University of Gdańsk

Subject card

Subject name and code	Marine Meteorology - lecture, PG_00204958						
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	1		ECTS credits		1.0		
Learning profile	academic		Assessment form		exam		
Conducting unit	Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Janusz Filipiak				
	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	To familiarize students with the physical processes and phenomena characteristic of the atmosphere over marine areas. To familiarize students with the aspects of ocean-atmosphere interactions relevant to marine processes and the basic methods and possibilities of using meteorological data in oceanography.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OCEANMU2-U02] is able to fluently and accurately use scientific terminology when presenting and discussing oceanographic issues, and to propose and justify innovative solutions	Can fluently and appropriately use scientific terminology in presenting and discussing problems in the field of meteorology	[SU4] test/exam - oral or written
[OCEANMU2-W04] has an in-depth understanding of the latest research trends in oceanography, as well as the possibilities for practical application of related achievements; evaluates their usefulness and limitations in solving scientific research problems, and critically analyzes and assesses their applicability	Knows and understands to an in-depth degree the basic and advanced techniques, research methods and computational tools used in modern atmospheric sciences, including the possibilities associated with the use of numerical weather models	[SW4] test/exam - oral or written
[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 and understands to an in-depth degree the specialized terminology used in atmospheric sciences; knows and understands to an in-depth degree the complex relationships between marine and atmospheric processes	[SW4] test/exam - oral or written
[OCEANMU2-W01] knows and understands in-depth specialized terminology used in oceanography and related sciences (in Polish and a selected foreign language)	Knows and understands to an in-depth degree the specialized terminology used in atmospheric sciences; knows and understands to an in-depth degree the complex relationships between marine and atmospheric processes	[SW4] test/exam - oral or written
[OCEANMU2-K04] is ready to critically evaluate his/her knowledge and received content in the field of natural sciences in in particular in the field of the studied specialty, a in problematic situations, supports oneself with knowledge experts	Is ready to critically evaluate the knowledge he possesses and the content he receives from the of atmospheric sciences	[SK3] text preparation/written work

Subject contents

A.1 Introduction. Sea-atmosphere interaction. The boundary layer of the atmosphere.
A.2 Stability of the atmosphere over the ocean. Fog and stratus generated by dynamic processes.
A.3. Meteorology of the coastal zone. Specifics of ocean-atmosphere interactions in the coastal zone.
A.4. Meteorology and oceanography of ocean front zones. North Wall Effects (NWE).
A.5. Large-scale atmospheric circulation. Teleconnection patterns. Relationship of ocean circulation to atmospheric circulation.
A.6. Sea ice and its role in ocean-atmosphere interactions. Atmospheric processes over bodies of water covered by sea ice.
A.7. Basics of numerical weather prediction and use of atmospheric model results in oceanography.

Prerequisites and co-requisites

Knowledge of the basic physical processes and phenomena occurring in the Earth's atmosphere.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
obtaining a passing grade in the written exam	51.0%	100.0%

Recommended reading

Basic literature	Herman, A., 2006, Podstawy meteorologii. Skrypt do ćwiczeń z przedmiotu "Meteorologia morska", Wyd. UG.
Supplementary literature	Trzeciak, S., 2009, Meteorologia morska z oceanografią, PWN, 280 s. Moran, J.M., Morgan, M.D., Pauley, P.M., 1996, Meteorology: the atmosphere and the science of weather, Prentice Hall, 530s. Materiały edukacyjne MetEd (https://www.meted.ucar.edu/).
eResources addresses	

Example issues/ example questions/ tasks being completed

Work placement

Not applicable

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