



## 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 2023	Academic year of realisation of subject			2023/2024		
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						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Ewa Augustin					
	Teachers	dr hab. Ewa Augustin dr hab. Gracjana Klein-Raina					
Lesson types and methods of instruction	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.			[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject		
	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.			[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects		
Subject contents	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%
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	Adresy na platformie eNauczenie: Podstawy biologii z elementami biologii komórki - wykład 2023/2024 - Moodle ID: 32600 <a href="https://enauczenie.pg.edu.pl/moodle/course/view.php?id=32600">https://enauczenie.pg.edu.pl/moodle/course/view.php?id=32600</a>	
Example issues/ example questions/ tasks being completed	<p>What are the differences and similarities between a prokaryotic and a eukaryotic cell?</p> <p>Describe model organisms.</p> <p>Basic concepts in DNA replication, transcription regulation and protein synthesis.</p> <p>Chromatin organization levels.</p> <p>What kind of signal molecules do you know?</p> <p>Types of intercellular connections.</p> <p>Regulation of the cell cycle.</p> <p>The main difference between the mitotic and meiotic divisions.</p> <p>Features of cancer cell.</p>		
Work placement	Not applicable		