

Subject card

Subject name and code	Marine physics - lecture, PG_00159308						
Field of study	Oceanography						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2025/2026		
Education level	Bachelor's studies		Subject group		Obligatory subject group 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	4		ECTS credits		3.0		
Learning profile	academic		Assessment form		exam		
Conducting unit	Laboratory of Physical Oceanography -> Department of Physical Oceanography and Climate Research -> Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Jordan Badur				
	Teachers		dr Jordan Badur				
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						
	eNauczanie source addresses: Moodle ID: 13572 ATC-WOiG-OCEAN-L3DZ-(2025/2026) Fizyka morza https://mdl.ug.edu.pl/course/view.php?id=13572						
	Additional information:						
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		20.0		25.0	75
Subject objectives	Acquire knowledge and understanding of basic laws governing physical processes occurring in the sea						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	OCEANL3-W05		Knowledge about research methods and approaches (mathematical, statistical and IT tools) used in oceanography in order to describe and interpret physical phenomena in the sea		[SW4] test/exam - oral or written		
	OCEANL3-U01		Ability to use correctly science terminology in different forms of expression in the field of marine physics		[SU4] test/exam - oral or written		
	OCEANL3-W02		Knowledge and understanding of the processes and phenomena occurring in the sea.		[SW4] test/exam - oral or written		
	OCEANL3-W01		Knowledge and understanding of the basic concepts and terms used in the field of marine physics and related science (in Polish and English)		[SW4] test/exam - oral or written		
Subject contents	Black body radiation laws.Solar energy flux at the Earth and its distribution, greenhouse effct. Molecular structure and physical properties of seawater. Forces acting on water in the ocean. Elements of seawater thermodynamics. Equilibrium and water movement - examples of different type of sea currents, wave and convection. Molecular and turbulent exchange of mass, heat and momentum. Acoustic waves in the sea.						

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	Dera J.: Marine Physics. Wyd. PWN, Warszawa, 1983, 2003. Druet, Kowalik, 1970, Marine dynamics, Wyd. Morskie Gdańsk	
	Supplementary literature	Massel S.R., 2010. Hydrodynamical processes in marine ecosystems. Wyd. Uniwersytetu Gdańskiego.	
	eResources addresses		
	Example issues/ example questions/ tasks being completed	Analysis of different expressions.for seawater equation of state.	
Work placement	Not applicable		

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