University of Gdańsk

Subject card

Subject name and code	Cell biology, PG_00207385						
Field of study	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	Faculty of Biology -> Rector						
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	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		2.0	18.0	50	
Subject objectives	1. Introduction of the basic and most important issues in cell biology 2. Overview of cell organelles - structure and functions 3. Understanding basic issues regarding the structure and life cycle of a cell (cell division, growth and aging)						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BIOLL3_U01] is able to use basic research techniques and tools appropriate for the biological sciences and perform physical, chemical and biological observations and measurements in the laboratory and in the field, individually and in a team, while organizing her/his work appropriately and in a maintained way	- The graduate is able to apply basic research techniques and tools used in cell biology to observe and analyze cellular structures and processes occurring within cells, as well as to collaborate in a team while maintaining proper work organization.	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
[BIOLL3_W05] has advanced knowledge of experimental methods, laboratory and field techniques, and the principles of planning and conducting biological research	The graduate has advanced knowledge of basic research methods and techniques used in cell biology and understands the principles of their application in studying the structure and functions of prokaryotic and eukaryotic cells, as well as processes occurring at the cellular level.	[SW4] test/exam - oral or written
[BIOLL3_W01] knows and understands at an advanced level the structure and functioning of organisms at all levels of the organization of life - from the cell (prokaryotic and eukaryotic), through tissues, organs, to the organism - as well as the relationships between them and their adaptations to the environment	- The graduate understands the structure and functions of prokaryotic and eukaryotic cells, understands the processes occurring at the cellular level, and explains the relationships between the structure and function of individual cell organelles, as well as the significance of cellular processes for the proper functioning of organisms and their adaptation to changing environmental conditions.	[SW4] test/exam - oral or written
[BIOLL3_K02] is ready to take care for her/his own safety and that of others, identifying threats and taking appropriate action, as well as use verified equipment and materials responsibly, ensuring their proper use	- The graduate is prepared to use knowledge of cell biology responsibly, identify potential biological hazards, and observe safety principles and responsible practices when handling biological material.	[SK8] observation of student's independent or team work

Subject contents

1. Cell evolution

2. Biological membranes; transport across membranes

3. Extracellular matrix of plant and animal cells

4. Cell organelles

5. Cytoskeleton

6. Cell growth and division

7. Aging and cell death

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	Alberts B. i in. 1999. Podstawy biologii komórki. PWN, Warszawa. Alberts B (red), Johnson A, Lewis J et al. Molecular Biology of the Cell. New York: Garland Science 2002 Bowes B.G, Mauseth J.D. 2008. Plant Structure. Jones & Bartlett Learning Kurczyńska EU, Borowska-Wykręt D. 2007. Mikroskopia świetlna w badaniach komórki roślinnej. Ćwiczenia, PWN, Warszawa Litwin JA. 1999. Podstawy technik mikroskopowych. Wydawnictwo Uniwersytetu Jagiellońskiego, Kraków Rogalska S, J. Małuszyńska, M.J. Olszewska (red.). 2005. Podstawy cytogenetyki roślin, PWN, Warszawa Wojtaszek P., Michejda J., Ratajczak, Biologia komórki roślinnej. T.1 Struktura, T.2 Funkcja. PWN 2008/2009 Woźny A. i in. [red.] 2001. Podstawy biologii komórki roślinnej, Wyd. Naukowe UAM, Poznań
	Supplementary literature	Lack AJ Awans DE. 2003. Krótkie wykłady. Biologia roślin. PWN, Warszawa Kłyszejko-Stefanowicz L. 2002. Cytobiochemia. Biochemia niektórych struktur komórkowych, PWN, Warszawa Mauseth J.D.2016. Botany: An Introduction to Plant Biology, Jones & Bartlett Learning Brzezicka E., Kozieradzka-Kiszkurno M. (2021) Developmental, ultrastructural and cytochemical investigations of the female gametophyte in Sedum rupestre L. (Crassulaceae). Protoplasma, 258(3):529-546. Brzezicka E., Kozieradzka-Kiszkurno M. (2019) Female gametophyte development in Sedum sediforme (Jacq.) Pau (Crassulaceae): an anatomical, cytochemical and ultrastructural analysis. Protoplasma, 256(2):537-553.
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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