University of Gdańsk

Subject card

Subject name and code	Marine trophic networks, PG_00146031						
Field of study	Biology						
Date of commencement of studies	October 2023		Academic year of realisation of subject	2025/2026			
Education level	Bachelor's studies		Subject group	Optional subject group			
Mode of study	full-time studies		Mode of delivery	at the university			
Year of study	3		Language of instruction	Polish Polish			
Semester of study	6		ECTS credits	1.0			
Learning profile	academic		Assessment form	credit			
Conducting unit	Laboratory of Vertebrate Ecology and Ethology -> Department of Vertebrate Ecology and Zoology -> Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor	dr Katarzyna Zmudczyńska-Skarbek					
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	15.0	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		2.0	8.0	25	
Subject objectives	1. To provide basic knowledge of biogeography and biodiversity of marine ecosystems on Earth. 2. To understand the food and functional relationships between organisms in different types of seas and different habitats. 3. To understand the response of entire food webs to individual changes in abiotic conditions or relationships between organisms. 4. To indicate the role of living organisms in the transfer of matter between horizontal and vertical zones in the sea and between the sea and land. 5. To familiarise students with techniques for sampling and analysing marine biological materials.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BIOLL3_W05] the graduate knows the rules and describes the mechanisms of life at the population, biocenosis and ecosystem levels and the temporal and spatial determinants of biodiversity	explains the basic rules and describes the mechanisms of marine food webs and the temporal and spatial determinants of biodiversity	[SW4] test/exam - oral or written
[BIOLL3_U07] the graduate is able to independently search and use available sources of biological information, including electronic sources	independently searches for and reads with understanding scientific texts on marine biology in Polish and simple texts in English	[SU1] oral statement/conversation/ discussion
[BIOLL3_W15] the graduate knows in an advanced degree the rules, methods and techniques of field research in the natural environment and the possibilities of their use in nature conservation	presents the basic rules, methods and techniques for conducting marine environment research and the possibilities for their use in marine conservation	[SW4] test/exam - oral or written
[BIOLL3_K01] the graduate is ready to evaluate his/her own knowledge and understands the need for continuous learning and development and is open to new ideas	knows the extent of their knowledge and understands the need for continuous learning and development, and is open to new ideas	[SK8] observation of student's independent or team work
[BIOLL3_U06] the graduate can read with comprehension simple scientific biological texts in Polish and simple texts in English	reads and understands scientific texts on marine biology in Polish and simple texts in English	[SU1] oral statement/conversation/ discussion
[BIOLL3_U05] the graduate is able to synthesise data from various sources and draw appropriate conclusions on this basis	draws correct conclusions based on the analysis and synthesis of biological data from various sources, including scientific articles	[SU1] oral statement/conversation/ discussion

Subject contents

1. Biogeography and biodiversity of marine ecosystems on Earth, including biodiversity hotspots.
2. The structure and functioning of marine food webs and key species in different types of seas and habitats (including plankton, kelp forests, underwater meadows, coral reefs, soft and hard bottom communities, sea ice algae and fauna, deep-sea communities and underwater mountains).
3. Trophic cascades and mechanisms regulating the trophic pyramid (top-down, bottom-up, wasp-waist).
4. The role of living organisms in the transfer of matter within and between horizontal and vertical zones in the sea (food chain, detritus chain, microbial loop) and between the sea and land (including the role of seabirds).
5. Ecosystem engineers in the marine environment.
6. Consequences of climate change for marine organisms.
7. Techniques for sampling and analysing marine biological materials.

Prerequisites and co-requisites

Basic knowledge of ecology, especially marine ecology. Knowledge of English sufficient to use the literature on the subject.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
not relevant	51.0%	100.0%

Recommended reading

Basic literature

Nybakken JW, Bartness MD (eds). 2005. Marine Biology, an ecological approach, Person Beniamin Cummings

Weiner J. 2004. Życie i ewolucja biosfery. Wydawnictwo Naukowe PWN, Warszawa

Sakshaug E, Johnsen G, Kovacs K (eds). 2009. Ecosystem Barents Sea. Tapir Academic Press, Trondheim

Mulder CPH, Anderson WB, Towns DR, Bellingham PJ (eds). 2011. Seabird Islands. Ecology, Invasion and Restoration. Oxford University Press, New York

Selected academic articles from the literature on the subject, proposed by the lecturer

	Supplementary literature	Zmudczyńska-Skarbek K, Balazy P. 2017. Following the flow of ornithogenic nutrients through the Arctic marine coastal food webs. *Journal of Marine Systems* 168: 3137 Mladenov PV. 2013. Marine Biology. A very short introduction. Oxford University Press, New York
	eResources addresses	
Example issues/ example questions/ tasks being completed	none	
Work placement	Not applicable	

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