subjects biochemistry and molecular biology. Knowledge of basic information about the structure and synthesis of proteins						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	written test with test questions and open questions (tasks)		51.0%		100.0%		

Recommended reading	Basic literature	1. Original source works from scientific journals 2. Introduction to protein structure (C. Branden, J. Tooze, Garland Publ. Inc. NY, 1999) 3. Protein folding in the cell (A. Horwich, San Diego Academic Press, 2002) 4. Protein misfolding and disease: principles and protocols (P. Bross, N. Gregersen, Humana Press, 2003) 5. Krótkie wykłady: biochemia (Hames, B.D. i Hooper, N.M. PWN, Warszawa 2007)
	Supplementary literature	• J.M. Berg, J.L. Tymoczko, L. Stryer, Biochemia, 2009, PWN, Warszawa • Laskowska E., Kuczyńska-Wiśnik D., Lipińska B. (2019) Proteomic analysis of protein homeostasis and aggregation J Proteomics 30 : 98-112 • Kuczynska-Wisnik D., Stojowska-Swędryńska K., Laskowska E. (2024) Intracellular protective functions and therapeutical potential of trehalose Molecules 29; 2088
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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