GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Regional economy and industry, PG_00061749		
Field of study	Recycling and Energy Recovery		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2026/2027
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	4	Language of instruction	Polish
Semester of study	7	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Process Engineering and Chemical Technology -> Faculty of Chemistry -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Bartosz Szulczyński	
	Teachers	dr inż. Bartosz Szulczyński dr inż. Maciej Sienkiewicz dr inż. Marcin Włoch	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	10.0	0.0	0.0	0.0	10.0	20

E-learning hours included: 0.0

eNauczanie source addresses:

Moodle ID: 9205 Gospodarka i przemysł regionu 2026/2027
https://enauczanie.pg.edu.pl/2025/course/view.php?id=9205

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	20	5.0	25.0	50

Subject objectives

The objective of the course is to familiarise students with the economic and industrial potential of the Pomeranian Voivodeship, the structure of its regional economy, and its main development directions. Particular emphasis is placed on issues related to waste management, raw material recovery, plastics recycling, hazardous waste treatment, and the energy transition of the region. The course aims to develop students' skills in analysing economic and environmental data, identifying key enterprises and institutions, and assessing the potential of the Pomeranian Voivodeship to implement circular economy principles and regional and national development and environmental strategies.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_K03] is committed to independent lifelong learning and independently follows the development of science and technology, especially in the area of recycling raw materials and energy.	The student demonstrates a willingness to independently expand their knowledge and engage in lifelong learning, as well as to follow economic changes, technological developments and innovative solutions in waste management, recycling, raw material and energy recovery, and the regional energy transition.	[SK5] Assessment of ability to solve problems that arise in practice
[K6_W71] has general knowledge in humanistic, social, economic or legal sciences	The student knows and understands the basic economic and social determinants of the development of the Pomeranian Voivodeship, including the structure of the regional economy, the characteristics of industrial activities, and the role of enterprises and institutions in regional economic development.	[SW2] Assessment of knowledge contained in presentation
[K6_K71] is conscious of the need to apply knowledge from humanistic, social, economic or legal sciences in order to function in a social environment	The student is aware of the importance of economic, social and business knowledge in assessing regional development processes and understands the need to consider social, economic and environmental conditions in the activities of enterprises and institutions, particularly in the fields of waste management, raw material recovery and energy transition.	[SK4] Assessment of communication skills, including language correctness [SK1] Assessment of group work skills

Subject contents

Course content – lecture

- Economic potential and industrial structure of the Pomeranian Voivodeship – analysis of data, trends and development directions.
- Waste management in the Pomeranian Voivodeship until 2030 – system balance, forecasts and capacity to achieve environmental objectives.
- Energy sector transition in the Pomeranian Voivodeship – energy generation structure, offshore potential and investment prospects.
- Key industrial sectors of the Pomeranian Voivodeship – regional specialisations, value chains and investment potential.
- Strategic infrastructure and determinants of economic development in Pomerania – seaports, transport, logistics and availability of investment areas.
- Companies and institutions involved in plastics production and processing – business profiles, technologies and economic significance in the region.
- Companies and institutions involved in plastics recycling – technologies used, raw material recovery opportunities and the development potential of the sector.
- Companies and institutions involved in the treatment and disposal of hazardous waste – business profiles, technologies used and regional infrastructure.
- Readiness of the Pomeranian Voivodeship to implement national and regional waste management plans – analysis of infrastructure, capacity to achieve targets and investment needs.

Course content – seminar

- Analysis of the economic potential and industrial structure of the Pomeranian Voivodeship based on statistical data (Statistics Poland, Local Data Bank) and regional strategic documents. Identification of major industries, enterprises and economic development directions.
- Analysis of the waste management system in the Pomeranian Voivodeship – waste generation and treatment balance, available infrastructure, recovery and recycling rates, and identification of key systemic challenges.
- Analysis of the regional energy sector – identification of major energy producers, renewable energy investments and offshore wind energy projects.
- Characteristics of selected enterprises representing key industrial sectors of the Pomeranian Voivodeship. Analysis of business profiles, cooperation networks, supply chains and investment potential.
- Analysis of Pomerania's strategic infrastructure – the importance of seaports, cargo terminals, transport and logistics infrastructure for the development of the regional economy and industry.
- Identification and characteristics of companies and institutions involved in plastics production and processing in the Pomeranian Voivodeship. Analysis of business profiles and technologies used.
- Overview of companies and facilities involved in plastics recycling in the region. Analysis of technologies used, material recovery opportunities and the development potential of the regional recycling market.
- Identification of companies and facilities involved in hazardous waste treatment and disposal. Analysis of treatment and disposal methods and assessment of the availability of regional infrastructure.
- Assessment of the Pomeranian Voivodeship's readiness to implement national and regional waste management plans. Analysis of strategic documents, available infrastructure, investment needs and barriers to achieving environmental objectives.

Prerequisites and co-requisites

Basic knowledge of environmental protection, waste management and the functioning of the market economy. Ability to search for, select and analyse information and use publicly available data sources. Interest in regional economic and industrial development, circular economy, raw material and energy recovery, and energy transition.

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Test	60.0%	50.0%
	Seminar presentations	60.0%	50.0%
Recommended reading	Basic literature	1. Pomeranian Regional Assembly, **Development Strategy for the Pomeranian Voivodeship 2030**, Gdańsk, 2021. 2. Pomeranian Regional Assembly, **Waste Management Plan for the Pomeranian Voivodeship 2022**, Gdańsk, 2016. 3. Council of Ministers of the Republic of Poland, **National Waste Management Plan 2028**, Warsaw, 2023. 4. Ministry of Climate and Environment, **Energy Policy of Poland until 2040**, Warsaw, 2021. 5. Statistics Poland, Statistical Office in Gdańsk, **Statistical Yearbook of the Pomeranian Voivodeship**, Gdańsk, latest available edition.	
	Supplementary literature	1. European Commission, **A New Circular Economy Action Plan: For a Cleaner and More Competitive Europe**, COM(2020) 98 final, Brussels, 2020. 2. European Commission, **A European Strategy for Plastics in a Circular Economy**, COM(2018) 28 final, Brussels, 2018.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	• What are the most important economic and industrial sectors in the Pomeranian Voivodeship? What factors influence their development? • How is the economic structure of the Pomeranian Voivodeship changing, and what are the prospects for regional industrial development? • What are the main problems and challenges facing the regional waste management system? Does the Pomeranian Voivodeship have sufficient infrastructure to achieve its environmental objectives by 2030? • Which companies and institutions in the Pomeranian Voivodeship are involved in plastics production and processing? What technologies and raw materials do they use? • Which entities operate in the field of plastics recycling? What material recovery technologies are used, and what are the opportunities for their further development? • Which companies and facilities in the region are involved in the treatment and disposal of hazardous waste? What technologies are used? • To what extent is the Pomeranian Voivodeship prepared to implement national and regional waste management plans? What investments are necessary to achieve the established objectives? • What is the importance of offshore wind energy and other renewable energy sources for the region's energy security? • What are the most important industrial companies and sectors in the Pomeranian Voivodeship? What opportunities exist for cooperation between different sectors of the regional economy? • How does port, transport and logistics infrastructure affect the economic competitiveness of the Pomeranian Voivodeship? • What opportunities exist for developing a circular economy in the Pomeranian Voivodeship? What role do industrial enterprises play in this process? • Preparation of a seminar presentation on a selected company, institution or industrial facility operating in the Pomeranian Voivodeship and involved in waste management, recycling, raw material recovery or energy recovery.		
Practical activites within the subject	Not applicable		

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