

Subject card

Subject name and code	Biological oceanography - lecture, PG_00159302						
Field of study	Oceanography						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2025/2026		
Education level	undergraduate studies		Subject group				
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		3.0		
Learning profile	academic		Assessment form				
Conducting unit	Pracownia Biologii Planktonu -> Katedra Biologii Morza i Biotechnologii -> Faculty of Oceanography and Geography						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Agata Weydmann-Zwolicka				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	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		15.0		30.0	75
Subject objectives	Lecture: Learning about life in seas and oceans, the interdependence of the biotic and abiotic spheres, assessment of the conditions determining the degree of differentiation of ecological formations.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	OCEANL3-W01		n/a		[SW4] test/exam - oral or written		
	OCEANL3-W03		n/a		[SW4] test/exam - oral or written		
	OCEANL3-W02		n/a		[SW4] test/exam - oral or written		

Subject contents	1. The importance and role of biological oceanography as a science about life in the sea - the history of the development of this science, with particular emphasis on great expeditions. 2. General characteristics of the ocean as a living environment - the role and importance of selected physical, chemical and dynamic factors, interactions between the environment and flora and fauna communities. 3. Biological zones in the sea: vertical and horizontal stratification. 4. Biocenotic characteristics of ecological formations in the sea (plankton, benthos, nekton). 5. The specificity of life in extreme conditions - megafauna, hydrothermal vents, cold seeps. 6. Productivity at sea; methods of measuring primary and secondary production, factors shaping the level of production in world ocean. 7. Energy flow through the ecosystem: food chains, regionalization of ecosystem productivity and efficiency. 8. Use of sea and ocean resources: fishing, obtaining other living resources (marine vegetation, invertebrates, reptiles, mammals). 9. Elements of protection of marine ecosystems. 10. The impact of climate change on the marine environment.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Exam	51.0%	100.0%
Recommended reading	Basic literature	Demel K. (1979) <i>Życie morza</i>, Wyd. Morskie, Gdańsk Duxbury A.C., Duxbury A.B., Sverdrup K.A. (2002) <i>Oceany świata</i>, PWN, Warszawa Nybakken J.W., Bartness M. D. (ed) (2005) <i>Marine Biology, an ecological approach</i>, Person Benjamin Cummings Pliński M. (1994) <i>Biologia organizmów morskich</i>. Wydawnictwo UG, Gdańsk Thurman H.V. (1982) <i>Zarys oceanologii</i>, Wyd. Morskie, Gdańsk Umiński T. (1976) <i>Zwierzęta i oceany: popularna zoogeografia wód morskich</i>. Wydawnictwo Szkolne i Pedagogiczne, Warszawa Żmudziński L. (1990) <i>Świat zwierzęcy Bałtyku: atlas makrofauny</i>. Wydawnictwo Szkolne i Pedagogiczne, Warszawa	

	Supplementary literature	Gage J.G., Tyler P.A. (1991) Deep Sea Biology, Cambridge Univesity Press Korzeniewski K. (1998) Ochrona środowiska morskiego, Wyd. UG, Gdańsk Lwowicz M.I. (1979) Zasoby wodne świata, PWN Warszawa Depowski S. (1998) Surowce mineralne mórz i oceanów, Wyd. Scholar, Warszawa Różańska Z. (1987) Zasoby, zanieczyszczenia i ochrona wód morskich ze szczególnym uwzględnieniem Bałtyku, PWN Warszawa
	eResources addresses	Podstawowe - Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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