University of Gdańsk

Subject card

Subject name and code	Preparation of biomolecules. Structure and function of proteins, PG_00147199						
Field of study	Genetics and Experimental Biology						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2026/2027		
Education level	undergraduate studies		Subject group		Obligatory subject group 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		3.0		
Learning profile	academic		Assessment form				
Conducting unit	Pracownia Biochemii Mikroorganizmów -> Katedra Biochemii Ogólnej i Medycznej -> Faculty of Biology						
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	0.0	0.0	45.0	0.0	0.0	45
	E-learning hours included: 0.0						
	Additional information: Laboratory exercises						
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	45		5.0		25.0	75
Subject objectives	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_K05] Responsibility for the safety of one's own work and others.	is responsible for his own and others' work safety	[SK8] observation of student's independent or team work
[GBEL3_U03] Proficient in using research equipment and tools, while following the correct sequence of procedures, to conduct basic physical, biological, or chemical observations and measurements in laboratory work within the field of 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] Independently perform practical tasks in the field of biological sciences and related disciplines, formulate research problems, analyze 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_U08] Independently study literature and plan one's own career path.	Is able to work in a team and organize work	[SU8] observation of student's independent or team work
[GBEL3_K01] The utilization 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_K08] Responsibility for entrusted equipment/materials and respect for 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_W05] the principles of research planning based on achievements in biological sciences and related fields, the potential application of 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, with consideration for sustainable use of biological diversity.	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

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
grade for the report	51.0%	25.0%
test	51.0%	75.0%

Recommended reading

Basic literature	1. Original source works from scientific magazines 2. Ćwiczenia z biochemii (Kłyszejko-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	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed

Suggest a scheme for protein purification; Assign the given methods to research purposes;

Work placement

Not applicable

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