

**Subject card**

<b>Subject name and code</b>	Meteorology and climatology, PG_00103629						
<b>Field of study</b>	Environmental Protection						
<b>Date of commencement of studies</b>	October 2024	<b>Academic year of realisation of subject</b>			2024/2025		
<b>Education level</b>	undergraduate studies	<b>Subject group</b>			Obligatory subject group in the field of study		
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>			at the university		
<b>Year of study</b>	1	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	2	<b>ECTS credits</b>			2.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>					
<b>Conducting unit</b>	Pracownia Badań Klimatu -> Katedra Oceanografii Fizycznej i Badań Klimatu -> Faculty of Oceanography and Geography						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr Mirosława Malinowska				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	0.0	30.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
	Additional information: online classes - if necessary						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	<b>Number of study hours</b>	30		5.0		15.0	50
<b>Subject objectives</b>	Learning the basic sources of information in meteorology and climatology. Learning the main principles and purposes of meteorological observations and measurements. Ability to prepare meteorological data and analyze the results.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[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.	Student follows the supervisor's orders, student is active and punctuates individual and team activities; The student demonstrates responsibility for the results of the team's work	[SK1] oral statement/conversation/discussion [SK3] text preparation/written work [SK8] observation of student's independent or team work
	[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.	Student identifies and predicts potential threats to the functioning of the atmosphere and climate change resulting from the development of civilization and their consequences in the environment and human activity	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion [SW2] presentation/project/paper/report [SW5] implementation of a problem task
	[OŚL3_U08] Correctly concludes based on the available data from various sources.	Student applies basic research techniques and tools, especially statistical techniques used in meteorology and climatology;	[SU2] presentation/project/paper/report [SU3] text preparation/written work [SU4] test/exam - oral or written [SU5] implementation of a problem task
	[OŚL3_W04] explains the meaning and indispensability of empirical data in the description and interpretation of natural phenomena and processes (occurring in the environment).	Student knows and understands the principles of making basic meteorological measurements and observations, and knows the basic sources of meteorological information	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion [SW2] presentation/project/paper/report
	[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.	The student searches for, selects and uses the necessary basic information from professional literature and other sources, including electronic ones, about the atmosphere, weather and climate. Student prepare a documented study or multimedia presentation in Polish on a selected problem in the field of atmospheric sciences	[SU2] presentation/project/paper/report [SU3] text preparation/written work [SU4] test/exam - oral or written [SU5] implementation of a problem task [SU8] observation of student's independent or team work
	[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.	Student knows and understands the basic concepts and terms used in meteorology and climatology; Student knows and understands the basic processes and phenomena that shape weather and climate and their impact on elements of the Earth's natural environment	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion [SW2] presentation/project/paper/report [SW5] implementation of a problem task
Subject contents	<p>Organization of a meteorological observation network in Poland and around the world</p> <p>Basic data sources in meteorology and climatology</p> <p>Meteorological elements basic information about the observation methodology</p> <p>Basic statistical and graphic methods of climatological studies.</p>		
Prerequisites and co-requisites	<p>Basic information about the atmosphere from geography and physics lessons in the secondary school level.</p> <p>Basics of mathematics in the secondary school level</p>		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	timeliness, completeness and substantive correctness of completed assignment works	100.0%	10.0%
	written test	51.0%	90.0%

Recommended reading	Basic literature	Kożuchowski K. (ed.), 2012, Meteorology and Climatology, PWN, Warsaw  Niedźwiedz T. (ed.), 2003 Meteorological dictionary, IMGW Warsaw  Tomczyk A, Bednorz E (eds.) 2022 The Polish Climate Atlas 1991-2020, Bogucki Scientific Publisher
	Supplementary literature	Woś A., 1999. Polish climate. PWN, Warsaw  Ustrnul Z., Czekierda D., 2009, Atlas of extreme meteorological phenomena and synoptic situations in Poland, IMWM
	eResources addresses	Podstawowe <a href="http://meteo.imgw.pl/">http://meteo.imgw.pl/</a> - Institute of Meteorology and Water Management <a href="https://cloudatlas.wmo.int/en/home.html">https://cloudatlas.wmo.int/en/home.html</a> - International Cloud Atlas WMO <a href="https://www.temis.nl/">https://www.temis.nl/</a> - Tropospheric Emission Monitoring Internet Service Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	List the types of basic stations of the measurement and observation network in Poland  Discuss the UVI values based on the given data  List high clouds genera  Discuss the importance of meteorological factors affecting the spread of pollutants in the atmosphere	
Work placement	Not applicable	

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