University of Gdańsk

Subject card

Subject name and code	Meteorology and climatology, PG_00103628		
Field of study	Environmental Protection		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025
Education level	undergraduate studies	Subject group	Obligatory subject group 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 Polish
Semester of study	2	ECTS credits	2.0
Learning profile	academic	Assessment form	
Conducting unit	Pracownia Badań Klimatu -> Katedra Oceanografii Fizycznej i Badań Klimatu -> Faculty of Oceanography and Geography		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Mirosława Malinowska	
	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	2.0	33.0	50

Subject objectives

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. Identify the impact of weather conditions on the geographical environment, economy and human health.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[OŚL3_W01] Discusses the basic concepts of mathematics, physics, chemistry and biology. Describes physical, chemical and biological phenomena occurring in nature as well as geological, geomorphological and climatic conditions of the functioning of nature.	Knows and understands the basic concepts and terms of meteorology and climatology; Describes with understanding the basic processes and phenomena, primarily physical, occurring in the atmosphere and their implications for the problem of protecting the planet's gaseous envelope; Explains the basic physical laws governing the functioning of the atmosphere;	[SW4] test/exam - oral or written
	[OŚL3_U01] Performs tasks under supervision and independently in the field of analysis of the natural environment and the functioning of natural and man-made natural systems.	Independently analyzes the literature on atmospheric science; Researches, selects and uses the necessary basic information from the literature and other sources, including electronic sources, on the atmosphere, weather and climate; Uses applicable scientific terminology in presenting and discussing problems in atmospheric science; Is able to prepare a documented paper or multimedia presentation in Polish on a selected problem in atmospheric science;	[SU8] observation of student's independent or team work
	[OŚL3_W04] explains the meaning and indispensability of empirical data in the description and interpretation of natural phenomena and processes (occurring in the environment).	When explaining processes and phenomena occurring in the atmosphere, he uses empirical data, is able to interpret them correctly	[SW4] test/exam - oral or written
	[OŚL3_K05] Identifies the level of her/his knowledge and skills, demonstrates the need to update knowledge about the environment and its protection, demonstrates the need for continuous professional training and personal development.	Understands the need for further education; Demonstrates responsibility for team results; Implements the instructions of the supervisor; Is proactive and demonstrates punctuality in the implementation of individual and team activities; Poses questions and completes tasks to deepen knowledge of atmospheric science.	[SK8] observation of student's independent or team work
	[OŚL3_U08] Correctly concludes based on the available data from various sources.	Applies basic research techniques and tools, especially statistical techniques, used in meteorology and climatology;	[SU4] test/exam - oral or written
	[OŚL3_W07] Explains the causal relationship between the content of specific pollutants and the state of the environment (including human health) and the occurrence of adverse phenomena on a local, regional and global scale.	Has a basic understanding of the interrelationships between the elements of the Earth's natural environment, taking into account the role of the atmosphere in it; Predicts potential threats to the functioning of the atmosphere and climate change resulting from the development of civilization, especially strong emissions of greenhouse gases. Observes and describes changes in the global and regional climate and is able to provide a simple projection of their further direction.	[SW4] test/exam - oral or written

<table>
<tr><td>Subject contents</td><td>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. Selected issues in climatology (climatogenic processes and factors, features of local climate, zonality and astrophenomenon of climate, features of the climate of Poland, global climate change).</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Basic knowledge about atmosphere from geography, about ideal gases physics on the level of secondary school</td></tr>
<tr><td>Assessment methods and criteria</td><td><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>written assessment</td><td>51.0%</td><td>90.0%</td></tr><tr><td>activity during lectures</td><td>51.0%</td><td>10.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>Kozuchowski K., 1998 Atmosphere, climate, ecoclimate. PWN Scientific Publishers.Kozuchowski K. (ed), 2005, Meteorology and Climatology, PWN.Popkiewicz M., Kardaś A., Malinowski M., 2018, The science of climate, Post Factum, Sonia Draga Publishing, Unobvious Publishing.Woś A., 2000, Meteorology for geographers. PWN Scientific Publishers.</td></tr><tr><td>Supplementary literature</td><td>Falarz M., (ed), 2021 Climate change in Poland. Past, present, future, Springer.

Kozuchowski K., 2011, Climate of Poland. A new look, PWNLorenc H. (ed), 2005, Atlas of the climate of Poland, IMGW.Martyn D., 2000, Climates of the globe, PWNBear T. (ed.), 2003 Dictionary of meteorology. PWN.Schoenwiese Ch-D., 1997 Climate and man. Proszynski i S-ka.Ustrnul Z., Czekierda D., 2009, Atlas of extreme meteorological phenomena and synoptic situations in Poland, IMGW.</td></tr><tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:</td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>Explain the mechanism of the greenhouse effectDiscuss the components of the radiation balance of the Earth-atmosphere systemsDescribe the model of the general circulation of the atmosphere</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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