University of Gdańsk

Subject card

Subject name and code	Principles and planning of a low-emission economy, PG_00202222						
Field of study	Socio-economic geography with elements of GIS						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2027/2028		
Education level	Master's studies		Subject group		Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		3.0		
Learning profile	academic		Assessment form		credit		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr Sylwia Horska-Schwarz				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	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		7.0		38.0	75
Subject objectives	For students to acquire knowledge and skills related to the principles and planning of a low-carbon economy, the implementation of EU and national policies on air quality management, reduction of air emissions, a low-carbon economy, increased energy efficiency, low-carbon mobility, and a circular economy.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[GSEMU2_W06] explains problems and theories in socio-economic geography, taking into account the complex relationships and trends of changes in the natural and anthropogenic environment; understands their theoretical and practical significance	Describes the dangers of low emissions and ways to deal with them; characterises trends in environmental change caused by low emissions; explains the theoretical and practical importance of emissions and air quality management and the use of low-carbon economy technologies; identifies examples of good practice in shaping a low-carbon economy	[SW4] test/exam - oral or written [SW2] presentation/project/paper/ report
[GSEMU2_W03] understands to a deeper extent, the determinants (natural, social, economic, cultural) of processes occurring in the human life environment on various spatial and time scales	Describes natural and socio-economic conditions for the development of a low-carbon economy in Poland and other EU countries; identifies opportunities to improve energy efficiency; describes conditions for the development of e-mobility in Poland and other EU countries; characterises conditions and barriers for the implementation of a low-carbon economy in urban and rural areas	[SW4] test/exam - oral or written [SW2] presentation/project/paper/ report
[GSEMU2_W01] explains in-depth modern socio-economic processes as well as has ordered and theoretically founded knowledge of socio-economic geography in connection with related natural and social scientific disciplines	Characterises the phenomenon of low emissions; explains the concept of low-carbon economy development; describes the legal regulations for a low-carbon economy; explains the terms: closed-loop economy, LCA, carbon footprint; explains the concept of e-mobility	[SW4] test/exam - oral or written [SW2] presentation/project/paper/ report
[GSEMU2_U05] formulates and tests hypotheses regarding determinants and factors (natural, social, economic, cultural) of processes occurring in socio-economic space	Formulates and tests hypotheses regarding regional and local conditions for the development of a low-carbon economy and the need for an effective greenhouse gas emissions inventory	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written
[GSEMU2_K02] is ready to solve cognitive and practical problems in the field of socio-economic geography in cooperation with various entities, taking into account the acquired knowledge	Actively develops professional competence in low-carbon economy planning; builds on acquired knowledge and skills to propose effective solutions to develop a low-carbon economy at national, regional and local level; provides examples of good practices that can be used in low-carbon economy development	[SK8] observation of student's independent or team work
[GSEMU2_U02] properly selects sources and information derived from them, with particular regard to sources of spatial information; evaluatesthem critically and interpret them creatively	Researches and analyses information on the development of a low-carbon economy in strategic and planning documents; analyses and critically evaluates selected elements of local low-carbon plans; on the basis of information obtained from local low-carbon plans, assesses spatial variations in the development of a low-carbon economy in Poland and other EU countries; on the basis of data obtained from local low-carbon plans, performs carbon footprint calculations and critical analysis of the resulting emission data	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written

Subject contents	A. Problems of the lectureA.1. Definition of low emission and causes of its formationA.2 Threats posed by low emissions and ways of eliminating themA.3 Concept of low emission economy developmentA.4 Low-carbon economy in legal regulations and European Union policyA.5 Low-carbon economy in PolandA.6 Closed loop economy and LCAA.7 Managing emissions and air qualityA.8 Use of low-carbon economy technologies in Poland - practice and theoryA.9. Improvement of energy efficiencyA.10. Concept of e-mobility in the light of climate and transport policy of the European Union and PolandB. Problems of the exercisesB.1 Low-carbon economy planning at national, regional and local levelB.2 Analysis of municipal low-carbon plansB.3 The carbon footprint in developing a low-carbon economyB.4 Calculating greenhouse gas emissions from different sectors of the economyB.5 Examples of good practice in developing a low-carbon economyB.6 Implementing a low-carbon economy in urban areasB.7. Implementing a low-carbon economy in rural areas
Prerequisites and co-requisites	Knowledge of basic principles of strategic planning at local level, basic principles of environmental programming inmunicipalities, basic issues of pollutant emissions and atmospheric air protection, climate change.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Grading of the partial works	51.0%	50.0%
Final test	51.0%	50.0%

