



Subject card

Subject name and code	Building physics, PG_00061548						
Field of study	Building physics						
Date of commencement of studies	October 2025		Academic year of realisation of subject			2027/2028	
Education level	first-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	3		Language of instruction			English	
Semester of study	5		ECTS credits			2.0	
Learning profile	general academic profile		Assessment form			assessment	
Conducting unit	Department of Safety Architecture -> Faculty of Architecture -> Wydziały Politechniki Gdańskiej						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. arch. Joanna Kabrońska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	5.0	25.0	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	The student recognizes the basic physical processes in buildings and the relationship between the building and the environment.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W01] knows and understands construction problems, building and engineering issues related to building design; principles, solutions, constructions and building materials used in simple engineering tasks in the field of architectural and urban design		knows and understands the issues of building physics, including key issues in architectural design; understands physical phenomena occurring in buildings and between the building and the environment, including issues of heat and moisture, and knows the principles of design that will reduce energy consumption of the building and enable a proper microclimate in the building.		[SW1] Ocena wiedzy faktograficznej		
	[K6_U04] is able to use analytical methods to formulate and solve project tasks		is able to use analytical methods to formulate and solve design tasks in the field of building physics		[SU1] Ocena realizacji zadania [SU2] Ocena umiejętności analizy informacji		

Subject contents	Lectures: 1. Architecture and climate. Energy quality. Energy: introduction 2. Physical phenomena in buildings: basics of heat transfer theory 3. Inhomogeneous layers and thermal bridges 4. Humidity and moisture protection 5. Energy performance. Requirements. Certification Tutorials: 1. Thermal and moisture properties of building elements 2. Evaluation of building elements in terms of energy efficiency		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Test	51.0%	30.0%
	Calculation task	51.0%	70.0%
Recommended reading	Basic literature	Alsabry A., Szymański K.: Fizyka ciepła budowli dla architektów, 2025 Kaliszuk-Wietecha A.: Budownictwo zrównoważone. Wybrane zagadnienia z fizyki budowli, 2017	
	Supplementary literature	Trogal K., Bauman I., Lawrence R., Petrescu D. (ed.): Architecture and Resilience. Interdisciplinary Dialogues, 2019 La Roche P.: Carbon-Neutral Architectural Design, 2017 Naboni E., Havinga L. (ed.): Regenerative Design in Digital Practice. A Handbook for the Built Environment, 2019 Eames M. (ed.): Retrofitting Cities for Tomorrows World, 2018 Lehmann S.: Urban Regeneration. A Manifesto for transforming UK Cities in the Age of Climate Change, 2019 Delgado Ramos G. C.: Climate Change-Sensitive Cities: Building Capacities for Urban Resilience, Sustainability & Equity, 2017	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Calculate the hygrothermal properties of building partitions (various types of envelopes) and verify their compliance with current requirements. Evaluate the impact of thermal bridges on the partition		
Practical activities within the subject	Not applicable		

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