



Subject card

Subject name and code	Cell Biology, PG_00037480						
Field of study	Biotechnology						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2020/2021		
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			5.0		
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 mgr Mateusz Olszewski dr Wioletta Brankiewicz					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	15.0	0.0	0.0	45
	E-learning hours included: 0.0						
Biologia komórki - wykład - Moodle ID: 13126 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=13126							
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	3.0		77.0	125	
Subject objectives	gaining knowledge on cell structure, functioning of cellular organelles; regulation of the cell cycle and cell division and meiosis; interactions between cells						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K6_U02	the student knows the basic biomolecules in the cell and the types of interactions between them.			[SU1] Assessment of task fulfilment		
	K6_W06	the student understands the basic mechanisms of the functioning of cellular structures and cellular signaling.			[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		

Subject contents	<p>Lectures</p> <ol style="list-style-type: none"> 1) Chemical composition of cells 2) Molecular structures and higher order structure formation from simple components 3) General rules of functioning in biological systems 4) Diversity of shapes and structures- similarities and differences between Eukaryotes and Prokaryotes 5) Methods used to determine cell structure and functions 6) Structure and functions of cell organelles 7) Coordination of fundamental cell processes: structural limitations of DNA replication and transcription 8) Extracellular matrix 9) Cell growth and division, cell cycle and its regulation 10) Intracellular transport of proteins and RNA 11) Cells under stress: basic strategies in repair of DNA and protein damage 12) Inter- and intracellular signalling pathways 13) Cell pathology: cell senescence, cell death and cancer <p>Practical courses:</p> <ol style="list-style-type: none"> 1) Basic methods and techniques used in biological and biochemical laboratories: light microscopy and cell counting 2) Isolation of mitotic chromosomes from different eukaryotic cells 3) Separation of cells by centrifugation 4) Application of fluorescence microscopy in studies of cellular structures and functions 											
Prerequisites and co-requisites	basic knowledge on cell structure and functions in Prokaryota as well as from other areas (chemistry, physics, mathematics)											
Assessment methods and criteria	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Subject passing criteria</th> <th style="width: 33%;">Passing threshold</th> <th style="width: 33%;">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td>Lab reports and tests</td> <td>60.0%</td> <td>40.0%</td> </tr> <tr> <td>Exam</td> <td>60.0%</td> <td>60.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Lab reports and tests	60.0%	40.0%	Exam	60.0%	60.0%
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Example issues/ example questions/ tasks being completed	<p>What are the 2 main features that distinguish a eukaryotic cell from a prokaryotic cell.</p> <p>Chromatin organization levels.</p> <p>The main functions of the cytoskeleton.</p> <p>Signal molecules - types.</p> <p>Types of intercellular connections.</p> <p>Cell cycle regulation - main control points.</p> <p>Features of a neoplastic cell.</p>											
Work placement	Not applicable											