


KAPITAŁ LUDZKI
 NARODOWA STRATEGIA SPÓJNOŚCI

 Projekt współfinansowany przez
 Unię Europejską w ramach
 Europejskiego Funduszu
 Społecznego

UNIA EUROPEJSKA
 EUROPEJSKI
 FUNDUSZ SPOŁECZNY


Course title		ECTS code	
Systems approach to microbiology and bacterial genetics		13.1.1444	
Name of unit administrating study			
Studies			
faculty	field of study	type	first tier studies (BA)
Faculty of Biology	Medical Biology	form	full-time
		specjalty	all
		specialization	all
Faculty of Biology	Biology	type	first tier studies (BA)
		form	full-time
		specjalty	all
Faculty of Biology	Genetics and Experimental Biology	type	first tier studies (BA)
		form	full-time
		specjalty	all
Faculty of Biology	Natural Resources Conservation	type	first tier studies (BA)
		form	full-time
		specjalty	all
		specialization	all
		specialization	all
		specialization	all
Teaching staff			
prof. dr hab. Agnieszka Szalewska-Pałasz; dr hab. Wojciech Pokora, profesor uczelni; prof. UG, dr hab. Katarzyna Potrykus; dr Monika Glinkowska; dr Barbara Kędzierska; dr Sylwia Barańska			
Forms of classes, the realization and number of hours		ECTS credits	
Forms of classes		2	
Lecture		Work in contact with the teacher:	
The realization of activities		participation in lectures - 15 hours	
classroom instruction, online classes		consultations with the lecturer - 9 hours	
Number of hours		exam - 2 hours	
Lecture: 15 hours		The individual student work:	
		preparation for the exam - 20 hours	
		studying the literature and materials for classes - 4 hours	
		TOTAL: 50 hours	
The academic cycle			
2022/2023 summer semester			
Type of course		Language of instruction	
an elective course		english	
Teaching methods		Form and method of assessment and basic criteria for evaluation or examination requirements	
Lectures with a multimedia presentation		Final evaluation	
		Examination	
		Assessment methods	
		- written exam with open questions	
		- written exam (test)	
		- Written exam: multiple choice and open questions	
		The basic criteria for evaluation	
		Mandatory attendance	
		The exam will cover study material presented in the course of the lectures.	
Method of verifying required learning outcomes			
Required courses and introductory requirements			

A. Formal requirements Microbiology, biochemistry, genetics, chemistry	
B. Prerequisites Basic knowledge of biochemistry, microbiology and molecular genetics	
Aims of education <ul style="list-style-type: none"> to introduce students to the many systems governing bacterial cells at the molecular level, including global regulatory systems, pathogenesis and host-cell interactions to introduce students to the latest concepts in bacterial molecular genetics to introduce students to research methods used in microbial systems' studies to introduce students to microbial communities and ecosystem 	
Course contents <ul style="list-style-type: none"> high-throughput approaches to study microbes, their communities and combating antibiotic resistance biology of bacterial toxin-antitoxin systems second messengers and the stringent response bacterial pathogenesis and establishing novel antibacterial compounds regulatory networks of gene expression environmental microbiology and quantum effects 	
Bibliography of literature <p>A. Literature required for the final course credit (exam): The list of publications for each lecture will be given to the students by the lecturers.</p> <p>B. Supplementary literature</p> <ul style="list-style-type: none"> Madigan MT, Bender KS, Buckley DH, Sattley WM, Stahl DA "Brock Biology of Microorganisms", 15th edition TA Brown "Genomes" Alberts B, et al. "Molecular Biology of the cell" Harvey Lodish et al. "Molecular cell biology" Bertrand JC, "Environmental Microbiology: Fundamentals and applications", Springer, 2015 Barton LL, McLean RJC "Environmental Microbiology and Microbial Ecology", John Wiley & Sons, 2019 Mohseni M, Omar Y, Engel GS, Plenio MB, "Quantum Effects in biology", Cambridge University, 2014 	
The learning outcomes (for the field of study and specialization)	Knowledge <ul style="list-style-type: none"> understands the natural phenomena and processes at various levels of complexity consistently applies and disseminates the principle of a strict, based on empirical data, interpretation of biological phenomena and processes in research and practical activities recognizes research problems from the border of biological sciences that require the use of advanced science tools has in-depth knowledge of the selected specialty in biological sciences recognizes the dynamic development of biological sciences and the emergence of new research directions and disciplines recognizes the wealth of contemporary approaches and experimental techniques in biological sciences and properly plans to use them to solve given tasks
	Skills <ul style="list-style-type: none"> selects and applies research techniques and tools adequate to the problems of the biological specialty studied proficiently uses scientific literature of the studied biological specialty demonstrates an ability to critically analyze and select biological information, especially that obtained from electronic resources critically confronts biological information from various sources and draws reasonable conclusions on this basis independently plans their own professional / scientific career according to the obtained qualifications recalls technical English-language vocabulary in the field of biological sciences in everyday professional / scientific activity
	Social competence <ul style="list-style-type: none"> shows initiative and independence in actions, as well as feels the need for lifelong learning correctly identifies and resolves dilemmas related to the profession of a biologist

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| | <ul style="list-style-type: none">- understands the need to use recognized sources of scientific and popular science information in the field of biological sciences in order to deepen their knowledge- systematically updates biological knowledge and information about its practical applications |
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Contact

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