University of Gdańsk

Subject card

Subject name and code	Cell biology, PG_00203318						
Field of study	Medical Biology						
Date of commencement of studies	October 2026		Academic year of realisation of subject	2026/2027			
Education level	Bachelor's 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	2.0			
Learning profile	academic		Assessment form	exam			
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Małgorzata Kozieradzka-Kiszkurno				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	0.0	15
	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	15		2.0		33.0	50
Subject objectives	1. Understanding the basics of functioning of organisms at the cell level. 2. Understanding the structure of prokaryotic and eukaryotic cells. 3. Ability to analyze the relationship between the structure of cellular structures and their functions.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BIOLMEDL3_W01] has an advanced knowledge and understanding of the differences in the structure and function of prokaryotic and eukaryotic cells, the structure and properties of the various types of biological macromolecules, the molecular mechanisms of basic metabolic pathways and the flow of genetic information, and the sources of variation in organisms; explains the laws of inheritance	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_W02] has an advanced knowledge and understanding of the structure of the animal or human body, processes and functional relationships at the cellular, tissue, organ and organismal levels, as well as physiological and biochemical processes at an advanced level, and the mechanisms of the pathophysiology of diseases, and explains their relationship with behaviour and the organism’s	- 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_K06] Is responsible for the equipment/materials entrusted to him and his own work and respects the work of others	- The graduate demonstrates responsibility for the teaching materials entrusted to them, reliably completes tasks related to learning about cell structure and function, and respects the work of others by adhering to the principles of academic integrity and the proper use of scientific sources.	[SK8] observation of student's independent or team work
[BIOLMEDL3_W10] has an advanced understanding of the principles of assessing processes and phenomena occurring within the body, using physical or chemical measurements, and possesses advanced knowledge of experimental methods and the key techniques of the biological sciences that may be applied in 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_U01] is able to use and operate basic research equipment and tools employed in molecular-biochemical analysis or neurobiology and, following the correct sequence of steps, carries out simple physical, biological or chemical observations and measurements in laboratory work in the field of biological or medical sciences	- The graduate is aware of the use of basic equipment and tools used in research on plant and animal cells in biological and medical sciences.	[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, oral statement	51.0%	100.0%

Recommended reading	Basic literature	Alberts B. i wsp. Podstawy biologii komórki. 2005, PWN Warszawa Alberts B, Heald R, Johnson A, Morgan D, Raff M. Molecular Biology of the Cell. 2022, Norton & Company Bowes B.G, Mauseth J.D Plant Structure. 2008, Jones & Bartlett Learning Hancock JT (2016) Cell Signalling Oxford University Press Kilarski, W. Strukturalne podstawy biologii komórki. 2003, Wyd. Naukowe PWN Kłyszejko-Stefanowicz L. Cytobiochemia. 2002, Wyd. Naukowe PWN Wojtaszek P., Michejda J., Ratajczak, Biologia komórki roślinnej. T.1 Struktura, T.2 Funkcja.2009, Wyd. Naukowe PWN Woźny A. i in. [red.] 2001. Podstawy biologii komórki roślinnej, Wyd. Naukowe UAM, Poznań
	Supplementary literature	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) Alberts B. (red.), Johnson A, Lewis J, et al. Wstęp do biologii molekularnej. 2002, New York: Garland Science (książka on-line) Litwin JA. Podstawy technik mikroskopowych. Wydawnictwo Uniwersytetu Jagiellońskiego, 1999, Kraków Mauseth J.D. Botany: An Introduction to Plant Biology. 2016, Jones & Bartlett Learning
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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