University of Gdańsk

Subject card

Subject name and code	Climate Changes, PG_00118905		
Field of study	Economics, International Economic Relations		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2025/2026
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Optional subject group
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	English
Semester of study	6	ECTS credits	5.0
Learning profile	academic	Assessment form	credit
Conducting unit			
Name and surname of lecturer (lecturers)	Subject supervisor	dr Maria Matusiewicz	
	Teachers	dr Maria Matusiewicz	

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: 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	30	0.0	0.0	30

Subject objectives

Understanding the nature and significance of climate change, its economic impact on local and global economies, and the evaluation of climate policies and sustainable development strategies.

This course aims to equip students with the knowledge to analyze the costs and benefits of climate action, as well as the tools to assess the risks and opportunities associated with the transition to a low-carbon economy

General objectives:
1. Understanding the impact of individual economic sectors on climate change.
2. Analyzing dilemmas and trade-offs in climate policy.
3. Assessing the effectiveness of low-emission and adaptation solutions.
4. Discussing individual and collective choices in the context of climate justice.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[EKONL3_K03] participates in the preparation of economic and social projects, being able to reconcile legal, economic, ecological, political and social requirements	The student has in-depth knowledge of the impact of climate change on economic and social systems and knows the legal, economic and ecological mechanisms supporting sustainable development. The student is able to analyze and evaluate climate policies and design solutions for adaptation and mitigation of the effects of climate change, taking into account social, economic and environmental conditions. The student is able to cooperate in the development of economic and social projects related to climate change, reconciling various requirements: legal, economic, ecological, political and social, and demonstrates readiness to act for the common good in the context of climate transformation.	[SK1] oral statement/conversation/ discussion [SK2] presentation/project/paper/ report [SK4] test/exam - oral or written [SK8] observation of student's independent or team work
[EKONL3_U04] can predict and forecast the course of economic and social processes and phenomena	The student knows methods for analyzing and forecasting economic and social processes in the context of climate change and their potential impacts on various sectors of the economy. The student is able to anticipate directions of economic and social change related to climate phenomena and to develop forecasts regarding the effects of climate policies and adaptation strategies. The student is prepared to take action based on forecasts and analysis of climate trends and their impact on the socio-economic environment, with respect for the principles of sustainable development.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
[EKONL3_W01] has advanced knowledge of the nature of social sciences, their place in the system of sciences, knows the role of economic sciences in this system and uses universal economic terminology	The student has advanced knowledge in the field of social sciences and understands the role of economic sciences in analyzing climate change issues; is familiar with and applies economic terminology in the context of sustainable development, climate policy, and low-emission economy. The student is able to use universal economic terminology to describe and interpret phenomena related to climate change and its impact on the economy and society. The student is prepared to apply knowledge from social and economic sciences in public and professional discourse on climate change and its socio-economic consequences.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report

Course outcome	Subject outcome	Method of verification
[EKONL3_K05] correctly identifies, diagnoses and resolves professional dilemmas and different options for solutions	The student is familiar with typical professional and social dilemmas arising from the need to consider climate and environmental aspects in economic and managerial activities. The student is able to analyze various solution options for professional problems related to the impact of economic activity on the climate and to identify rational, ethical, and sustainable courses of action. The student is prepared to identify, diagnose, and responsibly resolve professional dilemmas related to environmental and climate issues, taking into account their social and economic implications.	[SK1] oral statement/conversation/ discussion [SK2] presentation/project/paper/ report [SK4] test/exam - oral or written [SK8] observation of student's independent or team work
[EKONL3_U06] uses the knowledge acquired in economics, finance and management to solve economic and social dilemmas arising in the professional context	The student knows economic, financial, and managerial mechanisms related to climate change and their impact on economic and social decision-making. The student is able to apply knowledge of economics, finance, and management to analyze and resolve dilemmas related to climate change in the context of business activity, public policy, and social responsibility. The student is prepared to make responsible professional decisions in situations involving economic and social dilemmas arising from climate challenges, taking into account the common good and the principles of sustainable development.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
[EKONL3_K06] is willing to be guided in his professional life by business ethics and corporate social responsibility, to respect others and to be loyal to his employer	The student knows the fundamental principles of business ethics and the concept of corporate social responsibility (CSR) in the context of counteracting climate change and conducting sustainable business activities. The student is able to identify and analyze the ethical and social aspects of business decisions related to the environment and climate, taking into account the interests of various stakeholder groups. The student is prepared to be guided in professional life by the principles of business ethics, corporate social responsibility, and respect for the natural environment and the public interest in the face of climate challenges.	[SK1] oral statement/conversation/ discussion [SK2] presentation/project/paper/ report [SK4] test/exam - oral or written [SK8] observation of student's independent or team work

