GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Cell Biology Laboratory, PG_00054883		
Field of study	Biotechnology		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2025/2026
Education level	first-cycle 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	1	Language of instruction	Polish
Semester of study	2	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department Of Pharmaceutical Technology And Biochemistry -> Faculty Of Chemistry -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Ewa Augustin	
	Teachers		

Lesson types and methods of instruction

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

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

The aim of the course is for students to acquire practical skills related to the structure and function of prokaryotic and eukaryotic cells. The laboratory classes will use the knowledge gained in the previous semester as part of the lectures on the Fundamentals of Biology with Elements of Cell Biology.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_W06	The student is able to investigate and explain the functions of the basic cell organelles. Understands the principles of cell signaling, can test the activity and inhibition of the expression of selected genes based on the analysis of the activity of various promoters.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
K6_U02	The student is able to explain and investigate the basic biological processes in a prokaryotic and eukaryotic cells based on the properties of the most important cellular biomolecules.	[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task

Subject contents

Examples of laboratory classes: 1. Analysis of the different ways cells move. 2. Determination of bacterial sensitivity to bacteriophagy. 3. Investigation of the activity and inhibition of gene expression - analysis of the activity of various promoters. 4. Determination of the number of chromosomes in eukaryotic cells. 5. Comparison of cell disintegration methods. 6. Morphology of plant and animal cells.

Prerequisites and co-requisites

Knowledge of the basics of cell biology and biology, the basics of chemistry and physics.

The condition for participation in the laboratories is a positive grade in the exam in the subject Basics of Biology with Elements of Cell Biology in the 1st semester.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
laboratory	60.0%	100.0%

Recommended reading	Basic literature	B. Alberts. Fundamentals of cell biology. 2006.
	Supplementary literature	W. Kilarski. Fundamental stuctures of cell biology. PWN 2010. W. Sawicki. Histology. PZWL, 2002.
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Compare the known methods of counting cells. What organelles differ an animal cell from a plant cell? What method is used to stain eucariotic chromosomes? What methods of cell disintegration do you know. List the ways in which bacteria move.	
Work placement	Not applicable	

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