University of Gdańsk

Subject card

Subject name and code	Biological Oceanography - lecture, PG_00205304		
Field of study	Oceanography		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2027/2028
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Subject group related to scientific research in the field of study
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	exam
Conducting unit	Laboratory of Plankton Biology -> Department of Marine Biology and Biotechnology -> Faculty of Oceanography and Geography -> Rector		
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

Additional information:

Lecture with multimedia presentation

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	2.0	43.0	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] has an advanced knowledge and understanding of the terminology used in oceanography and related exact and natural sciences (in Polish and a selected foreign language)	Has an advanced knowledge and understanding of the terminology used in oceanography and related exact and natural sciences, concerning marine biology (in both Polish and English).	[SW4] test/exam - oral or written
[OCEANL3-W02] has a broad knowledge and understanding of physical, biological, chemical, and geological processes and phenomena occurring in aquatic environments, with particular emphasis on the marine environment	Understands and has a broad comprehension of biological processes and phenomena occurring in the marine environment.	[SW4] test/exam - oral or written
[OCEANL3-W03] has an advanced understanding of the relationships between living and non-living components of aquatic environments, and is aware of the complex nature, intricacy, and natural variability of these environments	Has an advanced understanding of the relationships between biotic and abiotic components of the marine environment, and is aware of the complex nature of seas and oceans, including their intricacy and natural variability.	[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 inworld 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) Życie morza, Wyd. Morskie, Gdańsk Duxbury A.C., Duxbury A.B., Sverdrup K.A. (2002) Oceany świata, PWN, Warszawa Nybkken J.W., Bartness M. D. (ed) (2005) Marine Biology, an ecological approach, Person Beniamin Cummings Pliński M. (1994) Biologia organizmów morskich. Wydawnictwo UG, Gdańsk Thurman H.V. (1982) Zarys oceanologii, Wyd. Morskie, Gdańsk Umiński T. (1976) Zwierzęta i oceany: popularna zoogeografia wód morskich. Wydawnictwo Szkolne i Pedagogiczne, Warszawa Żmudziński L. (1990) Świat zwierzęcy Bałtyku: atlas makrofauny. 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	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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