



Subject card

Subject name and code	How to Save the Future? Humanity in the Age of Climate Crisis, PG_00072983						
Field of study	Technical Physics						
Date of commencement of studies	February 2026		Academic year of realisation of subject		2026/2027		
Education level	second-cycle studies		Subject group				
Mode of study	Full-time studies		Mode of delivery		e-learning		
Year of study	1		Language of instruction		Polish		
Semester of study	2		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Energy Conversion and Storage -> Faculty of Chemistry -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Anna Dettlaff				
	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 the course is to present climate change within a broad humanistic context—not only as a physical process, but also as a cultural, ethical, and psychological phenomenon. Students will learn about the scientific foundations of climate change, but above all, they will be encouraged to reflect on humanity’s place in nature, the role of scientific knowledge in society, and the moral and political consequences of global warming.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_W71] has general knowledge in humanistic, social, economic or legal sciences, including their fundamentals and applications		The student understands the mechanisms underlying the climate crisis, feedback loops within the climate system, and the impact of human activity on the environment and society.		[SW1] Assessment of factual knowledge		
	[K7_U71] is able to apply knowledge from humanistic, social, economic or legal sciences in order to solve problems		The student is able to analyse selected strategies for mitigating the impacts of the climate crisis, taking into account environmental, social, economic, and ethical factors. They can critically evaluate available sources of information on climate change and use them to formulate their own conclusions and proposals for action.		[SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools		
	[K7_K71] is able to explain the need to apply knowledge from humanistic, social, economic or legal sciences in order to function in a social environment		The student is able to explain the importance of an interdisciplinary approach to the climate crisis and identify the role of the social sciences and economics in designing climate adaptation and mitigation measures.		[SK5] Assessment of ability to solve problems that arise in practice		

Subject contents	Course content – lecture 1. What Is the Greenhouse Effect? An introduction to the concept of the greenhouse effect and its scientific significance. 2. How Do We Know the Climate Is Changing? Science as a Way of Understanding the World An overview of the methods used to observe and measure climate change and the role of science in society. How does scientific knowledge differ from opinions and beliefs? Trust in science in the age of misinformation. 3. The History of the Climate An overview of how the climate has evolved in the past. 4. Humans as a Driver of Climate Change An analysis of the natural and anthropogenic causes of climate change. How do our economic, technological, and social decisions affect the Earth system? The ethics of responsibility in an interconnected world. 5. The Climate System: Learning to Understand Its Complexity An analysis of the interactions and feedback loops between the atmosphere, hydrosphere, lithosphere, and biosphere. Which processes maintain climate stability, and which contribute to its destabilisation? 6. A Changing Climate, a Changing Life The consequences of climate change for the environment and humanity, including biodiversity loss, climate migration, and social inequalities. What does biodiversity mean from a humanistic perspective—as a value, an experience, and a form of heritage? 7. Models of the Future: Science and Politics How do climate models work, and what are IPCC reports? Is predicting the future a scientific endeavour? A discussion of responsibility in communicating climate risks and the limits of scientific knowledge. 8. The Climate Crisis as a Crisis of Meaning The psychological, social, and political dimensions of the climate crisis: anxiety, guilt, helplessness, and hope. The climate as a common good and a challenge for humanity. Is a new form of humanism possible in an era of climate change? 9. Climate Change Mitigation: From Knowledge to Action		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Assessment - test	50.0%	100.0%

Recommended reading	Basic literature	M. Budziszewska, A. Kardaś, Z. Bohdanowicz, Klimatyczne ABC. Interdyscyplinarne podstawy współczesnej wiedzy o zmianie klimatu, Wydawnictwa Uniwersytetu Warszawskiego, 2021 Energetyka i ochrona środowiska. Generowanie i magazynowanie energii. Odpady energetyczne. Analiza cyklu życia, Wydawnictwo Naukowe PWN, 2023
	Supplementary literature	Popkiewicz M., Kardaś A., Malinowski S., Nauka o Klimacie, Wydawnictwo Nieoczywiste, 2019
	eResources addresses	Supplementary https://naukaoklimacie.pl/ - website about the climate changes
Example issues/ example questions/ tasks being completed	List and explain the barriers to pro-environmental behaviour. List the anthropogenic causes of the enhanced greenhouse effect. What does climate change mitigation involve? What social consequences of climate change can you identify?	
Practical activities within the subject	Not applicable	

Document generated electronically. Does not require a seal or signature.