University of Gdańsk

Subject card

Subject name and code	Physics for Oceanographers - laboratory , PG_00205258						
Field of study	Oceanography						
Date of commencement of studies	October 2027		Academic year of realisation of subject	2027/2028			
Education level	Bachelor's studies		Subject group	Obligatory subject group in the field of study 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	1		Language of instruction	Polish			
Semester of study	2		ECTS credits	2.0			
Learning profile	academic		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 Aleksandra Cupiał				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	18.0	0.0	0.0	18
	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	18		2.0	30.0	50	
Subject objectives	Developing necessary skills for science observations and their analysis as well as interpretation.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OCEANL3-W01] has an advanced knowledge and understanding of the terminology used in oceanography and related exact and natural sciences (in Polish and a selected foreign language)	Knowledge and understanding of terminology used in physics at an advanced level.	[SW2] presentation/project/paper/ report
[OCEANL3-U04] is able to independently search for information in Polish and foreign specialist literature, as well as on the Internet and in databases	Ability to search for information in polish and english specialistic literature as well as websites in the field of physics.	[SU2] presentation/project/paper/ report
[OCEANL3-W07] knows and understands the principles of occupational health and safety for an oceanographer	Knowledge and understanding of occupational health and safety rules in the laboratory.	[SW2] presentation/project/paper/ report
[OCEANL3-W02] has a broad knowledge and understanding of physical, biological, chemical, and geological processes and phenomena occurring in aquatic environments, with particular emphasis on the marine environment	Understanding and correct describing elementary physical phenomena occurirng in nature, including sea environment, as well as laws that govern such phenomena.	[SW2] presentation/project/paper/ report
[OCEANL3-U03] is able to process, describe, and present results, and draw conclusions	Ability to processing of laboratory measurements results in a synthetic way and development of correct conclusions.	[SU2] presentation/project/paper/ report
[OCEANL3-K05] is willing to take responsibility for the safety of his/ her own and others' work, is aware of the risks and threats resulting from the work performed	Readiness to take responsibility for its own and other students safety during work at the physical laboratory, awareness of the risks.	[SK2] presentation/project/paper/ report

Subject contents

Measurements errors (uncertainties) and their propagation. Experiments relates to three branches of physics: mechanics, heat and macroscopic properties of matter. Rules of conduct in the laboratory.

Prerequisites and co-requisites

Differential and integral calculus as well as vector algebra at elementary level

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
reports	51.0%	100.0%

Recommended reading

Basic literature

Samuel J. Ling, William Moebs , Jeff Sanny, 2018, University physics, OpenStax Polska

Supplementary literature

1. Jearl Walker, 2011. Problems in elementary physics. Wydawnictwo: Naukowe PWN.

2. Paul G. Hewitt, 2010. Conceptual physics Wydawnictwo Naukowe PWN.

3. David Halliday, Robert Resnick, Jearl Walker, 2007. Fundamentals of physics - part 1 Mechanics. Wydawnictwo Naukowe PWN.

4. David Halliday, Robert Resnick, Jearl Walker, 2007 - Fundamentals of physics - part 2. Mechanics, oscillations and waves, thermodynamics. Wydawnictwo Naukowe PWN.

5. David Halliday, Robert Resnick, Jearl Walker, 2007. Fundamentals of physics - part 3 Electricity and magnetism. Wydawnictwo Naukowe PWN.

6. David Halliday, Robert Resnick, Jearl Walker, 2007. Fundamentals of physics - part 4 Electromagnetic waves, optics and relativity theory. Wydawnictwo Naukowe PWN.

7. David Halliday, Robert Resnick, Jearl Walker, 2007. Fundamentals of physics - part 5 Modern physics. Wydawnictwo Naukowe PWN.

8. M.Born, E.Wolf, 1988. Principles of Optics. Pergamon Press, London.

9. H. Szydlowski, 1973, Physical laboratory, PWN

eResources addresses

Example issues/ example questions/ tasks being completed	How can the acceleration of gravity be determined with the use of pendulum?
Work placement	Not applicable

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