University of Gdańsk

Subject card

Subject name and code	Meteorology and Climatology - lecture, PG_00186915						
Field of study	Water Management and Protection of Water Resources						
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 practical vocational preparation			
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	2.0			
Learning profile	practical		Assessment form	exam			
Conducting unit	Climate Research Laboratory -> Department of Physical Oceanography and Climate Research -> 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	30.0	0.0	0.0	0.0	0.0	30
	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	30		1.0		19.0	50
Subject objectives	To acquire basic knowledge of the atmosphere and the processes taking place in it. To recognize and interpret meteorological phenomena and processes in connection with the state of the natural environment. To determine the impact of weather conditions on the geographical environment, economy and human health. Acquire basic knowledge of the causes and consequences of modern global climate change.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[GWOZWL3-W08] advanced knowledge and understanding of the key concepts and issues within their field of study in foreign language.	Knows and is able to use basic concepts related to the field of study in English.	[SW1] oral statement/ conversation/discussion [SW3] text preparation/written work
[GWOZWL3-W02] the importance of advanced knowledge in the sciences allowing to understand the processes and phenomena occurring in the hydrosphere, as well as knowledge of the social sciences and of the Earth's geographic environment - as a system of interrelated and interacting components.	Student knows and understands the importance of knowledge of meteorology and climatology allowing to understand the processes and phenomena occurring in the atmosphere, as well as as well as knowledge of the social sciences and the geographical environment of the Earth - as a system of interrelated and interacting components.	[SW4] test/exam - oral or written
[GWOZWL3-W01] in advanced basic biological, physical and chemical processes and phenomena, as well as analyzes their mutual relations and course in relation to natural environment and socio-ecological systems.	Student knows and understands to an advanced degree the basic meteorological and climatological processes and phenomena, as well as analyzes their interrelationships and their course in relation to the natural environment and social-ecological systems. ecological.	[SW4] test/exam - oral or written
[GWOZWL3-U07] use literature and other available sources of information, including information technology, multimedia, Internet, databases, and select and critically evaluate information.	Student is able to use literature and other available sources of information, including including information technology, multimedia, Internet resources, databases, and to select and critically evaluate information in the field of meteorology and climatology.	[SU4] test/exam - oral or written

Subject contents

1. Subject of study of meteorology and climatology.
2. Atmosphere (structure and properties, vertical structure, anthropogenic changes in air composition).
3. Radiation of the Sun, Earth and atmosphere.
4. Heat balance of the Earth's surface.
5. water in the atmosphere.
6. adiabatic transformations.
7. Circulation of the atmosphere.
8. synoptic meteorology.
9. selected issues in climatology: Climatogenic processes and factors. Features of local climate. Zonality and astro-zonality of climate. Teleconnection systems. Classifications of climates. Features of the climate of Poland. Changes in the climate of the Earth. Contemporary change of the Earth's climate, its causes and consequences.

Prerequisites and co-requisites

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Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
obtaining of a passing grade in the written exam in accordance with the UG Academic Regulations.	51.0%	100.0%

Recommended reading

Basic literature	A.1. used during classes - Kożuchowski K. (ed.), 2005, Meteorology and climatology, PWN, Warsaw - Kożuchowski K., 2011, Klimat Polski, PWN, Warszawa - Woś A., 2001, Meteorology for geographers, PWN, Warsaw. A.2. studied independently by the student: - Popkiewicz M., Kardaś A., Malinowski S., 2018, Science of climate. Post Factum Publishing - Rettalack B.J., 1991, Fundamentals of meteorology, IMGW, Warsaw. - Woś A., 1999, Klimat Polski, PWN, Warsaw.
Supplementary literature	- Bednorz E. (red.), 2023, Atlas klimatu Polski (1991-2020). Wyd. Bogucki. - Lorenc H., 2005, Atlas klimatu Polski, IMGW, Warszawa. - Niedźwiedź T. (red.), 2003, Słownik Meteorologiczny, IMGW, Warszawa. - Ustrnul Z., Czekierda D., 2009, Atlas ekstremalnych zjawisk meteorologicznych oraz sytuacji synoptycznych w Polsce, IMGW. - Ustrnul Z. (red.), 2014, Atlas zagrożeń meteorologicznych Polski, IMGW-PIB.
eResources addresses	

Example issues/ example questions/ tasks being completed

1. Vertical structure of the atmosphere.
2. Practical interpretation of radiation laws.
3. How to read a synoptic map?

Work placement

Not applicable

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