



Subject card

Subject name and code	Technology of Concrete Production, PG_00060089						
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	2		ECTS credits		3.0		
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				
			dr inż. Elżbieta Haustein				
			dr inż. Marzena Kurpińska				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	15.0	15.0	15.0	0.0	45
	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	45		5.0		25.0	75
Subject objectives	Acquainting with classification and meaning features technical ingredients of concrete, concrete blends and hardened concrete, the selection of elements of concrete and establishing the yard of concrete, classification and applying concrete, basic technological processes in the production of concrete. Methods of testing concrete properties.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_W06] Demonstrates practical knowledge and understanding of materials, devices and tools, processes and technologies in the field of civil engineering (and their limitations).	Student defines and explains on basic level of the concept and principles of concrete technology.	[SW2] Assessment of knowledge contained in presentation
	[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 is able to investigate and analyze the basic properties of concrete.	[SU1] Assessment of task fulfilment
	[K6_U05] Conducts research (obtaining information, simulations, experimental methods) in the field of construction in order to solve specific tasks and report research results.	The student is able to make different types of concrete, compare design methods, their impact on the properties of concrete. He knows how to choose the right method to get the intended effect.	[SU4] Assessment of ability to use methods and tools
	[K6_U01] Apply knowledge and understanding of mathematics as well as sciences and engineering disciplines underlying civil engineering to solve engineering problems and issues.	he student selects the ingredients (aggregate, cement, admixtures, additives) and the method design of ordinary concrete. Student designs concrete with taking into account the purpose, method of laying and compaction concrete mix.	[SU5] Assessment of ability to present the results of task
	[K6_W02] Demonstrate knowledge and understanding of the processes and established methods of analysis / solution of engineering issues & problems in the field of civil engineering and of their limitations.	The student is able to select the appropriate parameters of concrete for specific applications in structures.	[SW2] Assessment of knowledge contained in presentation
Subject contents	Genesis and definition of concrete, binder, admixtures, additives and gravel. Basic parameters of binders. Gypsum and lime binders: types and characteristics. Types and classification of cements. The components of concrete, chemical and mineral composition. Special cements. Aggregates: classification, origin and characteristics. Water for concrete mix. Admixtures and additives. Concrete mix - its consistency, workability and homogeneity. Methods of concrete design. Concrete tests and the analysis of the results. Concrete mix production.Vibration. Concrete care.		
Prerequisites and co-requisites	Fundamentals of concrete chemistry.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Group presentation of research results	60.0%	50.0%
	assessment of laboratory work	60.0%	50.0%
Recommended reading	Basic literature	1. Neville A. M. , Properties of Concrete'	
	Supplementary literature	1. Collepari M. 'New Concrete' Torino 2006 Grafiche Tintoretto	
	eResources addresses	Adresy na platformie eNauczanie: Technologia Betonu 2024 - Moodle ID: 36706 https://enauczenie.pg.edu.pl/moodle/course/view.php?id=36706	
Example issues/ example questions/ tasks being completed	1. Discuss the properties of phase constants in the clinker. 2. Discuss the process of ordinary concrete design method 3R		
Work placement	Not applicable		