

**Subject card**

<b>Subject name and code</b>	Aquaculture - laboratory exercises, PG_00044098						
<b>Field of study</b>	Oceanography						
<b>Date of commencement of studies</b>	October 2024	<b>Academic year of realisation of subject</b>			2024/2025		
<b>Education level</b>	postgraduate studies	<b>Subject group</b>			Obligatory subject group in the field of study		
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>			at the university		
<b>Year of study</b>	1	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	1	<b>ECTS credits</b>			2.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>					
<b>Conducting unit</b>	Katedra Funkcjonowania Ekosystemów Morskich -> Faculty of Oceanography and Geography						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		mgr Marek Klin				
	<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	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>	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	<b>Number of study hours</b>	30		0.0		25.0	55
<b>Subject objectives</b>	The objective of this course is to acquaint students with the cultivation of various groups of aquatic organisms (algae, plants, invertebrates, fish), considering biological, legal, socio-economic, environmental, and marketing factors.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[OCEANMU2-K01] is ready to plan, implement and supervise, individually or collectively, next stages of the entrusted task, is ready to take responsibility for its results, cooperates effectively in the team and performs its functions in it various functions, including managerial ones	The student is prepared to plan, execute, and supervise, both individually and as part of a team, the successive stages of assigned tasks in the field of aquaculture. They are ready to take responsibility for the outcomes, effectively collaborate within a team, and assume various roles, including leadership positions.	[SK8] observation of student's independent or team work
	[OCEANMU2-U03] can plan and carry out independently advanced research and measurements, both in field and laboratory, using appropriately selected measurement and analytical techniques in the field of oceanography, adequately to the studied specialty and research problem	The student is capable of independently planning and conducting advanced research and measurements, both in the field and in the laboratory, using appropriately selected measurement and analytical techniques in the field of aquaculture, in accordance with their area of specialization and the research problem under consideration (curriculum content: B.1-4).	[SU5] implementation of a problem task
	[OCEANMU2-W05] knows and understands the principles of planning and conducting field and laboratory research as well as advanced methods and tools of scientific research, especially in the field of the studied specialty	The student possesses an in-depth knowledge and understanding of the principles of planning and conducting field and laboratory research, as well as the methods and tools used in scientific research, particularly in the fields of biotechnology and aquaculture (curriculum content B. 1-4).	[SW4] test/exam - oral or written [SW5] implementation of a problem task
	[OCEANMU2-K06] is ready to think and act in a way enterprising, and based on qualifications, engaging in preparation or implementation of professional tasks	The student is prepared to think and act in an entrepreneurial manner, leveraging their qualifications to engage in the preparation and execution of tasks in the broad field of aquaculture (curriculum content: B.1-4).	[SK2] presentation/project/paper/report
[OCEANMU2-W03] knows and understands research methods used in oceanography and related sciences	The student possesses an in-depth knowledge and understanding of the research methods employed in aquaculture and related sciences (curriculum content B.1-B4)	[SW4] test/exam - oral or written [SW5] implementation of a problem task	
Subject contents	B. Lecture Topics B 1: Understanding the operation of an aquaculture facility. B 2: Ontogeny of fish: from gamete to fry - laboratory sessions. B 3: Invertebrates in aquaculture - laboratory sessions. B 4: Algae cultivation - plants in aquaculture.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Activity during classes	51.0%	50.0%
	Carrying out/conducting research and presenting its results	51.0%	50.0%

Recommended reading	Basic literature	<p>Biegała Z., 2014. Zrównoważony rozwój akwakultury alternatywną przyszłością sektora przetwórstwa rybnego. Rocznik Samorządowy 3, 12-25.</p> <p>Demska-Zakęś K., 2008. Innowacyjne techniki oceny biologicznej i ochrony cennych gatunków ryb hodowlanych i raków. Wydawnictwo IRS.</p> <p>Das P., Mandal S.C., Bhagabati S.K., Akhtar M.S., Singh S.K., 2012. Important live food organisms and they role in aquaculture. Frontires in Aquaculture 5, 69-86.</p> <p>Goryczko K., Grudniewska J., 2015. Chów i hodowla pstrąga tęczowego. Wyd. IRS.</p> <p>Opuszyński K., 1979. Podstawy Biologii ryb. Wydawnictwo Rolnicze i Leśne.</p> <p>Rana K.J., 2007. Regional Review on Aquaculture Development 6. Western-European Region 2005. FAO Fisheries Circular No. 1017/6, ISSN 0429-9329.</p> <p>Stickney R.R. (ed.), 2000. Encyclopedia of Aquaculture. John Wiley&amp;Sons, Inc., ISBN: 978-0-471-29101-5.</p> <p>Varadi L., Szucs I., Pekar F., Blokhin S., Csavas I., 2001. Aquaculture development trends in Europe, W: Subasinghe R.P., Bueno P.B., Phillips M.J., Hough C., McGladdery S.E., Arthur J.R. (red.) Aquaculture in the Third Millennium - Technical Proceedings of the Conference on Aquaculture in the Third Millennium, pp. 397416. Bangkok, Thailand. 2025 February 2000. NACA, Bangkok and FAO, Rome. 471 pp.</p> <p>Zakęś Z., 2008. Biotechnologia w akwakulturze. Wydawnictwo IRS.</p>
	Supplementary literature	Scientific publications from the journals Aquaculture, Aquaculture Research, and Aquaculture International, as indicated by the lecturer.
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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