University of Gdańsk

Subject card

Subject name and code	Introduction to Marine Acoustics - laboratory , PG_00206146		
Field of study	Oceanography		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2028/2029
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Optional subject group 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	3	Language of instruction	Polish
Semester of study	5	ECTS credits	1.0
Learning profile	academic	Assessment form	credit
Conducting unit	Department of Physical Oceanography and Climate Research -> Faculty of Oceanography and Geography -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Jakub Idczak	
	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	9.0	25

Subject objectives

Familiarizing students with the basic phenomena related to the propagation of acoustic waves in the sea and their generation and reception.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OCEANL3-U05] is able to use general-purpose and specialized software, as well as mathematical and statistical methods, in data analysis and the presentation of results	Is able to use application and specialist software in the analysis of hydroacoustic data	[SU3] text preparation/written work
[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	Knows and understands the basic physical processes and phenomena related to the propagation of acoustic waves in the sea and their generation and reception, the principles that determine these processes	[SW4] test/exam - oral or written
[OCEANL3-W05] has an advanced knowledge of techniques, research methods, and tools (mathematical, statistical, and computational) used by oceanographers to describe and interpret processes and phenomena occurring in the marine environment	Knows and understands the importance of specialist IT tools for the analysis and interpretation of hydroacoustic data	[SW4] test/exam - oral or written
[OCEANL3-U03] is able to process, describe, and present results, and draw conclusions	Is able to develop, describe and present research results and formulate conclusions on this basis regarding issues related to hydroacoustic research.	[SU3] text preparation/written work
[OCEANL3-W03] has an advanced understanding of the relationships between living and non-living components of aquatic environments, and is aware of the complex nature, intricacy, and natural variability of these environments	Knows and understands at an advanced level the relationship between sound wave propagation in sea water and the influence of environmental parameters on this phenomenon	[SW4] test/exam - oral or written
[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	Is able to use application and specialist software in the analysis of hydroacoustic data	[SK4] test/exam - oral or written

Subject contents

Solving calculation problems from topics covered in lectures and demonstrating the capabilities of computer programs designed for processing hydroacoustic data. Introduction to selected aspects of using computer programs.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
test	51.0%	50.0%
determining the grade based on partial grades received during the semester	51.0%	50.0%

Recommended reading

Basic literature	1. Clay C. S. and Medwin H., 1977. Acoustical Oceanography: Principles and Applications. Wiley, New York, 544. 2. Medwin H. and Clay C. S., 1998. Fundamentals of Acoustical Oceanography. Academic Press, Boston, 712. 3. Medwin H., 2005. Sounds in the Sea. From Ocean Acoustics to Acoustical Oceanography. Cambridge University Press, New York, 643. 4. Śliwiński A., 2001. Ultradźwięki i ich zastosowania. Wyd. Nauk.-Tech., Warszawa, 426. (in Polish)
Supplementary literature	1. Tolstoy I., Clay C. S., 1966. Ocean acoustics: Theory and experiments in underwater sound. McGraw-Hill. 2. MacLennan D. N., Simmonds E. John, 2005. Fishery Acoustics. Blackwell Science
eResources addresses	

Example issues/ example questions/ tasks being completed

Work placement

Not applicable

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