University of Gdańsk

Subject card

Subject name and code	Climate change, PG_00140223		
Field of study	History		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2025/2026
Education level	Bachelor's studies	Subject group	
Mode of study	full-time studies	Mode of delivery	e-learning
Year of study	1	Language of instruction	English polish
Semester of study	2	ECTS credits	2.0
Learning profile	academic	Assessment form	credit
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 Mirosława Malinowska	
	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: 30.0

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	2.0	18.0	50

Subject objectives

The aim of this course is to acquaint students at the primary level with the basics of functioning of the Earth's climate system, the causes of contemporary climate change, spatial diversity and trends in climate change in different regions of the world, the consequences of climate change and methods of climate change prevention and adaptation.

Learning outcomes

Course outcome	Subject outcome	Method of verification
	- Knows key concepts and theories about contemporary climate change - knows the spatial variation of contemporary observed climate change; - can characterize the consequences of contemporary climate change - evaluates methods of adaptation to climate change and its mitigation	[SU1] oral statement/conversation/ discussion [SK4] test/exam - oral or written

Subject contents	1. The atmospheric system and energy balance; 2. Climate change in the past 3. The enhanced greenhouse effect 4. Contemporary climate change 5. Water stored in ice and oceans, and chnging sea levels 6. Carbon stored in ice, oceans and biosphere 7. Extreme weather events. 8. Spatial changes in bioms, habitats and animal migration 9. Impacts of climate change on humans 10. Climate change risk and vulnerability 11. Government-led adaptation and mitigation 12. Carbon emissions trading and geoengineering 13. Civil society and corporate strategies to mitigate climate change 14. The most common myths about climate change 15. Symptoms of climate change in Poland
Prerequisites and co-requisites	English level B2

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
activity during lecture	51.0%	40.0%
test	51.0%	60.0%

Recommended reading

Basic literature

Popkiewicz M., Kardaś A., Malinowski S., 2019, Climate science. Sonia Draga Publishing House and Nieoczywiste Publishing House, Warsaw.

IPCC, 2018, Special Report on Global Warming of 1.5°C. Summary for Policymakers. IPCC, Geneva, Switzerland.

IPCC, 2019, Special Report on Climate Change and Land. Summary for Policymakers. IPCC, Geneva, Switzerland.

IPCC, 2019, Special Report on Oceans and Cryosphere. Summary for Policymakers. IPCC, Geneva, Switzerland.

IPCC, 2021-2022, Climate Change: Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Summarioes for Policymakers. IPCC, Geneva, Switzerland

	Supplementary literature	4°C Turn Down the Heat, 2012, A Report for the World Bank by the Potsdam Institute for Climate Impact Research and Climate Analytics, Potsdam. Alcamo J., Olesen J.E., 2012, Life in Europe Under Climate Change. Wiley. IPCC, 2012, Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. Special Report of the IPCC Technical Summary. Cambridge University Press. IPCC, 2012, Renewable Energy Sources and Climate Change Mitigation. Special Report of the IPCC Technical Summary. Cambridge University Press. Filipiak J., Malinowska M., 2013, International climate negotiations - objectives, process, tools. The role of Poland and the European Union in the global dialogue [in:] Kuczewska J., Stefaniak-Kopoboru J., Krzeminski M. Economic challenges of today, FRUG, Sopot, 137-151. Masselink G., Gehrels R., 2014. Coastal Environment & Global Change. Wiley. Rogelj J., McCollum D.L., Reisinger A., Meinshausen M., Riahi K., 2013, Probabilistic cost estimates for climate change mitigation. Nature 493(7430): 79-83.
	eResources addresses	Basic https://www.ipcc.ch/sr15/chapter/spm/ - IPCC, 2018, Special Report on Global Warming of 1.5°C. Summary for Policymakers. IPCC, Geneva, Switzerland: Special Report from 2018 on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. The report presents the key findings, based on the assessment of the available scientific, technical and socio-economic literature https://www.ipcc.ch/site/assets/uploads/sites/4/2019/12/02_Summary-for-Policymakers_SPM.pdf - IPCC, 2019, Special Report on Climate Change and Land. Summary for Policymakers. IPCC, Geneva, Switzerland. This report addresses greenhouse gas (GHG) fluxes in land-based ecosystems, land use and sustainable land management4 in relation to climate change adaptation and mitigation, desertification, 5 land degradation6 and food security.7 https://naukaoklimacie.pl/start - Climate Science Portal, where you can find reliable information about the Earth's climate system, its modern change, facts and myths about modern climate change https://link.springer.com/book/10.1007/978-3-030-70328-8?page=2#toc - Falarz M., (ed.) Climate Change in Poland. Past, Present, Future, Springer, 2021. A description of climate change observed in Poland in the past centuries, today and projected pzryszszły climate change. https://www.ipcc.ch/srocc/cite-report/ - IPCC, 2019: IPCC Special Report on the Ocean and Cryosphere in a Changing Climate: report describes the observed changes in the extent of ice on earth and the impact of these changes, triggered by climate change, on ecosystems and humans
Example issues/ example questions/ tasks being completed	1. Explain what the natural and anthropogenic greenhouse effects are.2. Describe the observed trends of climate change3. Give examples of the effects of climate change on components of the environment other than the atmosphere4. Explain the differences between climate change adaptation and mitigation.	
Work placement	Not applicable	

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