Course outcome	Subject outcome	Method of verification
[EKONL3_U01] can correctly interpret economic and social phenomena and apply knowledge of economics, finance and management sciences to explain economic phenomena	The student knows the basic concepts, theories, and interdependencies related to climate change, its causes, and its economic and social consequences. The student is able to correctly interpret economic and social phenomena resulting from climate change and to apply knowledge from economics, finance, and management to analyze its impacts and design adaptation and mitigation strategies. The student is prepared to undertake responsible actions for sustainable development and to collaborate in interdisciplinary teams analyzing and counteracting the effects of climate change.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
[EKONL3_U03] is able to analyse the causes and course of specific economic and social processes and phenomena, and accurately analyse these phenomena using adequate methods and tools economic and social	The student knows the main causes, mechanisms and effects of climate change in the socio-economic context and understands the relationships between climate policy and the functioning of economic entities and public institutions. The student is able to analyze the causes and course of social and economic processes related to climate change and accurately interpret these phenomena, using adequate methods and tools of economic and social analysis (e.g. cost-benefit analysis, scenario modeling, sustainable development indicators). The student understands the complexity of climate phenomena in the socio-economic context and is ready for critical reflection and responsible action when analyzing and designing transformation solutions.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU3] text preparation/written work [SU8] observation of student's independent or team work
[EKONL3_W07] has knowledge of the basic economic and financial principles of the functioning and management of economic entities and organisations as well as the legal, organisational, moral and ethical norms and rules governing the functioning of public institutions	The student has knowledge of the economic and financial principles of the functioning of economic entities and public organizations in the context of combating climate change. Knows the applicable legal regulations, institutional frameworks and moral and ethical norms regarding environmental and social responsibility. The student is able to analyze the strategies and management models used by enterprises and public institutions in response to climate challenges, taking into account economic, legal and ethical aspects. The student understands the need for ethical and responsible action in the economic and public sector in the face of global climate threats and is ready to support initiatives consistent with the principles of sustainable development.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report

Course outcome	Subject outcome	Method of verification
[EKONL3_U13] be able to interact and work in a group (including an international one), assuming various roles within it	The student understands the importance of intersectoral and intercultural cooperation in the processes of combating climate change and knows the role of interdisciplinary teams in developing climate policies and projects. The student is able to cooperate effectively in a group, also in an international environment, taking on various roles in teamwork related to the analysis of climate problems and designing solutions in the spirit of sustainable development. The student demonstrates willingness to cooperate, openness to diverse cultural perspectives and responsibility for the common goals of the team working for the climate.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
[EKONL3_U15] is able to independently complement and improve the acquired knowledge and economic skills, is open to new ideas and techniques, tends to learn by any method and is willing to interact with other participants in the learning process	The student knows the sources of current knowledge on the economic, social and environmental aspects of climate change and understands the need for its continuous updating in a dynamically changing global context. The student is able to independently develop and supplement knowledge and skills in the field of climate economics, using various learning methods (self-education, teamwork, e-learning platforms) and actively participates in the exchange of knowledge with other participants in the educational process. The student is open to new ideas, approaches and techniques related to combating climate change and shows initiative and commitment to team activities aimed at developing knowledge and good practices in the field of sustainable development.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
[EKONL3_U08] has the ability to observe, understand and analyse economic and social phenomena and processes using appropriate scientific methods	The student has in-depth knowledge of the socio-economic effects of climate change and methods for assessing risks and costs associated with the transformation towards sustainable development. The student has the ability to observe, understand and analyse social and economic phenomena and processes resulting from climate change, using adequate scientific methods, including data analysis, economic models and environmental impact assessment tools. The student is ready to critically assess social and economic actions in the context of climate change and to participate in climate protection and just transformation activities.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written [SU8] observation of student's independent or team work

