



## Subject card

Subject name and code	Physical and Chemical Aspects of Concrete Production, PG_00052968						
Field of study	Chemistry in Construction Engineering						
Date of commencement of studies	February 2024	Academic year of realisation of subject			2024/2025		
Education level	second-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	1	Language of instruction			Polish		
Semester of study	2	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Physical Chemistry -> Faculty of Chemistry						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Adam Kloskowski				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	15.0	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	The aim of the subject is to introduce the students to the matters of physicochemical properties of cement and concrete.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K7_W02		student knows (and can use correctly) the concepts from the subject		[SW2] Assessment of knowledge contained in presentation [SW1] Assessment of factual knowledge		
	K7_U03		student is able to refer the conclusions from his scientific readings to others		[SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment		
	K7_K01		student is able to broad his knowledge (individually and within a group) in the field, understands the need to update it and is able to convey the gained knowledge to others		[SK1] Assessment of group work skills [SK4] Assessment of communication skills, including language correctness		
	K7_W03		student knows the physicochemical basis of the discussed problems		[SW2] Assessment of knowledge contained in presentation [SW1] Assessment of factual knowledge		
Subject contents	Phase equilibria important in the cement chemistry.  Hydration of the phases of the clinker / of cement.  Rheological properties of the slurry.  Properties of concrete.  Cement additives.						

Prerequisites and co-requisites	Basic knowledge of inorganic and physical chemistry.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		100.0%	30.0%
		60.0%	70.0%
Recommended reading	Basic literature	Wiesław Kurdowski "Chemistry of Cement and Concrete", Wydawnictwo Polski Cement, Wydawnictwo Naukowe PWN, 2010	
	Supplementary literature	inorganic chemistry textbooks, physical chemistry textbooks	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		