

Subject card

Subject name and code	Unicellular organisms - Metabolism Fundaments (M03_B3), PG_00153675						
Field of study	Biotechnology						
Date of commencement of studies	October 2024	Academic year of realisation of subject			2025/2026		
Education level	undergraduate studies	Subject group					
Mode of study	full-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			Polish		
Semester of study	3	ECTS credits			2.0		
Learning profile	academic	Assessment form					
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor	dr n. med. Dorota Pomorska					
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	22.0	0.0	0.0	0.0	0.0	22
	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	22		0.0		30.0	52
Subject objectives	The aim of the course is to familiarize the student with the metabolic processes of organisms, taking into account their living environment.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[BIOTECHL3_W02] The graduate knows and understands selected processes at the cell, tissue and organism level, important from the biological point of view	KW_03_B			[SW4] test/exam - oral or written		

Subject contents	<p>F1.</p> <p>Sources of energy and matter</p> <p>Respiration and nutrition</p> <p>- aerobic and anaerobic -</p> <p>- nutrition - bacteria, fungi, algae, Protista - fermentations</p> <p>Physiology and metabolism</p> <p>Catabolism of macroparticles</p> <p>Synthesis of macroparticles</p> <p>Cellular transport - (energy-dependent transport)</p> <p>Photosynthesis and chemosynthesis of microorganisms</p> <p>Photosynthesis of cyanobacteria / algae</p> <p>Chemosynthesis (bacteria and archaea)</p>								
Prerequisites and co-requisites	Knowledge and skills acquired in modules M01-M02								
Assessment methods and criteria	<table border="1" data-bbox="448 1093 1487 1171"> <thead> <tr> <th data-bbox="448 1093 794 1133">Subject passing criteria</th> <th data-bbox="794 1093 1141 1133">Passing threshold</th> <th data-bbox="1141 1093 1487 1133">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="448 1133 794 1171">Test/exam</td> <td data-bbox="794 1133 1141 1171">51.0%</td> <td data-bbox="1141 1133 1487 1171">100.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Test/exam	51.0%	100.0%
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Test/exam	51.0%	100.0%							
Recommended reading	Basic literature	<p>Życie bakterii Kunicki-Goldfinger, red. J. Baj, Z. Markiewicz, Wydawnictwo Naukowe PWN, W-wa 2005 i późniejsze Mikrobiologia techniczna. T. 1 Mikroorganizmy i środowiska ich występowania (wybrane rozdziały) - Zdzisława Libudzisz (red.), Krystyna Kowal (red.), Zofia Żakowska (red.), 2007, Wydawnictwo Naukowe PWN</p> <p>Mikrobiologia Murray Rosenthal Wydanie 2018 EDRA URBAN & PARTNER Microbiology: an introduction. Gerard J. Tortora, Berdell R. Funke, Christine L. Case, 2016, Pearson Prescotts Microbiology Joanne Willey[10th ed.] 2016. McGraw-Hill Education, Brock biology of microorganisms, global edition, 15/e M. T. Madigan, K. S. Bender, D. H. Buckley, W. M. Sattley, D. A. Stahl, 2018. Pearson. Skrypt Pracownia inżynierii genetycznej materiały do ćwiczeń Katarzyna Węgrzyn B.</p>							
	Supplementary literature	<p>Cappuccino, James G.; Welsh, Chad T, Microbiology: A Laboratory Manual, Global Edition Pearson Education Limited : Pearson, 2017 The Yeasts: Yeast Technology (2012) Anthony H. Rose, J. Stewart Harrison Scheffler I. E. Mitochondria. 2nd edition. Wiley 20077</p>							
	eResources addresses	Adresy na platformie eNauczanie:							
Example issues/ example questions/ tasks being completed									
Work placement	Not applicable								

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