

## Subject card

Subject name and code	Modern Technologies in Construction, PG_00067338								
Field of study	Architecture								
Date of commencement of studies	October 2025		Academic year of realisation of subject			2025/2026			
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 Architectural Design -> Faculty Of Architecture -> Wydziały Politechniki Gdańskiej						Nydziały		
Name and surname	Subject supervisor	dr inż. arch. Joanna Kabrońska							
of lecturer (lecturers)	Teachers		dr inż. arch. Joanna Kabrońska						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Projec	:t	Seminar	SUM	
	Number of study hours	15.0	15.0	0.0	0.0		0.0	30	
	E-learning hours inclu	uded: 0.0							
Learning activity and number of study hours	Learning activity Participation in classes including plan				Self-study		SUM		
	Number of study hours	30		3.0		17.0		50	
Subject objectives	Acquiring the ability to apply innovative technologies in the design of the built environment								
Learning outcomes	Course out	Subject outcome			Method of verification				
	[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			[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge			
	[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					[SW2] Assessment of knowledge contained in presentation			

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Innovative materials and technologies and their applications  Smartmaterials: nanomaterials, phase-change materials, high-performance materials  Building materials and technologies in an environmental aspect. Energy neutral architecture  Intelligent components and systems in architecture, intelligent environments. Scenarios for the future  Prerequisites  and co-requisites  Subject passing criteria  Subject passing criteria  Passing threshold  Percentage of the final grade  completion of the tasks  100.0%  Assessment methods  and Technology for Progressive Practice and Research, 2016  Assessment in Information Materials: Smart Materials for Adaptive  Architecture, 2017  Wysook M., Kabrońska J.: Nove technologie v architecture.  Sobeticaria rola technologii [Int] Wybrane problemy prosubudowy obstektor prosubudowy obstektor problemy prosubudowy obstektor budowlanych, ed. Janowicz  Information Resources Management Association: Smart Cities and Smart Spaces: Concepts, Methodologies, Tools, and Applications, 2019  Information Resources Management Association: Smart Cities and Smart Spaces: Concepts, Methodologies, Tools, and Applications, 2019  Information Resources Management Association: Smart Cities and Smart Spaces: Concepts, Methodologies, Tools, and Applications, 2019  Information Resources Management Association: Smart Cities and Smart Spaces: Concepts, Methodologies, Tools, and Applications, 2019  Information Resources Management Association: Smart Cities and Smart Spaces: Concepts, Methodologies, Tools, and Applications, 2019  Information Resources Management Association: Smart Cities and Smart Spaces: Concepts,	Subject contents		New technologies in architecture: introduction, concept and role of technology. Social aspects of echnological change: Actor-Network Theory						
Building materials and technologies in an environmental aspect. Energy neutral architecture Intelligent components and systems in architecture, intelligent environments. Scenarios for the future made and co-requisites and co-requisites and co-requisites and co-requisites.    Subject passing criteria   Passing threshold   Percentage of the final grade completion of the tasks   100.0%   100.0%   100.0%		Innovative materials and technologies and their applications							
Intelligent components and systems in architecture, intelligent environments. Scenarios for the future   Prerequisites and co-requisites		Smartmaterials: nanomaterials, phase-change materials, high-performance materials							
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and criteria    Completion of the tasks   100.0%   100.0%   100.0%	•								
Recommended reading  Basic literature  Aksamija A.: Integrating Innovation in Architecture: Design, Methods and Technology for Progressive Practice and Research, 2016  Kretzer M.: Information Materials: Smart Materials for Adaptive Architecture, 2017  Wysocki M., Kabrońska J.: Nowe technologie w architecture. Sopieczna rola technologii in Ini Wybrane problemy przebudowy objektów budowlanych, ed. Janowicz R., Przewłócki J., pp.  Supplementary literature  Beaurogand R.: Wo Blame the Building! The Architecture of Distributed Responsibility. International Journal of Urban and Regional Research, 39 (3), pp. 53349, 2015  De Munck B.: Re-assembling Actor-Network Theory and urban history. Urban History, 44(1), pp. 111-122, 2017. doi:10.1017/S0663326816000298  Information Resources Management Association: Smart Cities and Smart Spaces: Concepts, Methodologies, Tools, and Applications, 2019  Kabrońska J., Sztafrowski M.: Innovacojne technologie w architekturze jako narzędzie polepszenia jakości energetycznej budynków lin.] Wybrane problemy przebudowy obiektów budowlanych, ed. Janowicz R., Przewkócki J., pp. 127-136, 2016  Kabrońska J., Wysocki M.: The adaptability of architecture-Environment: the godies, pp. 313-156, 2018  Kabrońska J., Wysocki M.: The adaptability of architecture objects in contemporary design [in.] Object-Architecture-Environment: the godies, pp. 313-316, 2018  Latour B., Vaneva A.: Give Me a Gun and I Will Make All Buildings Move: An ANTs View of Architecture, 2008  Wilethoff A., Hussmann H.: Media Architecture: Using Information and Media As Construction Material, 2017  eResources addresses  Adresy na platformie eNauczanie:  Example issues/ example questions/ tasks being completed	Assessment methods	Subject passing criteria	Passing threshold	Percentage of the final grade					
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Architecture, 2017  Wysocki M., Kabrońska J.: Nowe technologie w architekturze. Społeczna rola technologii [In:] Wybrane problemy przebudowy obiektów budowlanych, ed. Janowicz R., Przewidcki J., pp. 127-136, 2016  Supplementary literature  Beauregard R.: We Biame the Building! The Architecture of Distributed Responsibility. International Journal of Urban and Regional Research, 39 (3), pp. 53349, 2015  De Munck B.: Re-assembling Actor-Network Theory and urban history. Urban History, 44(1), pp. 111-122, 2017. doi:10.1017/ S0963926816000298  Information Resources Management Association: Smart Cities and Smart Spaces: Concepts, Methodologies, Tools, and Applications, 2019  Kabrońska J., Sztafrowski M.: Innowacyjne technologie w architekturze jako narzedzie polepszenia jakości energetycznej budyńków [In:] Wybrane problemy przebudowy obiektów budowlanych, ed. Janowicz R., Przewłocki J., pp. 127-136, 2016  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  Latour B., Yaneva A.: Give Me a Gun and I Will Make All Buildings Move: An ANTs View of Architecture; 2008  Wiethoff A., Hussmann H.: Media Architecture: Using Information and Media As Construction Material, 2017  eResources addresses  Adresy na platformie eNauczanie:  Example issues/ example questions/ tasks being completed	Recommended reading	<u> </u>	Aksamija A.: Integrating Innovation in Architecture: Design, Methods						
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Smart Spaces: Concepts, Methodologies, Tools, and Applications, 2019  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  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  Latour B., Yaneva A.: Give Me a Gun and I Will Make All Buildings Move: An ANTs View of Architecture, 2008  Wiethoff A., Hussmann H.: Media Architecture: Using Information and Media As Construction Material, 2017  eResources addresses  Adresy na platformie eNauczanie:  Example issues/ example questions/ tasks being completed			Urban History, 44(1), pp. 111-122, 2017. doi:10.1017/						
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