

Subject card

Subject name and code	Meteorology and climatology - lecture, PG_00119855						
Field of study	Geography						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study 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		3.0		
Learning profile	academic		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		dr Janusz Filipiak				
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		7.0		38.0	75
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. This subject prepares the student to independently analyze basic problems in atmospheric science.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[GEOGRL3-U02] formulate and analyze basic problems concerning changes in physical and geographic conditions and the social, economic and political situation in local, regional and global scales	Student is able to formulate and analyze the basic problems of atmospheric change at local, regional and global scales.	[SU4] test/exam - oral or written
	[GEOGRL3-W02] key concepts in geography and theories on spatial variation and distribution of processes and phenomena on the Earth's surface	Student knows and understands key concepts in meteorology and climatology, as well as theories of spatial variation and distribution of meteorological and climatic processes and phenomena on the Earth's surface.	[SW4] test/exam - oral or written
	[GEOGRL3-W03] in an advanced degree the processes and phenomena occurring in the natural environment of the Earth, with particular emphasis on the processes and phenomena occurring on the territory of Poland, especially the Coastal and South Baltic Lake Districts	Student knows and understands to an advanced degree the meteorological and climatic processes and phenomena occurring in the Earth's natural environment, with particular emphasis on such processes and phenomena occurring in Poland and especially in the Coastal and South Baltic Lake Districts.	[SW4] test/exam - oral or written
	[GEOGRL3-K02] bear full responsibility for the actions taken and adhere to the principles of professional ethics and principles of intellectual honesty, is aware of the importance of a professional approach in professional life	Student is ready to take full responsibility for the actions taken in relation to the problems of weather and climate impacts, as well as adhere to the principles of professional ethics and intellectual honesty, and is aware of the importance of a professional approach in professional life.	[SK1] oral statement/conversation/discussion
	[GEOGRL3-U01] identify and analyze basic natural and socio-economic processes and phenomena and analyze their causes and course	Student is able to identify and analyze basic meteorological and climatic processes and phenomena and analyze their causes and course.	[SU4] test/exam - oral or written
	[GEOGRL3-U08] use scientific language and express themselves and discuss topics concerning geographic issues in Polish and in a foreign language	Student is able to use scientific language and speak and discuss topics on issues in meteorology and climatology.	[SU1] oral statement/conversation/discussion [SU4] test/exam - oral or written
	[GEOGRL3-W05] Has advanced knowledge of the environment Earth's geographic environment, understood as a unified system of interrelated and interacting each other's components; its diversity, functioning and dynamics of change, including the mutual interaction of environmental components in the area of South Baltic Coastal and Lake Districts	Student has advanced knowledge of the geographical environment of the Earth, understood as a unified system of interrelated and interacting components with particular emphasis on the atmosphere; its diversity, functioning and dynamics of change, including the interaction of environmental components in the area of the Coastal and South Baltic Lakes.	[SW4] 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	-		
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		
Work placement	Not applicable	

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