

COURSE SYLLABUS

Course code	1080-BU200-ISA-0202
Course name	Building Materials I
Course version	2026L
Level of education	first cycle programme
Form and mode of study	full-time study
Study profile	general academic profile
Field of study	Civil Engineering
Specialisation	-
Organizational unit	The Faculty of Civil Engineering
Implementing unit	The Faculty of Civil Engineering
Course unit	n/a
Course groups	-
Course status	Obligatory
Language of the course	English
Study stage code	BU000-S2-ISA-1080
Number of ECTS credits	4

Part I**01. Learning outcomes and the method of conducting classes**

Learning outcomes	see table "Learning outcomes"
Forms of classes and the number of hours in the semester	
laboratory	30,00 h
lectures	20,00 h

02. ECTS balance

Number of ECTS credits	4
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Course workload	Hours	ECTS
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Total number of hours and ECTS credits for the course:

Hours and ECTS credits for courses involving direct participation of academic teachers	50	2,00
Hours and ECTS credits involving student's independent work	50	2,00
Total	100	4,00

Number of hours involving direct participation of academic teachers:

Hours connected with class participation	50
Other synchronous hours	0
Total	50

Number of hours involving student's independent work:

Hours for student's independent work	50
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03. Course content

Part I	
Course content	Basic information on standardization and legislation regulating issues of building materials and products in Poland and the EU. General classification of building materials. Properties and quality control of building materials and products. Certification of building products. Declaration of conformity. Methods for testing materials and products. Durability of building materials. Types of materials: Stone materials, building ceramics, wood, asphalts, and waterproofing materials, thermal insulation materials, acoustic insulation materials, metals, plastics. Testing of functional properties of building materials: physical properties (structure description, moisture and temperature interactions), mechanical properties (strength tests, impact resistance, hardness), technological properties (asphalts, paints), testing of technical characteristics of glass, ceramic, wooden, and stone products: Shape and dimensions, defects, load-bearing capacity vs. strength properties, specific features related to material type. Principles of preparing technical documentation for laboratory tests.

Table: Learning outcomes	
Knowledge	
Outcomes code	W1
Description	A graduate knows and understands the basic properties of building materials and products, their classification, and testing methods, taking into account the most important technical aspects as well as aspects related to sustainable development and the pursuit of low emissions
Related field-of-study learning outcomes	K1_W06
Skills	
Outcomes code	U1
Description	A graduate is able to plan and conduct simple laboratory experiments in the field of testing building materials and products, using construction standards, building law regulations, and other legal acts related to construction.
Related field-of-study learning outcomes	K1_U02
Outcomes code	U2
Description	Is able to collaborate with other students in team projects related to conducting research and preparing a report on its results
Related field-of-study learning outcomes	K1_U24
Social competence	
Outcomes code	K1
Description	A graduate is ready to identify material-related aspects in the pursuit of sustainable development in construction.
Related field-of-study learning outcomes	K1_K04, K1_K08

Part II	
04. Year and semester of studies	
Year	2026L
Semester	2
05. Course leader and course teachers	
Course leader	Piotr Woyciechowski
laboratory	Piotr Woyciechowski
lectures	Piotr Woyciechowski
06. Course objective	

Part II	
Course objective	Understanding the properties and technologies of production and application of building materials; knowledge of the scope of use of building materials and the principles of quality control of construction materials and products. Ability to test and assess selected performance characteristics of building materials and construction products.
07. Teaching methods and techniques	
laboratory	Laboratory classes, testing and measurements, data analysis, reports.
lectures	Lecture with multimedia presentation, analysis of examples, work with electronic documents.
08. Methods of verifying learning outcomes	
Knowledge	
Outcomes code	W1
Description	A graduate knows and understands the basic properties of building materials and products, their classification, and testing methods, taking into account the most important technical aspects as well as aspects related to sustainable development and the pursuit of low emissions
Verification methods	lectures: written test laboratory: written test laboratory: written report
Skills	
Outcomes code	U1
Description	A graduate is able to plan and conduct simple laboratory experiments in the field of testing building materials and products, using construction standards, building law regulations, and other legal acts related to construction.
Verification methods	lectures: written test laboratory: written test laboratory: written report
Outcomes code	U2
Description	Is able to collaborate with other students in team projects related to conducting research and preparing a report on its results
Verification methods	laboratory: written report
Social competence	
Outcomes code	K1
Description	A graduate is ready to identify material-related aspects in the pursuit of sustainable development in construction.
Verification methods	lectures: written test laboratory: written test laboratory: written report
09. Required and recommended reading list	
Required reading	1. Fujiwara A. (ed.), Sustainable Building Materials and Technologies, Trans Tech Publications, 2024. 2. Namazov S. et al. (eds.), Structural Metals and Building Materials, Trans Tech Publications, 2024.
Recommended reading	1. Sugianto S. et al. (eds.), Sustainable and High-Performance Building Materials, Trans Tech Publications, 2024. 2. Kitisatorn W. et al. (eds.), Pollutants Absorption, High-Performance Building Materials and Sustainability, Trans Tech Publications, 2024.
10. Other information	
Other information	In accordance with the Course Regulations.