University of Gdańsk

Subject card

Subject name and code	Aquaculture - lecture, PG_00054206		
Field of study	Oceanography		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025
Education level	postgraduate 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 Polish
Semester of study	1	ECTS credits	1.0
Learning profile	academic	Assessment form	
Conducting unit	Pracownia Akwakultury -> Katedra Biologii Morza i Biotechnologii -> Faculty of Oceanography and Geography		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Konrad Ocalewicz	
	Teachers		

Lesson types							
	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	0.0	15
	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	15	3.0	10.0	28

Subject objectives	The aim of the course is to familiarize the student with the breeding of various aquatic organisms, taking into account biological, legal, socio-economic, environmental and marketing

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[OCEANMU2-U01] is able to formulate and solve complex and unusual problems regarding the functioning of individual components of the marine environment using knowledge from various fields and scientific disciplines and propose solutions	Student is able to formulate and solve complex and unusual problems related to aquaculture, integrating knowledge from various fields and scientific disciplines, and propose solutions	[SU3] text preparation/written work
	[OCEANMU2-K06] is ready to think and act in a way enterprising, and based on qualifications, engaging in preparation or implementation of professional tasks	Student jest gotów do myślenia i działania w sposób przedsiębiorczy, a w oparciu o posiadane kwalifikacje angażować się w przygotowanie lub realizację zadań z zakresu szeroko pojętej akwakultury	[SK1] oral statement/conversation/ discussion
	[OCEANMU2-W06] knows and identifies potential threats to the marine environment on a local and global scale resulting from strong anthropopressure, predicts their effects on various time and space scales	Student knows and identifies potential threats to the marine environment on a local and global scale as a consequence of the development of aquaculture and predicts their effects	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
	[OCEANMU2-W01] knows and understands in-depth specialized terminology used in oceanography and related sciences (in Polish and a selected foreign language)	Student knows and understands specialized terminology to an in-depth level used in aquaculture and biotechnology and related sciences	[SW1] oral statement/ conversation/discussion
	[OCEANMU2-K03] is ready to effectively organize his/her own work, is active and persistent and punctuality in completing tasks, is ready to carrying out evaluation of their own activities	Student is ready to effectively organize his own work, demonstrates activity and is characterized by perseverance and punctuality in the implementation of tasks aquaculture area, is ready to evaluate its own activities	[SK1] oral statement/conversation/ discussion [SK8] observation of student's independent or team work

Subject contents

A.1. History and development of aquaculture - from ancient to modern times; trends in the development of modern aquaculture in the world and in Europe, legal, socio-economic, environmental and marketing conditions for the development of aquaculture. A.2. Plants and algae, invertebrates and fish in global aquaculture, produced for consumption and economic purposes, and methods of their production breeding in the natural environment and in recirculating tanks. A.3. Chemical compounds originating from the breeding of aquatic organisms and their use by humans in various industries. A.4. Optimization of methods in the production of various groups of aquatic organisms, biotechnological techniques used to increase the growth rate, genomic manipulations (hybridization, polyploidism), transgenesis, hormonal regulation (production of single-sex individuals), new technologies production of feed with a high assimilation rate (e.g. high-protein plant food, insect larvae meal, food with a high unsaturated fatty acids and vitamins, etc.). A.5. Hatching and development of breeding of pathogen-free or pathogen-resistant larval stages, use of molecular techniques in screening and identification of pathogens, the use of probiotics and immunostimulants as dietary supplements and alternatives to antibiotics. A.6. Other aspects of aquaculture - bioethics, restoration of endangered species, introduction of alien species, non-production values, innovation e.t.c. A.7. The impact of aquaculture on the natural environment.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
pass with grade	51.0%	100.0%

Recommended reading

Basic literature	Biegała Z., 2014. Sustainable development of aquaculture - an alternative future of the fish processing sector. Rocznik Samorządowy 3, 12-25. Demska-Zakęś K., 2008. Innovative techniques for biological assessment and protection of valuable species of farmed fish and crayfish. IRS Publishing House. Das P., Mandal S.C., Bhagabati S.K., Akhtar M.S., Singh S.K., 2012. Important live food organisms and their role in aquaculture. Frontiers in Aquaculture 5, 69-86. Goryczko K., Grudniewska J., 2015. Breeding and breeding of rainbow trout. Ed. IRS. Opuszyński K., 1979. Basics of fish biology. Agricultural and Forest Publishing House. Rana K.J., 2007. Regional Review on Aquaculture Development 6. Western-European Region 2005. FAO Fisheries Circular No. 1017/6, ISSN 0429-9329. Stickney R.R. (ed.), 2000. Encyclopedia of Aquaculture. John Wiley&Sons, Inc., ISBN: 978-0-471-29101-5. Varadi L., Szucs I., Pekar F., Blokhin S., Csavas I., 2001. Aquaculture development trends in Europe, In: Subasinghe R.P., Bueno P.B., Phillips M.J., Hough C., McGladdery S.E., Arthur J.R. (ed.) 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. Zakęś Z., 2008. Biotechnology in aquaculture. IRS Publishing House
Supplementary literature	indicated by the host of scientific publications from the journals: Aquaculture, Aquaculture Research, Aquaculture International

	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	The role of aquaculture in the economy of Poland and the European Union	
Work placement	Not applicable	

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