GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Basic Biology With Elements of Cell Biology, PG_00054673		
Field of study	Biotechnology		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
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	1	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department of Pharmaceutical Technology and Biochemistry -> Faculty of Chemistry -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Ewa Augustin	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	0.0	0.0	0.0	30

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	30	5.0	40.0	75

Subject objectives

The aim of the course is to familiarize students with the structure of prokaryotic and eukaryotic cells and viruses, with particular emphasis on the molecular mechanisms responsible for their proper functioning.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_U02	The student is able to describe and explain the properties of biomolecules and the course of biological processes in the cell.	[SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information
K6_W06	The student is able to describe and explain the structure of the prokaryotic and eukaryotic cells. Understands the basic mechanisms of the functioning of cellular structures and cell signaling.	[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge

Subject contents

Course content – lecture
Lecture program:

The cell as the basic unit of life; model organisms. Biomacromolecules in cells; Methods of studying the structure and function of a cell; Fundamentals of the structure and function of a prokaryotic and eukaryotic cell; DNA and chromosomes. Basics of DNA replication; Basics of DNA recombination; Basics of gene expression: transcription, translation, gene expression control; Cell division and growth, regulation of the cell cycle; Intracellular transport; Intra- and extracellular signaling; Structure and function of the cytoskeleton; Intercellular connections; Pathology and cell death.

Prerequisites and co-requisites

Basic knowledge of the functioning of prokaryotic and eukaryotic cells and from other fields (chemistry, physics).

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
lecture - exam	60.0%	100.0%

Recommended reading	Basic literature	B. Alberts. Fundamentals of cell biology. PWN 2006.
	Supplementary literature	J.B. Reece. Campbell Biology. 9th edition, 2010. S. Freeman. Biological Science. 4th edition, 2010. W. Kilarski. Structural foundations of cell biology. PWN 3003.
	eResources addresses	
Example issues/ example questions/ tasks being completed	What are the differences and similarities between a prokaryotic and a eukaryotic cell? Describe model organisms. Basic concepts in DNA replication, transcription regulation and protein synthesis. Chromatin organization levels. What kind of signal molecules do you know? Types of intercellular connections. Regulation of the cell cycle. The main difference between the mitotic and meiotic divisions. Features of cancer cell.	
Practical activites within the subject	Not applicable	

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