



Subject card

Subject name and code	Modern Technologies in Construction, PG_00057077						
Field of study	Architecture						
Date of commencement of studies	October 2023	Academic year of realisation of subject			2023/2024		
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	dr inż. arch. Marek Sztafrowski dr inż. arch. Joanna Kabrońska					
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						
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	<p>New technologies in architecture: introduction, concept and role of technology, social aspects of technological innovations, Actor-Network Theory</p> <p>Building materials - new applications of traditional materials: concrete in architecture, modern insulation systems, foundation slabs, wooden structures</p> <p>Smartmaterials: nanomaterials, phase change materials, high-performance materials</p> <p>Building materials development in an environmental aspect: low-processed materials, recycled and susceptible to recycling</p> <p>Intelligent components and systems in architecture, intelligent environments. Scenarios for the future</p>		
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	<p>Addington D. M., Schodek D. L.: Smart Materials and New Technologies. For the architecture and design professions, Elsevier, 2005</p> <p>Aksamija A. Integrating Innovation in Architecture. Design, Methods and Technology for Progressive Practice and Research (2016)</p> <p>Braham W.W., Hale J. A., (red.) Rethinking Technology: A Reader in Architectural Theory, 2006</p>	
	Supplementary literature	<p>Kabrońska J., Sztáfrowski 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</p> <p>Konarzewska B., Sztáfrowski 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</p> <p>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</p> <p>Latour B., Yaneva A., Give Me a Gun and I Will Make All Buildings Move: An Ants View of Architecture, 2008</p>	
	eResources addresses	<p>Adresy na platformie eNauczanie:</p> <p>Nowoczesne Technologie w Budownictwie 2023/24 - Moodle ID: 30840 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=30840</p>	
Example issues/ example questions/ tasks being completed	Multimedia presentation concerning the use of the innovative technologies in architectural design		
Work placement	Not applicable		