Course outcome	Subject outcome	Method of verification
[EKONL3_W03] has advanced knowledge of the relations between economic agents and social organisations operating in the national, international and intercultural arenas	The student possesses advanced knowledge of the economic consequences of climate change, particularly in the context of relationships between economic entities and social organizations operating at national, international, and intercultural levels. The student is capable of analyzing climate policies and sustainable development strategies, assessing their impact on the functioning of economic entities as well as on intersectoral and intercultural relations. The student is aware of the importance of social and economic responsibility in the context of climate change and is able to actively participate in the debate on the transition to a low-emission economy, taking into account diverse cultural and institutional perspectives.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
[MSGL3_W01] has an advanced knowledge of economic sciences, in particular of economics and its place in the system of sciences, including within related disciplines	The student has in-depth economic knowledge enabling the analysis of the causes and effects of climate change in economic systems.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
[MSGL3_W02] has an advanced knowledge and understanding of the terminology of international economic relations and complementary disciplines	The student knows and understands specialist terminology related to climate change and its links with international economic relations.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
[MSGL3_W03] has an advanced and structured knowledge of the world economy and international economic relations; understands the process of their evolution, including its causes and consequences	the student understands the evolution of the global economy in the context of the impact of climate change and environmental policies.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
[MSGL3_W06] knows and understands the relations between economic entities and public institutions functioning in the national, international and intercultural realms	The student knows the relationships between economic entities and public institutions in the context of global climate challenges.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
[MSGL3_W08] knows and understands the fundamental dilemmas of contemporary civilisation, including the strategy of sustainable development and corporate social responsibility	The student understands the civilization dilemmas resulting from climate change and knows the concepts of sustainable development and corporate responsibility.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
[MSGL3_W09] has knowledge about a human being as an individual making economic decisions, acting within social structures and organisational units (in particular enterprises) or conducting individual economic activity	The student knows the economic and social determinants of decisions made by individuals in the face of climate challenges.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
[MSGL3_W12] has a well-organised knowledge of the nature, functioning and sources of changes occurring in the structures of economic entities and organisations (in particular those which operate on the international market); understands the causes, course, scale and consequences of these changes	The student has knowledge of the mechanisms of adaptation and transformation of economic entities in response to climate change.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
[MSGL3_U01] can correctly interpret and explain economic and social phenomena, analyse their causes, course and connections between these phenomena using the acquired knowledge of economics, finance and international economic relations	The student is able to analyse economic and social phenomena related to climate change and their mutual dependencies.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written

Course outcome	Subject outcome	Method of verification
[MSGL3_U02] can assess economic and social phenomena occurring in an open economy, interpret necessary statistical data and economic indicators, as well as forecast economic phenomena and processes, using standard methods and tools applied in economic sciences	The student is able to interpret climate and environmental data and forecast their impact on the economy on a global scale.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written
[MSGL3_U03] can identify and analyse relations between economic entities and public institutions in the national and international environment; using the acquired theoretical knowledge can critically evaluate these relations and indicate directions for their further development or changes	The student analyzes the links between economic and institutional actors involved in climate action and indicates possible directions for the development of climate policies.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written
[MSGL3_U06] can identify selected risks related to international operations of enterprises and assess their consequences correctly	The student identifies climate risks for the international operations of enterprises and assesses their economic consequences.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written
[MSGL3_U16] can plan and implement his/her own lifelong learning, expand and improve his/her acquired knowledge and economic skills; is open to new ideas and techniques; is willing to learn using any method, and has a tendency to interact with other participants of the learning process	The student independently deepens his/her knowledge of climate change and its effects, demonstrating openness to an interdisciplinary approach and new analytical tools.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written
[MSGL3_K06] is ready to be guided in his/her professional life by business ethics and corporate social responsibility, to respect others and to be loyal to his/her employer	The student is guided by the principles of ethics and social responsibility in climate action, respecting the needs of future generations.	[SK1] oral statement/conversation/ discussion [SK2] presentation/project/paper/ report [SK4] test/exam - oral or written
[MSGL3_K01] is ready to recognise the importance of knowledge in the field of economics in the process of identifying and solving economic problems and to consult experts in case of difficulties in solving them independently	The student recognizes the importance of economic knowledge in diagnosing and counteracting the negative effects of climate change.	[SK1] oral statement/conversation/ discussion [SK2] presentation/project/paper/ report [SK4] test/exam - oral or written
[MSGL3_U13] can prepare presentations and oral speeches on selected specific problems concerning international economic relations (in connection with the chosen speciality within International Economic Relations), using basic theoretical approaches, specialist terminology, principles of collecting data from various sources, their description and interpretation, and drawing conclusions based on scientific literature	The student prepares presentations on climate change and its impact on economies, using scientific and economic data.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written
[MSGL3_U10] can take an active part in a debate, presenting his/her own viewpoint and supporting it with argumentation based on selected theories, opinions of various authors and/or statistical data	The student presents a position in discussions on climate policy and energy transformation, based on theoretical knowledge and data.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written
[MSGL3_U09] can communicate in an international and culturally diverse environment, using the terminology of international economic relations (in connection with the chosen speciality within the field of International Economic Relations)	The student communicates effectively in a diverse international environment, using concepts related to economics and climate policy.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written

