GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Building physics, PG_00061548		
Field of study	Building physics		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2025/2026
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	blended-learning
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 Technical Fundamentals of Architectural Design -> Faculty of Architecture -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. arch. Joanna Kabrońska	
	Teachers	dr inż. arch. Joanna Kabrońska	

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: 5.0

eNauczanie source addresses:

Moodle ID: 1089 Building Physics 2025/2026
https://enauczanie.pg.edu.pl/2025/course/view.php?id=1089

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] Ocena umiejętności analizy informacji [SU1] Ocena realizacji zadania
[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. The student has knowledge of the mechanism of sound and vibration transmission in buildings and noise propagation in open space, and identifies the parameters and technical information relating to acoustical characteristics of building materials and acoustical requirements of buildings contained in the standards and professional literature.	[SW2] Ocena wiedzy zawartej w prezentacji [SW1] Ocena wiedzy faktograficznej

<table>
<tr><td>Subject contents</td><td>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. Relationship between the building and the environment - various aspects

2. Thermal and moisture properties of building elements</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Calculation task</td><td>100.0%</td><td>50.0%</td></tr>
<tr><td>Test</td><td>51.0%</td><td>30.0%</td></tr>
<tr><td>Presentation</td><td>100.0%</td><td>20.0%</td></tr>
</table>
</td></tr>
<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>Kaliszuk-Wietecka A.: Budownictwo zrównoważone. Wybrane zagadnienia z fizyki budowli, 2017

Geryło R.: Nowoczesny standard energetyczny budynków, 2015</td></tr>
<tr><td>Supplementary literature</td><td>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 Capacitites for Urban Resilience, Sustainability & Equity, 2017</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>Calculate hygrothermal properties of building elements (different types)</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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