



Subject card

Subject name and code		Waste on Civil Engineering, PG_00070834						
Field of study		Recycling and Energy Recovery						
Date of commencement of studies		October 2023	Academic year of realisation of subject			2025/2026		
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		3	Language of instruction			Polish		
Semester of study		6	ECTS credits			10.0		
Learning profile		general academic profile	Assessment form			assessment		
Conducting unit		Department of Geotechnical and Hydraulic Engineering -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)		Subject supervisor		dr inż. Rafał Ossowski				
		Teachers		dr inż. Rafał Ossowski				
Lesson types		Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
		Number of study hours	0.0	0.0	0.0	100.0	0.0	100
		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	100	0.0	0.0	100		
Subject objectives		An introduction to construction waste and ways of reusing it.						
Learning outcomes		Course outcome	Subject outcome		Method of verification			
		[K6_U03] designs processes, technologies and systems related to the recovery of raw materials and energy, using appropriate concepts, standards and design methods.	Designs and experimentally tests methods for using waste in construction applications		[SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information			
		[K6_U05] plans, prepares and conducts engineering activities in the field of raw materials and energy recovery, applying practical knowledge and understanding of the specificity of materials, devices and tools, processes and technologies.	Plans and conducts experiments relating to the use of waste in construction		[SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task			
		[K6_K01] makes decisions independently, conducts a critical assessment of his own actions and the actions of the teams he manages, assuming responsibility for the effects of these actions.	Works independently and as part of a team to complete a project		[SK1] Assessment of group work skills [SK2] Assessment of progress of work			
		[K6_K02] cooperates with other people in the implementation of teamwork, both as a leader and a team member, effectively achieving the assumed goals.	Works independently and as part of a team to complete a project		[SK4] Assessment of communication skills, including language correctness [SK1] Assessment of group work skills			
		[K6_W03] identifies problems and phenomena related to the recovery of raw materials and energy as well as applicable concepts, standards and design methods and is aware of their limitations.	Identifies ways of using waste in construction applications, depending on the specific nature of the project		[SW1] Assessment of factual knowledge			

Subject contents	<p>Course content – project Experimental modelling studies on the use of waste materials in construction:</p> <ol style="list-style-type: none"> 1. Planning and conducting research, 2. Interpreting measurements, 3. Numerical simulations 4. Preparing a research report 5. Applications of waste materials in various sectors of the construction industry (field trips, independent study) 6. Preparation of a presentation of the research report and a presentation on applications in selected sectors of the construction industry 		
Prerequisites and co-requisites	Basic knowledge of soil mechanics and civil engineering		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Project Report	51.0%	50.0%
	Final Presentation	51.0%	50.0%
Recommended reading	Basic literature	<ul style="list-style-type: none"> • Kurdowski W., <i>Chemia cementu i betonu</i>, Wydawnictwo Naukowe PWN, Warszawa 2010. • Giergiczny Z., <i>Rola popiołów lotnych wapniowych i krzemionkowych w składzie spoiw budowlanych i betonów</i>, Seria Monografie, Wydawnictwo Politechniki Śląskiej, Gliwice 2013. • Małolepszy J., <i>Zastosowanie surowców wtórnych w materiałach budowlanych</i>, Wydawnictwo AGH, Kraków. • Ujma A., <i>Wykorzystanie materiałów odpadowych w budownictwie</i>, Wydawnictwo Politechniki Częstochowskiej, Częstochowa 2011. • Gajewska B., Kłoss-Trębaczkiwicz H., <i>Recykling odpadów budowlanych</i>, Wydawnictwo Naukowe PWN, Warszawa 2015. • <i>Dyrektywa Parlamentu Europejskiego i Rady 2008/98/WE w sprawie odpadów (oraz jej późniejsze nowelizacje dotyczące odpadów z budowy i rozbiórek CDW).</i> 	
	Supplementary literature	-	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Practical activities within the subject	Not applicable		

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