Course outcome	Subject outcome	Method of verification
[EKONL3_U09] is able to prepare written work, in Polish and in a foreign language, on specific economic and social issues, using specialist terminology, theoretical and methodological approaches, principles of collecting data from various sources, their description and interpretation, making inferences based on scientific literature and factual data, and making international comparisons	The student knows specialist terminology and selected theories and methodological approaches used in the analysis of socio-economic aspects of climate change, both nationally and internationally. The student is able to prepare written studies in Polish and English on selected issues related to climate change, using scientific literature, statistical data and international reports, using appropriate terminology, theoretical and methodological approaches and making comparisons between countries and regions. The student demonstrates responsibility in formulating conclusions and cares for the reliability and transparency of scientific communication in the context of the public debate on climate change.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written [SU8] observation of student's independent or team work

Subject contents

1. Introduction to climate change in the economic context
Science vs. economics how to interpret climate models?
The carbon budget and its division between sectors/countries.
2. Impact of key sectors on emissions
Energy: From coal to renewable energy sources costs, pace of transformation, energy security.
Agriculture and livestock: Methane emissions, deforestation, meat vs. plant-based diet.
Heavy industry (steel, cement): CCS technologies, hydrogen, decarbonization.
Transport: Electromobility, synthetic fuels, aviation (SAF).
3. Trade-offs and climate policy dilemmas
Green growth vs. degrowth is capitalism compatible with the climate?
Just transition: social costs (e.g. miners, farmers).
Emissions offshoring EU vs. rest of the world
4. Finance and innovation
Carbon pricing: carbon taxes vs. ETS systems.
Greenwashing vs. real investments (e.g. ESG funds).
The role of technology, e.g. nuclear fusion, DAC)?
5. Consumption and individual choices
Carbon footprint of the average citizen of the Global North
Does consumer boycotts make sense? (fast fashion, meat)
do everyday choices matter (recycling, transport)
Climate psychology: why are we ignoring the crisis? is climate change causing anxiety in selected generations?
6. The future: scenarios and controversies
Geoengineering
Are international agreements (e.g. COP) effective?
Net zero noble goals or corporate greenwashing?

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
participation in discussion	0.0%	10.0%
exam with open and closed questions	51.0%	50.0%
own work, project presentation OR exam in case of failure to meet the conditions: presence and/or presentation	51.0%	40.0%

Recommended reading	Basic literature	*The New Climate War*, by Michael Mann, 2021 *Supercharge Me: Net Zero Faster*, by Eric Lonergan and Corinne Sawers, 2022 *Post Growth: Life After Capitalism*, by Tim Jackson, 2021 *This Changes Everything: Capitalism Vs The Climate*, by Naomi Klein, 2014
	Supplementary literature	Current Issues: Climate Sections: The Guardian, The Washington Post
	eResources addresses	
Example issues/ example questions/ tasks being completed	• How to interpret climate models? • Is capitalism compatible with climate? • Are international agreements (e.g. COP) effective? • net zero noble goals or corporate greenwashing?	
Work placement	Not applicable	

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