

Subject card

Subject name and code	Ecological modelling - lecture, PG_00117736						
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		1.0		
Learning profile	academic		Assessment form		exam		
Conducting unit	Laboratory of Ichthyology -> Department of Marine Ecology -> Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Mariusz Sapota				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	10.0	0.0	0.0	0.0	0.0	10
	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	10		8.0		10.0	28
Subject objectives	Explanation of methods of creating ecological models, teaching the principles of creating models of the functioning of marine ecosystems						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[OCEANMU2-W05] knows and understands the principles of planning and conducting field and laboratory research as well as advanced methods and tools of scientific research, especially in the field of the studied specialty		knows and understands to an in-depth degree basic and advanced mathematical, statistical and IT tools used to create models of phenomena and processes occurring in the aquatic environment		[SW4] test/exam - oral or written		
	[OCEANMU2-W02] knows and understands complex processes and phenomena occurring in the marine environment, with particular emphasis on the coastal zone, as well as complex relationships between living and non-living elements of the aquatic environment		Explanation of methods of creating ecological models, teaching the principles of creating models of the functioning of marine ecosystems		[SW4] test/exam - oral or written		

Subject contents	Types of ecological models		
	Construction of block models		
	Mathematical modelling tools		
	Population models . Dynamic models of matter circulation and energy flow		
	Simulation and forecasting models		
Prerequisites and co-requisites	basic knowledge of statistics, knowledge of the general principles of functioning of marine ecosystems		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	exam	51.0%	100.0%
Recommended reading	Basic literature	Ecopath with Ecosim users guide, Lenfest Ocean Futures Project 2008 Witek Z. 1993. Structure and function of marine ecosystem In the Gdansk Basin on the basis of studies performed in 1987. (ed.) Studia I Materiały Oceanologiczne nr 63	
	Supplementary literature	Kremer J.N., Nixon S.W. A Coastal Marine Ecosystem, , Ecological Studies 24, 1978 Fennel W. Neumann T., Introduction to the modeling of marine ecosystems, , Elsevier Oceanography Series 72, 2004 Dzierzbicka-Glowacka L. 2000 Matematyczne modelowanie procesow biologicznych w gornej warstwie morza, Rozprawy i monografie IO PAN Sopot, 13	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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