University of Gdańsk

Subject card

Subject name and code	Selected topics in sea dynamics, PG_00131529		
Field of study	Marine Hydrography		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2026/2027
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 Cieślikiewicz	
	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

Additional information:
Task solvingexercises

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.

<table>
<tr><td>Learning outcomes</td><td>
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<tr><th>Course outcome</th><th>Subject outcome</th><th>Method of verification</th></tr>
<tr><td>[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</td><td>Phenomena and processes in the hydrosphere and atmosphere and their interrelationships.</td><td>[SW1] oral statement/ conversation/discussion</td></tr>
<tr><td>[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</td><td>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.</td><td>[SW1] oral statement/ conversation/discussion</td></tr>
<tr><td>[HML3-U19] plan and implement independent learning and improvement of his/her professional competences</td><td>Plan and organise independent learning and improvement of their professional and personal competences, including language competences.</td><td>[SU1] oral statement/conversation/ discussion</td></tr>
<tr><td>[HML3-U14] use the applicable terminology in presenting and discussing problems related to the field of study</td><td>Use current scientific terminology in presenting and discussing issues related to marine dynamics</td><td>[SU1] oral statement/conversation/ discussion</td></tr>
<tr><td>[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</td><td>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.</td><td>[SU1] oral statement/conversation/ discussion</td></tr>
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<tr><td>Subject contents</td><td>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.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>activity in the class</td><td>51.0%</td><td>100.0%</td></tr>
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<tr><td>Recommended reading</td><td>Basic literature</td><td>MASSEL S. R.: Procesy hydrodynamiczne w ekosystemach morskich. Wyd. UG, Gdańsk 2010. (in Polish)</td></tr>
</table>

	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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