

**Subject card**

<b>Subject name and code</b>	Ecological Modelling - lecture, PG_00204932						
<b>Field of study</b>	Oceanography						
<b>Date of commencement of studies</b>	October 2026	<b>Academic year of realisation of subject</b>			2027/2028		
<b>Education level</b>	Master's studies	<b>Subject group</b>			Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study		
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>			at the university		
<b>Year of study</b>	2	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	3	<b>ECTS credits</b>			1.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>			exam		
<b>Conducting unit</b>	Laboratory of Ichthyology -> Department of Marine Ecology -> Faculty of Oceanography and Geography -> Rector						
<b>Name and surname of lecturer (lecturers)</b>	Subject supervisor		dr hab. Mariusz Sapota				
	Teachers						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	10.0	0.0	0.0	0.0	0.0	10
	E-learning hours included: 0.0						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	<b>Number of study hours</b>	10		2.0		13.0	25
<b>Subject objectives</b>	Explanation of methods of creating ecological models, teaching the principles of creating models of the functioning of marine ecosystems						
<b>Learning outcomes</b>	<b>Course outcome</b>		<b>Subject outcome</b>		<b>Method of verification</b>		
	[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	<p>Types of ecological models</p> <p>Construction of block models</p> <p>Mathematical modelling tools</p> <p>Population models . Dynamic models of matter circulation and energy flow</p> <p>Simulation and forecasting models</p>								
Prerequisites and co-requisites	basic knowledge of statistics, knowledge of the general principles of functioning of marine ecosystems								
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="456 707 794 734">Subject passing criteria</th> <th data-bbox="799 707 1137 734">Passing threshold</th> <th data-bbox="1142 707 1481 734">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 741 794 768">exam</td> <td data-bbox="799 741 1137 768">51.0%</td> <td data-bbox="1142 741 1481 768">100.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	exam	51.0%	100.0%
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exam	51.0%	100.0%							
Recommended reading	Basic literature	<p>Ecopath with Ecosim users guide, Lenfest Ocean Futures Project 2008</p> <p>Witek Z. 1993. Structure and function of marine ecosystem In the Gdansk Basin on the basis of studies performed in 1987. (ed.) Studia i Materialy Oceanologiczne nr 63</p>							
	Supplementary literature	<p>Kremer J.N., Nixon S.W. A Coastal Marine Ecosystem, , Ecological Studies 24, 1978</p> <p>Fennel W. Neumann T., Introduction to the modeling of marine ecosystems, , Elsevier Oceanography Series 72, 2004</p> <p>Dzierzbicka-Glowacka L. 2000 Matematyczne modelowanie procesow biologicznych w gornej warstwie morza, Rozprawy i monografie IO PAN Sopot, 13</p>							
	eResources addresses								
Example issues/ example questions/ tasks being completed									
Work placement	Not applicable								

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