GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00070463		
Field of study	Geodesy and Cartography		
Date of commencement of studies	February 2025	Academic year of realisation of subject	2025/2026
Education level	second-cycle studies	Subject group	
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	3	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Geotechnical and Hydraulic Engineering -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Patrycja Mikos-Studnicka	
	Teachers	dr inż. Patrycja Mikos-Studnicka	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	10.0	0.0	0.0	0.0	40

E-learning hours included: 0.0

eNauczanie source address: https://enauczanie.pg.edu.pl/2025/course/view.php?id=4464

Moodle ID: 4464 Zmiany klimatu i zjawiska ekstremalne- Specjalność: Fotogrametria i teledetekcja (WILiŚ), II stopnia, stacjonarne, 2025/2026
https://enauczanie.pg.edu.pl/2025/course/view.php?id=4464

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	40	0.0	0.0	40

Subject objectives

The "Climate Change and Extreme Events" course is a comprehensive introduction to the climate crisis and its direct impact on the environment and economy. Its goal is to acquire a basic understanding of climate and climate change. Identify the meteorological processes and factors influencing climate and climate change. Identify the interplay between urbanization and climate change, and between the environment and climate change. Gain insight into ways to adapt to climate change.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W101] is able to make an in-depth identification of key objects and phenomena related to the field of study, as well as theories that describe them and applicable analytical and design methods	The student is able to use climate databases and interpret analyzed data. Understands how climate information is presented.	[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects
[K7_U06] creates solutions to complex and unstructured problems taking into account the variability of the environment by synthesising information from different sources, using analytical and simulation methods	Can use analytical methods (data processing, trend analysis) to assess the impact of climate change on human life, the economy, and the environment.	[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools
[K7_K101] acknowledges the importance of knowledge related to the field of study in solving cognitive and practical problems, critically assessing the information obtained	The student is able to independently verify information about climate change, analyze the causes and effects of, for example, the greenhouse effect, and take conscious pro-ecological actions based on reliable sources of information.	[SK5] Assessment of ability to solve problems that arise in practice

<table>
<tr><td>Subject contents</td><td>Course content – lecture
Lectures cover topics such as: the basics of the climate system, extreme climate phenomena, climate change indicators, the concept of drought, the concept of floods, climate scenarios and models, the carbon cycle and the greenhouse effect, adaptation to climate change, runoff from urban areas, the state and trends of the natural environment in Europe, and climate change mitigation.
Course content – exercises
The exercises provide a substantive link to the lectures and cover topics such as: the basics of the climate system, climate change indicators, the concept of floods, climate scenarios and models, the carbon cycle and the greenhouse effect, adaptation to climate change, runoff from urbanized catchments, the state and trends of the natural environment in Europe, and climate change mitigation.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Basic knowledge of geography and physics at secondary school level</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>Final test,passed tutorial</td><td>60.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>Henry K. H. Wang Roadmap for Sustainable Business and Net Zero Carbon Emission</td></tr><tr><td>Supplementary literature</td><td>Harvey.H, Designing Climate Solutions</td></tr><tr><td>eResources addresses</td><td></td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>Time series trend analysis for climate data. Adaptation matrix. Runoff from an urbanized catchment under extreme precipitation conditions.</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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