

Subject card

Subject name and code	Structure and funtioning of food webs in the marine environment, PG_00117741						
Field of study	Oceanography						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2026/2027		
Education level	Master's studies		Subject group		Obligatory subject group in the field of study Optional subject group 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		2.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Adam Sokołowski				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	20.0	0.0	0.0	0.0	0.0	20
	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	20		5.0		25.0	50
Subject objectives	Developing knowledge about trophic interactions, the structure and principles of functioning of the food webs, energy flow and the cycling of matter in the marine environment as well trophic transfer of contaminant pollutants.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[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	In an active and systematic way student organizes own work aimed at learning the principles of functioning of food webs in the marine environment.	[SK1] oral statement/conversation/discussion [SK2] presentation/project/paper/report
	[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 defines and solves problems related to the organization and functioning of trophic links using interdisciplinary knowledge and skills.	[SU1] oral statement/conversation/discussion [SU2] presentation/project/paper/report
	[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 correctly applies specialized terminology on the structure and functioning of food webs in the marine environment.	[SW1] oral statement/conversation/discussion [SW2] presentation/project/paper/report
	[OCEANMU2-U05] is able to use source information in Polish and a selected foreign language, including archival and electronic databases, in the field of oceanographic issues, performs critical analysis and synthesis of information	Student is able to search for, synthesize and verify source information pertaining to the subject scope.	[SU1] oral statement/conversation/discussion [SU2] presentation/project/paper/report
	[OCEANMU2-U12] can independently expand and update oceanographic knowledge when planning and developing a professional career, as well as motivates others to deepen their knowledge	Student is able to independently gather information from different sources and develop knowledge in the field of the organization and functioning of food webs in the marine environment	[SU1] oral statement/conversation/discussion [SU2] presentation/project/paper/report
Subject contents	1. Definition, components, concepts and descriptors of the food web. 2. Modern methods for identifying the sources of organic matter in marine ecosystems and defining trophic interactions. 3. Methods of constructing a food web, parameters describing quantitatively and qualitatively the flow of energy, functioning and stability of food webs. Food web theories. 4. Food web in the Baltic Sea on the example of the Gulf of Gdansk - the use of stable isotopes. 5. Current trends in food web research - biodiversity, trophic transfer of contaminant pollutants, protection and management of the coastal zone.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Contribution to the discussion on given topic.	51.0%	15.0%
	Multimedia presentation on a given topic.	51.0%	85.0%
Recommended reading	Basic literature	Polis G.A., Winemiller K.O., 1996. Food Webs: Integration of Patterns and Dynamics. Chapman and Hall, New York Rundel P.W., Ehleringer J.R., Nagy K.A., 1989. Stable isotopes in ecological research. Springer-Verlag, New York Belgrano A., Scharler U.M., Dunne J., Ulanowicz R.E., 2005. Aquatic Food Webs. An Ecosystem Approach. Oxford University Press, Oxford Scientific publications on the topics covered in the course.	
	Supplementary literature	Coleman D.C., Fry B., 1991. Carbon Isotope Techniques. Academic Press, San Diego Karasov W.H., Martinez del Rio C., 2007. Physiological Ecology: How Animals Process Energy, Nutrients and Toxins. Princeton University Press, Princeton	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Classical methods for determining trophic interactions within a biocenosis. The microbial loop.		
Work placement	Not applicable		

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