

Subject card

Subject name and code	Introduction to marine acoustics - laboratory exercises, PG_00159312						
Field of study	Oceanography						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2027/2028		
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		5.0		10.0	30
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 application and specialist software in the analysis of hydroacoustic data	[SU6] demonstration of practical skills [SU8] observation of student's independent or team work
	OCEANL3-U03	Is able to develop, describe and present research results and formulate conclusions on this basis regarding issues related to hydroacoustic research.	[SU1] oral statement/conversation/discussion [SU6] demonstration of practical skills
	OCEANL3-W02	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-W03	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-W05	Knows and understands the importance of specialist IT tools for the analysis and interpretation of hydroacoustic data	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion
	[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	[SK1] oral statement/conversation/discussion [SK4] test/exam - oral or written [SK6] demonstration of practical skills
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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