



Subject card

Subject name and code	Modern Technologies in Construction, PG_00057077						
Field of study	Architecture						
Date of commencement of studies	October 2022		Academic year of realisation of subject		2022/2023		
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		Polish		
Semester of study	1		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Technical Fundamentals of Architecture Design -> Faculty of Architecture						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. arch. Marek Sztafrowski				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	15.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
	Adresy na platformie eNauczanie:						
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	30		4.0		16.0	50
Subject objectives	Acquiring the ability to apply innovative technologies in the design of the built environment						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_W01] knows and understands construction, building and engineering issues related to building design; principles, solutions, constructions and building materials used in performing complex engineering tasks in the field of architectural and urban design		Student knows innovative building materials and technologies and has knowledge about their application in architectural design process		[SW2] Assessment of knowledge contained in presentation		
	[K7_W02] knows and understands the rules of gathering information and their interpretation as a part of project concept preparation; detailed issues related to architecture and urban planning in the field of complex design problems solving		Student knows the legal provisions, standards and regulations in relation to his project		[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		

Subject contents	New technologies in architecture: introduction, concept and role of technology, social aspects of technological innovations, Actor-Network Theory		
	Building materials - new applications of traditional materials: concrete in architecture, modern insulation systems, foundation slabs, wooden structures		
	Smartmaterials: nanomaterials, phase change materials, high-performance materials		
	Building materials development in an environmental aspect: low-processed materials, recycled and susceptible to recycling		
	Intelligent components and systems in architecture, intelligent environments. Scenarios for the future		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	completion of the tasks	100.0%	100.0%
Recommended reading	Basic literature	Addington D. M., Schodek D. L.: Smart Materials and New Technologies. For the architecture and design professions, Elsevier, 2005	
		Aksamija A. Integrating Innovation in Architecture. Design, Methods and Technology for Progressive Practice and Research (2016)	
		Braham W.W., Hale J. A., (red.) Rethinking Technology: A Reader in Architectural Theory, 2006	
	Supplementary literature	Kabrońska J., Szafrowski M.: Innowacyjne technologie w architekturze jako narzędzie polepszenia jakości energetycznej budynków [in:] Wybrane problemy przebudowy obiektów budowlanych, ed. Rafał Janowicz, Jarosław Przewłócki Gdańsk: Wydawnictwo Politechniki Gdańskiej, pp.99-108, 2016	
		Konarzewska B., Szafrowski M.: Environmentally friendly materials in architecture modern trends and development directions, 5th SGEM International Multidisciplinary Scientific Conferences on SOCIAL SCIENCES and ARTS; SGEM, Albena Bułgaria 2018	
		Wysocki M., Kabrońska J.: Nowe technologie w architekturze. Społeczna rola technologii [in:] Wybrane problemy przebudowy obiektów budowlanych, ed. Rafał Janowicz, Jarosław Przewłócki Gdańsk: Wydawnictwo Politechniki Gdańskiej, pp.127-136, 2016	
		Latour B., Yaneva A., Give Me a Gun and I Will Make All Buildings Move: An Ants View of Architecture, 2008	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Multimedia presentation concerning the use of the innovative technologies in architectural design		
Work placement	Not applicable		