



## Subject card

Subject name and code	WASTE MANAGEMENT, PG_00060006						
Field of study	Environmental Engineering						
Date of commencement of studies	February 2025		Academic year of realisation of subject		2025/2026		
Education level	second-cycle 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	1		Language of instruction		English		
Semester of study	2		ECTS credits		4.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Environmental Engineering Technology -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. inż. Aneta Łuczkiwicz				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	15.0	0.0	15.0	0.0	60
	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	60		5.0		38.0	103
Subject objectives	The aim of the course is to present waste management in terms of saving critical raw materials, to provide practical knowledge of the circular economy, recycling, refurbishment, and remanufacturing also as new business opportunities.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K7_W07		The student has in-depth, structured and theoretically based knowledge of municipal management, including recycling and resource recovery technologies.		[SW3] Assessment of knowledge contained in written work and projects [SW2] Assessment of knowledge contained in presentation [SW1] Assessment of factual knowledge		
	K7_U04		The student is able to prepare, present and discuss the results obtained while a tutorials.		[SU5] Assessment of ability to present the results of task [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment		
	K7_U07		The student is able to plan and conduct field research and computer simulations leading to the assessment of the effectiveness of the solutions used in environmental engineering		[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment		
	K7_U12		The student is able to analyze and evaluate in technical and economic terms the solutions and functioning of environmental engineering facilities and systems		[SU5] Assessment of ability to present the results of task [SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment		

Subject contents	Current challenges and opportunities in resource resilience. Smart waste management. Critical raw materials substitution and supply chains, including recycling (pre-processing, metallurgy and its challenges). Environmental problems caused by waste mismanagement. Different/efficient collection of waste in households and at companies levels; Psychology of recycling and remanufacturing/refurbishment. Waste prevention through chain optimization, product design sharing/access economy, circular procurement and new business models.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	lecture	60.0%	40.0%
	tutorials	60.0%	30.0%
	project	60.0%	30.0%
Recommended reading	Basic literature	Waste Management EU Policies & Strategies  <a href="https://ec.europa.eu/environment/waste/index.htm">https://ec.europa.eu/environment/waste/index.htm</a>	
	Supplementary literature	-	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	-		
Work placement	Not applicable		

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