

Subject card

Subject name and code	Selected topics in sea dynamics, PG_00131529						
Field of study	Marine Hydrography						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2027/2028		
Education level	Bachelor's studies		Subject group		Optional subject group Subject group related to practical vocational preparation		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	5		ECTS credits		1.0		
Learning profile	practical		Assessment form		credit		
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 hab. Witold Cieřlikiewicz				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	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		1.0		10.0	26
Subject objectives	To introduce students to the phenomena of sea waves, sea currents - an in-depth discussion of selected issues.						
	To explain to students selected elements of marine dynamics in analytical terms.						
	To prepare students for the practical application of basic issues related to modern marine dynamics.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[HML3-U08] independently use the professional literature available in traditional and electronic form, make an assessment, critical analysis and synthesis as well as the correct interpretation of the information obtained	Independently use the professional literature and the Internet; is able to integrate, evaluate and correctly interpret the information obtained and, on the basis of this, draw conclusions, form opinions and take action.	[SU1] oral statement/conversation/discussion
	[HML3-U14] use the applicable terminology in presenting and discussing problems related to the field of study	Use current scientific terminology in presenting and discussing issues related to marine dynamics	[SU1] oral statement/conversation/discussion
	[HML3-U19] plan and implement independent learning and improvement of his/her professional competences	Plan and organise independent learning and improvement of their professional and personal competences, including language competences.	[SU1] oral statement/conversation/discussion
	[HML3-W01] selected facts, phenomena and processes, as well as methods and theories concerning them, explaining the complex relationships between them, constituting basic general knowledge in the field of scientific disciplines forming the theoretical foundations specific to the field of study	At an advanced level, marine hydrodynamics with its mathematical description; its relationship to the laws of physics and its relationship in relation to natural processes; knows and understands the theoretical foundations of other areas of science necessary to formulate and solve typical tasks related to marine dynamics.	[SW1] oral statement/conversation/discussion
	[HML3-W02] selected phenomena and processes occurring in the hydrosphere, atmosphere, lithosphere and biosphere, their interconnections and relations, as well as practical applications of this knowledge in professional activities related to the field of study	Phenomena and processes in the hydrosphere and atmosphere and their interrelationships.	[SW1] oral statement/conversation/discussion
Subject contents	Exercises: Calculus tasks to consolidate the material presented in lectures: basic equations of fluid mechanics, vorticity and circulation, description of wave motion. Problem tasks complementing the material presented in lectures.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	activity in the class	51.0%	100.0%
Recommended reading	Basic literature	MASSEL S. R.: Procesy hydrodynamiczne w ekosystemach morskich. Wyd. UG, Gdańsk 2010. (in Polish)	

	Supplementary literature	DRUET C., Kowalik Z.: Dynamika morza. Wyd. Morskie, Gdańsk 1970. (in Polish) DRUET C.: Dynamika stratyfikowanego oceanu. Wyd. PWN, Warszawa 1994 (in Polish) DRUET C.: Elementy hydrodynamiki geofizycznej. Wyd. PWN, Warszawa 1995. (in Polish) KNAUSS J. A.: Introduction to physical oceanography. Prentice Hall, 1996. LISICKI A.: Pływy na morzach i oceanach. Wyd. GTN, Gdańsk 1996. (in Polish) MASSEL S. R.: Fluid Mechanics for Marine Ecologists. Springer, 1999 MASSEL S.: Poradnik hydrotechnika. Wyd. Morskie, Gdańsk 1992. (in Polish) MELLOR G. L.: Introduction to physical oceanography. Wyd. AIP Press, 1996.
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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