



Subject card

Subject name and code	Building physics, PG_00061548						
Field of study	Architecture						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2028/2029		
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 -> Faculties of Gdańsk University of Technology						
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_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			[SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment		
	[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] Assessment of factual knowledge		

Subject contents	<p>Course content – lecture</p> <p>Lectures:</p> <ol style="list-style-type: none"> 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 <p>Tutorials:</p> <ol style="list-style-type: none"> 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	<table border="1"> <thead> <tr> <th data-bbox="456 864 794 891">Subject passing criteria</th> <th data-bbox="799 864 1137 891">Passing threshold</th> <th data-bbox="1142 864 1469 891">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 898 794 925">Calculation task</td> <td data-bbox="799 898 1137 925">51.0%</td> <td data-bbox="1142 898 1469 925">70.0%</td> </tr> <tr> <td data-bbox="456 931 794 958">Test</td> <td data-bbox="799 931 1137 958">51.0%</td> <td data-bbox="1142 931 1469 958">30.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Calculation task	51.0%	70.0%	Test	51.0%	30.0%
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Calculation task	51.0%	70.0%										
Test	51.0%	30.0%										
Recommended reading	Basic literature	<p>Alsabry A., Szymański K.: Fizyka cieplna budowli dla architektów, 2025</p> <p>Kaliszuk-Wietecha A.: Budownictwo zrównoważone. Wybrane zagadnienia z fizyki budowli, 2017</p>										
	Supplementary literature	<p>Trogal K., Bauman I., Lawrence R., Petrescu D. (ed.): Architecture and Resilience. Interdisciplinary Dialogues, 2019</p> <p>La Roche P.: Carbon-Neutral Architectural Design, 2017</p> <p>Naboni E., Havinga L. (ed.): Regenerative Design in Digital Practice. A Handbook for the Built Environment, 2019</p> <p>Eames M. (ed.): Retrofitting Cities for Tomorrows World, 2018</p> <p>Lehmann S.: Urban Regeneration. A Manifesto for transforming UK Cities in the Age of Climate Change, 2019</p> <p>Delgado Ramos G. C.: Climate Change-Sensitive Cities: Building Capacities for Urban Resilience, Sustainability & Equity, 2017</p>										
	eResources addresses											
Example issues/ example questions/ tasks being completed	<p>Calculate the hygrothermal properties of building partitions (various types of envelopes) and verify their compliance with current requirements.</p> <p>Evaluate the impact of thermal bridges on the partition</p>											
Practical activities within the subject	Not applicable											

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