

Subject card

Subject name and code	Antibiotics and chemotherapeutics, PG_00197619						
Field of study	Biotechnology						
Date of commencement of studies	October 2025	Academic year of realisation of subject			2026/2027		
Education level	Bachelor's studies	Subject group			Obligatory subject group in the field of study Optional 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			credit		
Conducting unit	Intercollegiate Faculty of Biotechnology Office -> Intercollegiate Faculty of Biotechnology UG-MUG -> Rector						
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	16.0	0.0	0.0	0.0	0.0	16
	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	16		5.0		29.0	50
Subject objectives	<p>To familiarize students with biologically active substances belonging to antibiotics. Presentation of the mechanism of action and acquisition of antibiotic resistance by microorganisms. A sketch of the history effect of antibiotic use and the increase in antibiotic resistance.</p> <p>To familiarize students with biologically active substances used in chemotherapy. Presentation of the mechanism of action and acquisition of resistance to used chemotherapy drugs.</p>						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[BIOTECHL3_W01] The graduate possesses structured and advanced knowledge of biological phenomena at the molecular level and understands their importance for biotechnology.		The student knows and understands the molecular basis of antibiotic resistance in microorganisms, as well as the mechanisms of action and acquisition of resistance to chemotherapeutic agents.		[SW4] test/exam - oral or written		
	[BIOTECHL3_W09] The graduate possesses structured and advanced knowledge of the terminology and concepts used in biological and medical sciences and related disciplines.		The student knows and understands the basic concepts and terminology related to antibiotics and chemotherapeutic agents, particularly their mechanisms of action and microbial resistance.		[SW4] test/exam - oral or written		
Subject contents	Definition of antibiotic. Division of antibiotics according to their chemical structure. Mechanisms of action of antibiotics with different chemical structures. Mechanisms of resistance. Definition of chemotherapy drugs. The drug development process. Division of chemotherapy drugs according to their chemical structure and spectrum of action. Mechanism of action of chemotherapy drugs. Antiviral chemotherapeutics. Acquiring resistance to therapies using chemotherapeutics.						
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	Publications and other materials indicated by the instructor.	
	Supplementary literature	Makarewicz Z, Kwiatkowski ZA, Bacteria, antibiotics, drug resistance, PWN 2018	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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