

**Subject card**

<b>Subject name and code</b>	Preparation of biomolecules. Structure and function of proteins, PG_00198356						
<b>Field of study</b>	Genetics and Experimental Biology						
<b>Date of commencement of studies</b>	October 2026	<b>Academic year of realisation of subject</b>			2028/2029		
<b>Education level</b>	Bachelor's studies	<b>Subject group</b>			Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>			at the university		
<b>Year of study</b>	3	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	5	<b>ECTS credits</b>			3.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>			credit		
<b>Conducting unit</b>	Laboratory of Microbial Biochemistry -> Department of General and Medical Biochemistry -> Faculty of Biology -> Rector						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr hab. Dorota Kuczyńska-Wiśnik				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	0.0	0.0	45.0	0.0	0.0	45
	E-learning hours included: 0.0						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	<b>Number of study hours</b>	45		5.0		25.0	75
<b>Subject objectives</b>	familiarizing students with methods of protein isolation from a natural source and isolation of recombinant proteins from various expression systems(						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[GBEL3_W05] A graduate has an advanced knowledge and understanding of: principles for planning research based on the achievements of biological sciences and related disciplines and the possibility of putting their results into practice, principles for the operation of equipment and apparatus used in molecular genetics research, and the principle of interpreting biological phenomena and processes based on empirical data in research work and practical action, taking into account the sustainable use of biodiversity.	Knows the principles of planning research based on the achievements of biological sciences and the possibilities of using their results in practice, the principles of operation of equipment and apparatus used in molecular genetics research and the principle of interpreting biological phenomena and processes based on empirical data in research and practical activities, taking into account sustainable use of biodiversity	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
	[GBEL3_U03] The graduate is able to: use research apparatus and tools and, following the correct sequence of operations, carry out simple physical, biological or chemical observations and measurements in laboratory work in the biological sciences.	uses basic research equipment and tools and, maintaining the correct sequence of activities, performs simple physical, biological or chemical observations and measurements in laboratory work in the field of biological sciences	[SU2] presentation/project/paper/ report [SU8] observation of student's independent or team work
	[GBEL3_U01] The graduate is able to: independently perform practical tasks in the biological and related sciences, formulate research problems, analyse their results and draw conclusions.	Can independently perform simple practical tasks in the field of biological and related sciences	[SU5] implementation of a problem task [SU6] demonstration of practical skills [SU8] observation of student's independent or team work
	[GBEL3_K01] The graduate is prepared to: use of theoretical knowledge in laboratory and production practice	Is ready to use theoretical knowledge in laboratory practice	[SK2] presentation/project/paper/ report [SK8] observation of student's independent or team work
	[GBEL3_K05] The graduate is prepared to: responsibility for their own and others' safety at work	is responsible for his own and others' work safety	[SK8] observation of student's independent or team work
	[GBEL3_K08] The graduate is prepared to: takes responsibility for equipment/materials entrusted to it and respects the work of others.	Is responsible for the entrusted equipment/materials and respects the work of others	[SK8] observation of student's independent or team work
	[GBEL3_U08] The graduate is able to: study the literature independently and plan your own career path.	Is able to work in a team and organize work	[SU8] observation of student's independent or team work
Subject contents	Students purify proteins using classic preparation techniques		
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
	test	51.0%	75.0%
	grade for the report	51.0%	25.0%
Recommended reading	Basic literature	1. Original source works from scientific magazines 2. Ćwiczenia z biochemii (Kłyszajko-Stefanowicz, L., red. PWN, Warszawa 1999) 3. Techniki laboratoryjne w biologii molekularnej (Lewandowska Roenneger A.; Medpharm, 2018)	
	Supplementary literature	J.M. Berg, J.L. Tymoczko, L. Stryer, Biochemia, 2009, PWN, Warszawa	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Suggest a scheme for protein purification; Assign the given methods to research purposes;		
Work placement	Not applicable		