



Subject card

Subject name and code	Introduction to Concrete Technology, PG_00059340						
Field of study	Civil Engineering						
Date of commencement of studies	October 2023	Academic year of realisation of subject			2023/2024		
Education level	first-cycle studies	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	Katedra Wytrzymałości Materiałów -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		mgr inż. Lucyna Grabarczyk				
	Teachers		mgr inż. Lucyna Grabarczyk				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	5.0	0.0	0.0	0.0	0.0	5
	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	5		0.0		0.0	5
Subject objectives	Knowledge of the classification and marking of technical characteristics of concrete components, concrete mixtures and hardened concrete, classification and use of concrete, basic technological processes in concrete production.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_U02] Analyse & solve engineering issues & problems in the field of civil engineering by applying appropriate and relevant established analytical, numerical and experimental methods.	The student defines and explains at a basic level the concepts and principles of concrete technology.			[SU2] Assessment of ability to analyse information		
	[K6_W01] Demonstrate knowledge and understanding of mathematics as well as sciences and engineering disciplines underlying civil engineering at a level necessary to achieve the other programme outcomes.	The student is able to use appropriate formulas in the process of selecting concrete components.			[SW3] Assessment of knowledge contained in written work and projects		
	[K6_W05] Demonstrate knowledge and understanding of research methods (obtaining information, simulations, experimental methods) in the field of civil engineering.	The student knows the basic properties of concrete components and hardened concrete			[SW3] Assessment of knowledge contained in written work and projects		
	[K6_U01] Apply knowledge and understanding of mathematics as well as sciences and engineering disciplines underlying civil engineering to solve engineering problems and issues.	The student knows the basics of designing the composition of a concrete mixture			[SU2] Assessment of ability to analyse information		
Subject contents	Origin and definitions of concrete. Concrete ingredients: binders, aggregates, admixtures, additives according to current standards. Basic properties of binders. Types and classifications of cements. Main and secondary ingredients, chemical and mineral composition. Special cements. Aggregates; classification, origin, properties. Mixing water. Admixtures and additives. Concrete mix - consistency, workability, homogeneity. Selected methods for designing the composition of concrete mixtures. Concrete mix tests. Concrete testing.						

Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Test	50.0%	100.0%
Recommended reading	Basic literature	1. Jamroży Z.; Beton i jego technologie. PWN Warszawa, 2000 2. Kluz T., Eman K.: -Projektowanie betonów. 3. Neville A. M.: Właściwości betonu, Polski Cement Kraków 2000 4. Małolepszy J.; Deja J; Brylicki W, Gawlicki M: -Technologia betonu. Metody badań 5. Piasta J., Piasta W.: - Beton zwykły.	
	Supplementary literature	1. Praca zbiorowa. Budownictwo ogólne tom 1 i 2 Arkady 2005, 2006 2. Bukowski B.; Kuczyński: Budownictwo betonowe. Tom I i II. Arkady, Warszawa 1977	
	eResources addresses	Adresy na platformie eNauczanie: Wstęp do technologii betonu 2023-24 - Moodle ID: 34678 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=34678	
Example issues/ example questions/ tasks being completed	1. Discuss the ingredients of concrete.2. Discuss 1 method of concrete design.3. Discuss the methods of testing concrete mixture and concrete.		
Work placement	Not applicable		

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