



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 2024		Academic year of realisation of subject		2024/2025		
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				
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_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		
	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		
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%		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	Adresy na platformie eNauczanie:
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	