

Subject card

Subject name and code	Introduction to the methodology of experimental research, PG_00146881						
Field of study	Genetics and Experimental Biology						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		Polish		
Semester of study	1		ECTS credits		2.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Monika Maciąg-Dorszyńska				
	Teachers		dr Monika Maciąg-Dorszyńska				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	0.0	0.0	30
	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	30		4.0		16.0	50
Subject objectives	Understanding the basis of planning and conducting experiments with emphasis on control of the experimental system						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[GBEL3_K08] Responsibility for entrusted equipment/materials and respect for the work of others.	Student is responsible for the entrusted equipment/materials, his/her own work and respects the work of others	[SK8] observation of student's independent or team work
	[GBEL3_U03] Proficient in using research equipment and tools, while following the correct sequence of procedures, to conduct basic physical, biological, or chemical observations and measurements in laboratory work within the field of biological sciences.	Student uses basic research equipment and tools and, while maintaining the correct sequence of actions, performs simple physical, biological or chemical observations and measurements in laboratory work in the field of biological sciences	[SU6] demonstration of practical skills [SU7] entries and opinions in the internship diary
	[GBEL3_U01] Independently perform practical tasks in the field of biological sciences and related disciplines, formulate research problems, analyze their results, and draw conclusions.	Student independently performs practical tasks in the field of biological and related sciences, formulates research problems, analyzes their results, and draws conclusions.	[SU6] demonstration of practical skills [SU8] observation of student's independent or team work
	[GBEL3_W09] principles of safety and hygiene, as well as ergonomics in the workplace.	Student determines basic principles of safety, hygiene, and ergonomics at work	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion
	[GBEL3_W05] the principles of research planning based on achievements in biological sciences and related fields, the potential application of their results in practice, the principles of operation of equipment and apparatus used in molecular genetics research, and the principle of interpreting biological phenomena and processes based on empirical data in research and practical activities, with consideration for sustainable use of biological diversity.	Student knows the principles of planning research based on achievements in biological sciences and related fields, and the possibility of using their results in practice, as well as the principles of functioning of equipment and apparatus used in molecular genetics research	[SW1] oral statement/conversation/discussion [SW2] presentation/project/paper/report [SW5] implementation of a problem task
Subject contents	- laboratory safety - basic laboratory tasks: preparing buffers, using an automatic pipette, operating a pH meter, sterile work - planning experiments: controlling the experimental setup, pilot experiments, positive and negative controls, difference between hypothesis and research model - conducting simple experiments illustrating the program content and writing a report		
Prerequisites and co-requisites	none		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		50.0%	50.0%
		50.0%	50.0%
Recommended reading	Basic literature	Kathy Barker, At the bench: a laboratory navigator, Cold Spring Harbor Laboratory Press, 2004	
	Supplementary literature	Kathy Barker, At the bench: a laboratory navigator, Cold Spring Harbor Laboratory Press, 2004	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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