



Subject card

Subject name and code	Aspects of Green Transition, PG_00067264						
Field of study	Automatic Control, Cybernetics and Robotics						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2026/2027		
Education level	first-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			1.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Signals and Systems -> Faculty of Electronics Telecommunications and Informatics -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Piotr Fiertek					
	Teachers	dr inż. Piotr Fiertek					
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	0.0	15
	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	15	1.0		9.0		25
Subject objectives	<p>The aim of the subject is to introduce issues related to the need to introduce changes in the energy system, including: the depletion of energy resources and the impact of burning fossil fuels on climate change. Among other things, the concept of "Peak oil" will be introduced. Another aim is to introduce the concept of functioning of the economy without fossil fuels.</p> <p>As part of the subject, a road map leading the economy from the current state to the target state will be presented. The disadvantages, advantages and limitations of such energy sources as: wind energy, solar energy, hydroelectric power plants, biogas, nuclear power plants will be discussed.</p>						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_W11] knows and understands, to an advanced extent, the general principles of setting up and development of business entities, forms of individual entrepreneurship and running ventures and the fundamental dilemmas of modern civilization and basic economic, legal and other conditions of various types of activities related to the field of study, including the basic concepts and principles in the field of industrial property and copyright protection	During the lecture, students will learn about the impact of the energy system on the functioning of the economy and the basics of today's financial system based on exponentially growing debt will be presented.	[SW1] Assessment of factual knowledge
	[K6_K02] is ready to critically assess possessed knowledge and acknowledge the importance of knowledge in solving cognitive and practical problems	The aim of the lecture is to provide basic knowledge about the functioning of individual types of renewable energy sources and to develop a critical attitude towards disinformation and lies flooding the infosphere related to renewable energy sources and global warming.	[SK4] Assessment of communication skills, including language correctness
	[K6_K03] is ready to meet social obligations, co-organise activities for the social environment, initiate actions for the public interest, think and act in an entrepreneurial way	The lecture will present the impact of the energy system on the functioning of communities and individual units, as well as the impact of individual units on the functioning of the energy economy and, in a broader sense, the impact of individual units on the natural environment.	[SK4] Assessment of communication skills, including language correctness
	[K6_K01] is ready to cultivate and disseminate models of proper behaviour in and outside the work environment; make independent decisions; critically evaluate actions of their own, teams they lead and organisations they are part of; take responsibility for results of these actions; responsibly perform professional roles, including: n - observing rules of professional ethics and require it from others, n - care for the achievements and traditions of the profession	The lecture presents basic information that will allow students to make the right (environmentally and socially responsible) decisions related to the implementation of energy solutions (in private installations or in production plants) in the future.	[SK4] Assessment of communication skills, including language correctness
Subject contents	<p>Course content – lecture</p> <p>Lecture:</p> <ol style="list-style-type: none"> (2h) Introduction. Discussion of the world of "exponential growth". Discussion of the basics of the financial system. (2h) Discussion of the issue of depletion of raw materials, with particular emphasis on the depletion of gas and oil resources - the concept of "Peak oil". (2h) Discussion of the impact of greenhouse gas emissions on the observed global warming. (2h) Presentation of the functioning of the current energy system, based on the combustion of fossil fuels. (2h) Presentation of the scheme of the functioning of the energy system based on renewable energy sources. (2h) Discussing the advantages and disadvantages of individual renewable energy sources. (1h) Written test 		
Prerequisites and co-requisites	No specific prerequisites. Basic knowledge of the laws of physics and chemistry at primary school level.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Written exam	60.0%	100.0%
Recommended reading	Basic literature	<ol style="list-style-type: none"> M. Popkiewicz, Zrozumieć transformację energetyczną, wyd. Sonia Draga 2024 M. Popkiewicz, Rewolucja energetyczna Ale po co?, Sonia Draga 2015 M. Popkiewicz, Świat na rozdrożu, wyd. Sonia Draga 2012 	
	Supplementary literature	<ol style="list-style-type: none"> M. Popkiewicz, A. Kardaś, Sz. Malinowski, Nauka o klimacie, 2023 	
	eResources addresses		

Example issues/ example questions/ tasks being completed	
Practical activities within the subject	Not applicable

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