

**Subject card**

<b>Subject name and code</b>	MSc thesis laboratory, PG_00153641						
<b>Field of study</b>	Biotechnology						
<b>Date of commencement of studies</b>	October 2025	<b>Academic year of realisation of subject</b>			2026/2027		
<b>Education level</b>	Master's studies	<b>Subject group</b>			Optional subject group		
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>			at the university		
<b>Year of study</b>	2	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	3	<b>ECTS credits</b>			15.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>			credit		
<b>Conducting unit</b>	Intercollegiate Faculty of Biotechnology UG-MUG -> Rector						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr hab. Mariusz Grinholc				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	0.0	0.0	400.0	0.0	0.0	400
	E-learning hours included: 0.0						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	<b>Number of study hours</b>	400		0.0		0.0	400
<b>Subject objectives</b>	The student knows and uses basic principles of safety and hygiene of work in a research laboratory, and is able to solve problems arising in laboratory work and to deal with emergency situations. Within the framework of the course, the student extends his/her laboratory work skills, independently plans and carries out experiments, only consulting their results with the supervisor. The student practices the ability to independently document conducted experiments and their results, and learns to independently operate the research equipment used.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BIOTECHMU2_W06] The graduate knows and understands the risks associated with conducting laboratory works, including those resulting from working with infectious material, GMOs and GMMs.	Knows the risks associated with conducting laboratory research; including those arising from working with infectious material, GMOs and GMMs	[SW3] text preparation/written work
	[BIOTECHMU2_U08] The graduate is able to learn independently, effectively plan and organize work independently or as part of a team.	Learns independently, plans effectively and organises work independently or as part of a team	[SU8] observation of student's independent or team work
	[BIOTECHMU2_U06] The graduate is able to prepare, in a targeted manner in Polish and / or English, a written study, a scientific publication in the field of biotechnology using scientific language, including specialist terminology and conceptual apparatus.	Can prepare in a targeted manner, in Polish and/or English, a written scientific publication on biotechnology using scientific language including specialised terminology and terminology.	[SU3] text preparation/written work
	[BIOTECHMU2_U04] The graduate possesses the ability to proficiently use scientific information, including English, regarding biotechnology; critically analyses and selects information; uses electronic sources; has the ability to use appropriate databases.	Is proficient in the use of scientific information, including English-language information on biotechnology; critically analyses and selects information; uses electronic sources; has the ability to use appropriate databases	[SU3] text preparation/written work
	[BIOTECHMU2_U02] The graduate is able to collect and interpret empirical data; use statistical methods and IT tools in data analysis; formulate conclusions based on empirical data	Collects and interprets empirical data; uses statistical methods and IT tools in data analysis; draws conclusions based on empirical data	[SU3] text preparation/written work [SU5] implementation of a problem task [SU8] observation of student's independent or team work
[BIOTECHMU2_U01] The graduate possesses the skills necessary for laboratory work; is able to plan and conduct an experiment; documents activities and results; uses complex research techniques and tools in laboratory work under the supervision of a supervisor; has the ability to operate laboratory equipment; applies occupational health and safety principles; understands the risks associated with laboratory work.	Has the skills necessary for laboratory work; is able to plan and carry out an experiment; documents activities and results; uses complex research techniques and tools in laboratory work under the guidance of a mentor; is able to operate laboratory equipment; applies occupational health and safety principles; understands the risks of working in a laboratory	[SU3] text preparation/written work [SU5] implementation of a problem task [SU8] observation of student's independent or team work	
Subject contents	Depending on the research topic of the thesis supervisor, the content of the course may include: analysis of protein structure and function using advanced spectroscopic, biophysical and biochemical techniques; deepening knowledge of the biochemistry and biotechnology of plant lipids; application of molecular biology methods in the construction of new-generation antiviral vaccines; analysis of the structure and function of viral proteins; analysis of the molecular mechanism of aggressive cancer cell behaviour and the search for markers for the diagnosis and therapy of these diseases.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Master's thesis	0.0%	100.0%
Recommended reading	Basic literature	Scientific publications (in Polish and in English) related to the topic of the master's project, including scientific publications of the supervisor of the project of the master's project.	
	Supplementary literature	None	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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