

**Subject card**

<b>Subject name and code</b>	Cell biology, PG_00203318						
<b>Field of study</b>	Medical Biology						
<b>Date of commencement of studies</b>	October 2026	<b>Academic year of realisation of subject</b>			2026/2027		
<b>Education level</b>	Bachelor's studies	<b>Subject group</b>			Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>			at the university		
<b>Year of study</b>	1	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	1	<b>ECTS credits</b>			2.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>			exam		
<b>Conducting unit</b>							
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		prof. dr hab. Małgorzata Kozieradzka-Kiszkurno				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	15.0	0.0	0.0	0.0	0.0	15
	E-learning hours included: 0.0						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	<b>Participation in didactic classes included in study plan</b>		<b>Participation in consultation hours</b>		<b>Self-study</b>	<b>SUM</b>
	<b>Number of study hours</b>	15		2.0		33.0	50
<b>Subject objectives</b>	<p>1. Understanding the basics of functioning of organisms at the cell level.</p> <p>2. Understanding the structure of prokaryotic and eukaryotic cells.</p> <p>3. Ability to analyze the relationship between the structure of cellular structures and their functions.</p>						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BIOLMEDL3_W16] has an advanced knowledge of the experimental methods and the most important techniques of biological sciences that can be applied to medical biology and diagnostics	- The graduate explains the theoretical basis of cytobiological methods and lists the most important techniques used in cell biology that may be used in medical biology and diagnostics.	[SW4] test/exam - oral or written
	[BIOLMEDL3_W03] has an advanced knowledge and understanding of the structure of the animal or human organism, the processes and functional relationships at the cellular, tissue, organ and organismal levels, and explains their relationship to behavior and adaptation of the organism to changing environmental conditions	- The graduate understands the importance of individual compartments in the functioning of cells and explains their role in the adaptation of cells to changing environmental conditions or the function performed in the organism.	[SW4] test/exam - oral or written
	[BIOLMEDL3_W01] has an advanced knowledge and understanding of the differences in the structure and function of a prokaryotic and eukaryotic cell	The graduate can explain the differences in the structure and functioning of prokaryotic and eukaryotic cells and present the basic features of cell structure and function.	[SW4] test/exam - oral or written
	[BIOLMEDL3_K07] Is responsible for the equipment/materials entrusted to him and his own work and respects the work of others	The graduate is aware of responsibility for the entrusted equipment (e.g. light microscope, permanent preparations) and his/her work, as well as respecting the work of others.	[SK8] observation of student's independent or team work
[BIOLMEDL3_U01] uses basic apparatus and research tools and, maintaining the correct sequence of operations, performs simple physical, biological or chemical observations and measurements in laboratory work in the biological or medical sciences	- The graduate is aware of the use of basic equipment and tools used in research on plant and animal cells.	[SU1] oral statement/conversation/discussion [SU4] test/exam - oral or written [SU8] observation of student's independent or team work	
Subject contents	Learning techniques and research methods used in cell biology. The phenomenon of life. Levels of organization of life (molecular, organismal, species and population). Organization of cells in prokaryotic and eukaryotic organisms. The structure and functioning of individual cell compartments. Genetic material of prokaryotic and eukaryotic cells. Cell cycle and its regulation. Programmed cell death in physiological conditions and disease states.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Test	51.0%	100.0%
Recommended reading	Basic literature	<p>Alberts B. i wsp. Podstawy biologii komórki. 2005, PWN Warszawa</p> <p>Alberts B, Heald R, Johnson A, Morgan D, Raff M. Molecular Biology of the Cell. 2022, Norton &amp; Company</p> <p>Bowes B.G, Mauseth J.D Plant Structure. 2008, Jones &amp; Bartlett Learning</p> <p>Hancock JT (2016) Cell Signalling Oxford University Press</p> <p>Kilarski, W. Strukturalne podstawy biologii komórki. 2003, Wyd. Naukowe PWN</p> <p>Kłyszajko-Stefanowicz L. Cytobiochemia. 2002, Wyd. Naukowe PWN</p> <p>Wojtaszek P., Michejda J., Ratajczak, Biologia komórki roślinnej. T.1 Struktura, T.2 Funkcja.2009, Wyd. Naukowe PWN</p> <p>Woźny A. i in. [red.] 2001. Podstawy biologii komórki roślinnej, Wyd. Naukowe UAM, Poznań</p>	

	Supplementary literature	<p>Noguchi T, Kawano S, Tsukaya H, Matsunaga S, Sakai A, Karahara I, Hayashi Y. Atlas of Plant Cell Structure. 2014, Springer Tokyo Heidelberg New York Dordrecht London (książka on-line)</p> <p>Alberts B. (red.), Johnson A, Lewis J, et al. Wstęp do biologii molekularnej. 2002, New York: Garland Science (książka on-line)</p> <p>Litwin JA. Podstawy technik mikroskopowych. Wydawnictwo Uniwersytetu Jagiellońskiego, 1999, Kraków</p> <p>Mauseth J.D. Botany: An Introduction to Plant Biology. 2016, Jones &amp; Bartlett Learning</p>
Example issues/ example questions/ tasks being completed	eResources addresses	
Work placement	Not applicable	

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