Recommended reading

Basic literature

Bach I., Evans N., Karaczun Z.M., Riedel A., Skajewska A., 2016. Budowa gospodarki niskoemisyjnej. Praktyka na poziomie lokalnym w Polsce iNiemczech. Polski Klub Ekologiczny Okręg Mazowiecki, Warszawa.Kistowski M., Wiśniewski P., 2017. Niskowęglowy rozwój obszarów wiejskich w Polsce a plany gospodarki niskoemisyjnej. WydawnictwoUniwersytetu Gdańskiego, Gdańsk.Lokalne plany gospodarki niskoemisyjnejRzeńca A., 2016. EKOMIASTO#ŚRODOWISKO. Zrównoważony, inteligentny i partycypacyjny rozwój miasta. Wydawnictwo Uniwersytetu Łódzkiego,Łódź.Sadlok R. (red.), 2014. Przeciwdziałanie niskiej emisji na terenach zwartej zabudowy mieszkalnej. Stowarzyszenie na rzecz efektywnościenergetycznej i rozwoju odnawialnych źródeł energii HELIOS, Bochnia.

	Supplementary literature	Chmiel D., Hyska M., Kraszewska M., Winkowska E., 2014. Nowa misja niższa emisja. Gospodarka niskoemisyjna w gminach. KrajoweStowarzyszenie Inicjatyw, Warszawa.Gajewski J., Paprocki W., Pieriegud J., 2017. E-mobliność: wizje i scenariusze rozwoju. Centrum Myśli Strategicznych, Sopot.Węglarz A., Winkowska W., Wójcik W., 2015. Gospodarka niskoemisyjna zaczyna się w gminie. Podręcznik dla polskich samorządów. AdelphiResearch Gemeinnützige GmbH, Berlin.Wiśniewski P., 2015. Rolnictwo i obszary wiejskie w lokalnym planowaniu gospodarki niskoemisyjnej na przykładzie powiatu starogardzkiego. WodaŚrodowisko-Obszary Wiejskie, t. 15, z. 4 (52), 69-81.Wiśniewski P., 2015. Zintegrowane planowanie gospodarki niskoemisyjnej w gminach [w]: Maj J., Kwiatkiewicz P., Szczerbowski R. i in. (red.),Europejski wymiar bezpieczeństwa energetycznego a ochrona środowiska, Między ewolucją a rewolucją w poszukiwaniu strategii energetycznej,tom II, Fundacja na rzecz Czystej Energii, Poznań, 609-618.Wiśniewski P., 2017. Ślad węglowy w planowaniu gospodarki niskoemisyjnej na obszarach wiejskich. Inżynieria Ekologiczna, vol. 18, 1, 58-64.Wiśniewski P., 2017. Zasoby obszarów wiejskich w lokalnym rozwoju gospodarki niskowęglowej. Studia Obszarów Wiejskich, 45, 7-20.Wiśniewski P., 2018. Ocena wielkości emisji gazów cieplarnianych ze źródeł rolniczych na poziomie lokalnym w Polsce. Rocznik OchronaŚrodowiska, 20, 1811-1829.Wiśniewski P., Kistowski M., 2018. Znaczenie problematyki obszarów wiejskich oraz rolnictwa w celach i kierunkach rozwoju gospodarkiniskoemisyjnej na poziomie gminnym. Studia Obszarów Wiejskich, 50, 49-64.
	eResources addresses	
Example issues/ example questions/ tasks being completed	LectureAt least 51% marks in the written testExercisesSuccessful completion of all tests and assignmentsactive participation in classesThe student is required to obtain a pass mark for a course in the semester.the semesterA student obtains one mark from the course which in 50% results from the mark for exercises50% of the grade for the exercises and 50% for the examination/assessment, while in order to pass a course it is necessary toobtain a pass mark for both the exercise and lecture parts of the course."	
Work placement	Not applicable	

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