Course title	Systems approach to microbiology and bacterial genetics		
Course code	**Semester**	**ECTS**	**Lectures/ classes**
13.1.1444	summer	2	Lectures: 15 hours
Name of the lecturer and contact	prof. dr hab. Agnieszka Szalewska-Pałasz; dr Sylwia Barańska; dr Monika Glinkowska; prof. UG, dr hab. Katarzyna Potrykus; dr Barbara Kędzierska; Agnieszka.Szalewska-Palasz@ug.edu.pl		
Prerequisites	Basic knowledge of biochemistry, microbiology and molecular genetics		
Course description	• 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		
Learning outcomes	Knowledge: - 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: - 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