

Subject card

Subject name and code	Sociomicrobiology, PG_00153682						
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	Dziedzinat MW Biotechnologii -> Intercollegiate Faculty of Biotechnology UG-MUG						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Michał Obuchowski				
	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		6.0		25.0	46
Subject objectives	The student understands the need to adopt a new way of perceiving microorganisms not as individual cells, but as a functionally connected community (BIOTECHL3_W01). Is able to demonstrate the need to study some processes and behaviors of microorganisms in the context of entire bacterial populations and not individual cells (BIOTECHL3_W03). Understands the limitations in understanding bacterial communities caused by the use of laboratory methods of culturing microorganisms (BIOTECHL3_K01). Is able to plan a sequence of works enabling the analysis of the social behavior of microorganisms.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[BIOTECHL3_W01] The graduate knows and understands basic biological phenomena at the molecular level, he/she is familiar with their significance for biotechnology.		The student understands selected biological phenomena at the molecular level. Knows the possibilities of their application in biotechnology.		[SW4] test/exam - oral or written		
	[BIOTECHL3_W03] The graduate knows and understands selected issues of organism-environment interdependence		The student notices and understands the interdependencies between microorganisms and between microorganisms and the environment.		[SW4] test/exam - oral or written		
	[BIOTECHL3_K01] The graduate is willing to know the limitations of his/her own knowledge and skills; constantly improve, update knowledge, and raise qualifications in biotechnology in the science and natural sciences, as well as medical sciences and health sciences		The student is aware of the limitations of knowledge describing the world of microorganisms. There is a need to constantly deepen it.		[SK4] test/exam - oral or written		
Subject contents	Revision of the dogma that bacteria are single-celled organisms in the light of research results in recent years. The issue of individuality of bacterial cells in a genetically homogeneous population. The importance of the sense of density for group behavior of microorganisms and interspecies communication. Biofilm - a sessile community of bacteria. Functional specialization within the bacterial biofilm. Coordinated movement of bacteria as a manifestation of collective pursuit of a goal. Cannibalism as a way of preserving the population. Altruistic death among bacteria.						

Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Final colloquium	51.0%	100.0%
Recommended reading	Basic literature	Review articles on issues discussed during the lecture provided by the instructor during the classes. Script "Sociomicrobiology"	
	Supplementary literature	None	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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