University of Gdańsk

Subject card

Subject name and code	Antibiotics and chemotherapeutics, PG_00196922		
Field of study	Biotechnology		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2027/2028
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

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.

To familiarize students with biologically active substances used in chemotherapy. Presentation of the mechanism of action and acquisition of resistance to used chemotherapy drugs.

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 mechanisms 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 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

<table>
<tr><td>Assessment methods and criteria</td><td colspan="3"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Final colloquium</td><td>51.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td colspan="2">Publications and other materials indicated by the instructor.</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">Makarewicz Z, Kwiatkowski ZA, Bacteria, antibiotics, drug resistance, PWN 2018</td></tr>
<tr><td>eResources addresses</td><td colspan="2"></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="3"></td></tr>
<tr><td>Work placement</td><td colspan="3">Not applicable</td></tr>
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