



Subject card

Subject name and code	Modern Technologies in Construction, PG_00057082						
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			English		
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. Joanna Kabrońska				
	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		The student knows and understands the rules of searching and selecting information about emerging technologies and innovative building materials during the development of the design concept		[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects		

Subject contents	<p>New technologies in architecture: introduction, concept and role of technology. Social aspects of technological change: Actor-Network Theory</p> <p>Innovative materials and technologies and their applications</p> <p>Smartmaterials: nanomaterials, phase-change materials, high-performance materials</p> <p>Building materials and technologies in an environmental aspect. Energy neutral architecture</p> <p>Intelligent components and systems in architecture, intelligent environments. Scenarios for the future</p>								
Prerequisites and co-requisites									
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="456 568 790 600">Subject passing criteria</th> <th data-bbox="802 568 1136 600">Passing threshold</th> <th data-bbox="1141 568 1469 600">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 607 790 629">completion of the tasks</td> <td data-bbox="802 607 1136 629">100.0%</td> <td data-bbox="1141 607 1469 629">100.0%</td> </tr> </tbody> </table>	Subject passing criteria	Passing threshold	Percentage of the final grade	completion of the tasks	100.0%	100.0%		
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Recommended reading	<p>Basic literature</p>	<p>Aksamija A.: Integrating Innovation in Architecture: Design, Methods and Technology for Progressive Practice and Research, 2016</p> <p>Kretzer M.: Information Materials: Smart Materials for Adaptive Architecture, 2017</p> <p>Wysocki M., Kabrońska J.: Nowe technologie w architekturze. Społeczna rola technologii [in:] Wybrane problemy przebudowy obiektów budowlanych, ed. Janowicz R., Przewłócki J., pp. 127-136, 2016</p>							
	<p>Supplementary literature</p>	<p>Beauregard R.: We Blame the Building! The Architecture of Distributed Responsibility. International Journal of Urban and Regional Research, 39 (3), pp. 53349, 2015</p> <p>De Munck B.: Re-assembling Actor-Network Theory and urban history. Urban History, 44(1), pp. 111-122, 2017. doi:10.1017/S0963926816000298</p> <p>Information Resources Management Association: Smart Cities and Smart Spaces: Concepts, Methodologies, Tools, and Applications, 2019</p> <p>Kabrońska J., Sztafrowski M.: Innowacyjne technologie w architekturze jako narzędzie polepszenia jakości energetycznej budynków [in:] Wybrane problemy przebudowy obiektów budowlanych, ed. Janowicz R., Przewłócki J., pp.127-136, 2016</p> <p>Kabrońska J., Wysocki M.: The adaptability of architectural objects in contemporary design [in:] Object-Architecture-Environment : the problems of sustainable design. Vol. 2, Architecture, ed. Idem R., Górka A., pp. 31-45, 2018</p> <p>Latour B., Yaneva A.: Give Me a Gun and I Will Make All Buildings Move: An ANTs View of Architecture, 2008</p> <p>Wiethoff A., Hussmann H.: Media Architecture: Using Information and Media As Construction Material, 2017</p>							
Example issues/ example questions/ tasks being completed	Multimedia presentation concerning the use of the innovative technologies in architectural design								
Work placement	Not applicable								