GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

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|---|---|---|---|
| Subject name and code | Physics of Building Structures II , PG_00044327 | | |
| Field of study | Civil Engineering | | |
| Date of commencement of studies | October 2022 | Academic year of realisation of subject | 2023/2024 |
| Education level | second-cycle studies | Subject group | Optional subject group |
| Mode of study | Part-time studies | Mode of delivery | at the university |
| Year of study | 2 | Language of instruction | Polish |
| Semester of study | 3 | ECTS credits | 2.0 |
| Learning profile | general academic profile | Assessment form | assessment |
| Conducting unit | Department of Building Structures and Material Engineering -> Faculty of Civil and Environmental Engineering | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | mgr inż. Sławomir Dobrowolski | |
| | Teachers | mgr inż. Sławomir Dobrowolski | |

**Lesson types and methods of instruction**

| Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|
| Number of study hours | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15 |

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 | 15 | 5.0 | 30.0 | 50 |

**Subject objectives**

Learning the principles of ensuring thermal and humidity comfort. Basics of designing almost zero-energy and passive buildings. Moisture related problems. Thermal and humidity diagnostics of buildings. Fundamentals of acoustics.

**Learning outcomes**

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [K7_W09] knows advanced methods of building physics with applications in heat and moisture migration in buildings, energy demand for buildings and its acoustics | Understanding and mastering the processes of heat and mass transfer at an extended level. The influence of these processes on the level of energy efficiency of buildings. Getting to know the principles of thermal and humidity diagnostics of buildings. Understands the basic concepts of building acoustics. | |
| [K7_W01] has knowledge of higher mathematics, physics and chemistry, which is a base of subjects, such as construction theory and advanced material technology | The ability to apply the basics of thermodynamics to the assessment of heat and mass transfer processes in buildings. | |
| [K7_U12] can calculate and analyse the energy balance of a building | Ability to verify the energy balance of the building and mass flow calculations. | |

**Subject contents**

Thermal and humidity comfort in buildings. General principles for the design, construction and commissioning of nearly zero-energy and passive buildings. Damp in buildings. Methods of analyzing the movement of moisture in buildings. Basic issues of building acoustics. Basics of thermal and humidity diagnostics of buildings.

**Prerequisites and co-requisites**

Basic building physics course.

**Assessment methods and criteria**

| Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|
| Passing test | 60.0% | 100.0% |

**Recommended reading**

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| Basic literature | Each textbook containing a description of issues in the field of building physics as well as thermal and humidity diagnostics. |
| Supplementary literature | Each textbook containing a description of issues in the field of building physics as well as thermal and humidity diagnostics. |

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| | eResources addresses | Adresy na platformie eNauczanie:<br>Fizyka Budowli II NS - 2023/2024 - Moodle ID: 34405<br>https://enauczanie.pg.edu.pl/moodle/course/view.php?id=34405 |
| Example issues/ example questions/ tasks being completed | | |
| Work placement | Not applicable | |