

**Subject card**

<b>Subject name and code</b>	Scientific Project Laboratory - laboratory classes, PG_00201331						
<b>Field of study</b>	Aquaculture – Business And Technology						
<b>Date of commencement of studies</b>	October 2026		<b>Academic year of realisation of subject</b>		2028/2029		
<b>Education level</b>	Bachelor's studies		<b>Subject group</b>		Obligatory subject group in the field of study Subject group related to practical vocational preparation		
<b>Mode of study</b>	full-time studies		<b>Mode of delivery</b>		at the university		
<b>Year of study</b>	3		<b>Language of instruction</b>		Polish		
<b>Semester of study</b>	5		<b>ECTS credits</b>		3.0		
<b>Learning profile</b>	practical		<b>Assessment form</b>		credit		
<b>Conducting unit</b>	Laboratory of Ecophysiology and Bioenergetics -> Department of Marine Ecology -> Faculty of Oceanography and Geography -> Rector						
<b>Name and surname of lecturer (lecturers)</b>	Subject supervisor		prof. dr hab. Monika Normant-Saremba				
	Teachers						
<b>Lesson types</b>	<b>Lesson type</b>	<b>Lecture</b>	<b>Tutorial</b>	<b>Laboratory</b>	<b>Project</b>	<b>Seminar</b>	<b>SUM</b>
	Number of study hours	0.0	0.0	30.0	0.0	0.0	30
	E-learning hours included: 0.0						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	<b>Participation in didactic classes included in study plan</b>		<b>Participation in consultation hours</b>		<b>Self-study</b>	<b>SUM</b>
	Number of study hours	30		4.0		41.0	75
<b>Subject objectives</b>	Learning the rules for preparing applications for financing a research and development project related to the culture of plants and algae, invertebrates and fish, based on biological conditions, engineering, legal, socio-economic, environmental and marketing aspects.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[AKWAL3-U08] can solve standard, atypical or complex problems on the basis of acquired knowledge and data sources	Based on his knowledge and data sources is able to solve problems related to aquaculture of plants and algae, invertebrates and fish.	[SU1] oral statement/conversation/discussion [SU2] presentation/project/paper/report
	[AKWAL3-U04] can select and use available sources of information, and understand the literature on aquaculture in a broad sense	Is able to select and use available sources of information on the aquaculture of plants and algae, invertebrates and fish.	[SU1] oral statement/conversation/discussion [SU2] presentation/project/paper/report
	[AKWAL3-K05] student is ready to appreciate the practical application of acquired knowledge	Is ready to appreciate the practical application of acquired knowledge in the field of aquaculture of plants and algae, invertebrates and fish.	[SK1] oral statement/conversation/discussion [SK2] presentation/project/paper/report
	[AKWAL3-W12] knows and understands the role of aquaculture in the modern economy and its impact on the natural environment	Knows and understands the role of aquaculture related to the production of various plants and algae, invertebrates and fish in the modern economy and its impact on the natural environment.	[SW1] oral statement/conversation/discussion [SW2] presentation/project/paper/report
[AKWAL3_W04] has an advanced understanding of the principles of optimization of breeding methods for aquatic invertebrates, and has acquired theoretical and practical knowledge of the diagnostic methods used	Knows and understands the principles of optimizing methods in the aquaculture of plants, algae, invertebrates and fish.	[SW1] oral statement/conversation/discussion [SW2] presentation/project/paper/report	
Subject contents	Learning the principles of preparation and implementation of various types of projects related to aquaculture of selected species of plants and algae, invertebrates and fish, taking into account the substantive assumptions and goal, expected results, methods used, necessary materials and equipment, research schedule, project cost estimate, etc., prepared on the basis of biological conditions and engineering and legal aspects. Classes are carried out in two of the three proposed thematic blocks (plants and algae; invertebrates; fish), selected by students.		
Prerequisites and co-requisites	Knowledge of the biology, ecology and physiology of farmed organisms, as well as the legal basis and socio-economic aspects of aquaculture.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Project/ presentation block 1	51.0%	50.0%
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Recommended reading	Basic literature	Publicly available and current subject literature on the methodology of conducting research and development projects, mass culture of plants and algae, invertebrates and fish, as well as legal, economic and environmental issues related to their breeding.	
	Supplementary literature	Publications from journals International Journal of Fisheries and Aquaculture, Aquaculture, Aquaculture Research, Aquaculture International, etc.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Preparation of a project regarding for example: (1) micro- and macroalgae cultivation, (2) multitrophic aquaculture, (3) culture of crossbred salmonids with improved breeding characteristics, with particular emphasis on resistance to viral diseases, (4) testing the effect of a dietary supplement on selected growth indicators in invertebrate.		
Work placement	Not applicable		

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