



Subject card

Subject name and code	Sustainability and ESG, PG_00069940						
Field of study	Real Estate 5.0						
Date of commencement of studies	February 2026	Academic year of realisation of subject			2025/2026		
Education level	second-cycle studies	Subject group			Obligatory subject group in the field of study Humanistic-social subject group		
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	1	Language of instruction			Polish		
Semester of study	1	ECTS credits			3.0		
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	15.0	0.0	45
	E-learning hours included: 0.0						
	eNauczanie source addresses: Moodle ID: 4605 Zrównoważony rozwój i ESG 2025/26 https://enauczanie.pg.edu.pl/2025/course/view.php?id=4605						
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	45		3.0	27.0	75	
Subject objectives	<p>The aim of the course is to provide students with in-depth knowledge of the scientific foundations of climate change and its environmental, social, and organizational consequences, as well as to present sustainable development as a systemic response to contemporary climate challenges. The course seeks to explain the role of European Union climate policy and regulatory frameworks in shaping standards of responsible organizational conduct and in advancing the concept of ESG.</p> <p>An additional objective is to develop students ability to analyze climate-related and regulatory risks, to integrate principles of sustainable development and ESG criteria into decision-making processes, and to critically assess organizational practices in terms of transparency and the prevention of greenwashing. The course prepares students to participate responsibly in climate transformation processes at both organizational and systemic levels.</p>						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	<p>[K7_U05] is able to manage real estate assets throughout their entire life cycle, applying knowledge in the areas of brokerage, investment, and asset management. The student can utilize modern tools and technologies (including digital solutions, PropTech, and BIM), incorporate the principles of sustainable development, ESG, wellbeing, and green certifications, as well as conduct due diligence analyses and effectively implement investment projects.</p>	<p>The student is able to incorporate the principles of sustainable development and ESG criteria into decision-making and management processes, identify climate-related and regulatory risks, and assess their impact on organizational activities and investment projects. The student is prepared to analyze compliance with European Union regulatory requirements, prevent greenwashing, and propose solutions that enhance the long-term resilience and accountability of economic entities.</p>	<p>[SU5] Assessment of ability to present the results of task [SU1] Assessment of task fulfilment</p>
	<p>[K7_W05] possesses advanced interdisciplinary knowledge of procedures, methods, and theories related to real estate trading, property management, and operation, as well as other processes characteristic of the functioning of the real estate market. The student understands the organizational and legal conditions governing the professional practice of real estate agents, property managers, and other specialists operating within the real estate sector.</p>	<p>The student knows and understands the scientific foundations of climate change, including the greenhouse effect mechanism, the carbon cycle, feedback loops, and climate scenarios, as well as their implications for the functioning of the economy and the real estate market. The student understands the systemic concept of sustainable development, its origins, objectives, and the interrelations between the environmental, social, and economic dimensions in the context of climate transformation. The student knows and understands the regulatory foundations of climate transition and ESG in the European Union, and their impact on the real estate sector. The student also understands the importance of green building certifications, energy efficiency, and digital management tools in the operation and investment processes within the real estate sector.</p>	<p>[SW1] Assessment of factual knowledge</p>

Subject contents	Course content – lecture LECTURE <ol style="list-style-type: none"> 1. What Is the Greenhouse Effect? An Introduction to the Concept of the Greenhouse Effect and Its Scientific Significance 2. Scientific Methods for Assessing and Monitoring Climate Change 3. Natural and Anthropogenic Causes of Climate Change. The Carbon Cycle in Nature 4. Mechanisms and Feedback Loops Driving Climate Change 5. The Consequences of Climate Change for the Environment and Society 6. Climate Models and Future Climate Scenarios. The Role and Significance of IPCC Reports 7. Climate Myths and Greenwashing Climate Disinformation, Regulatory Risk, and Organizational Responsibility 8. Sustainable Development as a Systemic Response to the Climate and Environmental Crisis 9. The Pillars of ESG: Environmental (Greenhouse Gas Emissions, Waste Management, Energy Consumption, Biodiversity), Social Responsibility (Labor Rights, Working Conditions, Occupational Health and Safety), Corporate Governance 10. Tools for Measuring and Assessing Environmental Impact (Carbon Footprint, Water Footprint, Life Cycle Assessment LCA) 11. Transformation of the Economy Towards Climate Neutrality (Energy Transition, Circular Economy) 12. The Regulatory Foundations of ESG and Climate Transformation in the European Union 											
	Course content – project PROJECT <ol style="list-style-type: none"> 1. Climate Myths and Greenwashing 2. Strategic Decisions in Climate Transition Local, National, and Global Perspectives 3. Mitigation and Decarbonization Strategies in the Construction Sector 4. Sustainable Development and ESG in Real Estate Management 											
Prerequisites and co-requisites												
Assessment methods and criteria	<table border="1"> <thead> <tr> <th>Subject passing criteria</th> <th>Passing threshold</th> <th>Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td>Lecture test</td> <td>60.0%</td> <td>50.0%</td> </tr> <tr> <td>Project</td> <td>60.0%</td> <td>50.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Lecture test	60.0%	50.0%	Project	60.0%	50.0%
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Recommended reading	Basic literature	<p>M. Budziszewska, A. Kardaś, Z. Bohdanowicz, Klimatyczne ABC. Interdyscyplinarne podstawy współczesnej wiedzy o zmianie klimatu, Wydawnictwa Uniwersytetu Warszawskiego, 2021</p> <p>Energetyka i ochrona środowiska. Generowanie i magazynowanie energii. Odpady energetyczne. Analiza cyklu życia, Wydawnictwo Naukowe PWN, 2023</p>										
	Supplementary literature	<p>Popkiewicz M., Kardaś A., Malinowski S., Nauka o Klimacie, Wydawnictwo Nieoczywiste, 2019</p>										
	eResources addresses	<p>Basic</p> <p>https://www.ipcc.ch/ - The Intergovernmental Panel on Climate Change reports</p> <p>https://naukaoklimacie.pl/ - A portal providing scientific information on climate change.</p>										
Example issues/ example questions/ tasks being completed	<p>Characterize the consequences of climate change for the environment, society, and the economy.</p> <p>Explain the concept of sustainable development and discuss the relationships between its environmental, social, and economic dimensions.</p> <p>Identify examples of greenwashing and assess their potential legal and reputational consequences.</p>											

Practical activities within the subject	Not applicable
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