

Subject card

Subject name and code	Thermodynamics of Sea Water - lecture, PG_00204971						
Field of study	Oceanography						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2026/2027		
Education level	Master'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	1	Language of instruction			Polish		
Semester of study	2	ECTS credits			1.0		
Learning profile	academic	Assessment form			credit		
Conducting unit	Department of Geophysics -> Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Marcin Paszkuta				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	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	Understand the mechanisms, causes and effects of thermodynamic processes in the sea.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[OCEANMU2-W02] knows and understands complex processes and phenomena occurring in the marine environment, with particular emphasis on the coastal zone, as well as complex relationships between living and non-living elements of the aquatic environment		Knows in depth the practical application of marine thermodynamics		[SW4] test/exam - oral or written		
Subject contents	A. Problems of the lecture: A.1 Fundamentals of general phenomenological thermodynamics, A.2 Application of thermodynamic principles to physically pure (simple) substances, A.3 Application of the thermodynamics of phase transitions to comparison in physically pure substances and in the sea, A.4 Introduction to the physical thermodynamics of the sea in statistical terms.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	final written examination		51.0%		100.0%		
Recommended reading	Basic literature		1. Dera. J., 2003. Fizyka Morza. Wyd. PWN, Warszawa, ISBN: 83-01-14020-8				
	Supplementary literature		1 Leyendekkers. J.V., Hood W. D., 1976. Thermodynamics of Seawater. New York, ISBN 0-8247-6486-2;				
	eResources addresses						

Example issues/ example questions/ tasks being completed	A.1 Fundamentals of general phenomenological thermodynamics, A.2 Application of thermodynamic principles to physically pure (simple) substances, A.3 Application of the thermodynamics of phase transitions for comparison in physically pure substances and the sea, A.4 Introduction to the physical thermodynamics of the sea in statistical terms.
Work placement	Not applicable

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