

COURSE SYLLABUS

Course code	1080-BU200-ISA-0403
Course name	Fundamentals of Building with Sustainable Development and Circular Economy
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	2

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	
lectures	15,00 h
project	10,00 h

02. ECTS balance

Number of ECTS credits	2	
Course workload	Hours	ECTS
Total number of hours and ECTS credits for the course:		
Hours and ECTS credits for courses involving direct participation of academic teachers	27	1,08
Hours and ECTS credits involving student's independent work	23	0,92
Total	50	2,00
Number of hours involving direct participation of academic teachers:		
Hours connected with class participation	25	
Other synchronous hours	2	
Total	27	
Number of hours involving student's independent work:		
Hours for student's independent work	23	

03. Course content

Part I

Course content	Principles of sustainable development in construction, building energy efficiency, passive buildings, low-carbon buildings, design of buildings according to the principles of circular economy, principles of demolition and disposal of construction waste. Definition of structural system. Spatial stiffness of a building. Basic structural systems and load-bearing systems of buildings. Foundations of buildings. Walls - load-bearing, masonry walls made of bricks, cellular concrete, concrete and ceramic blocks, layered walls, partition walls, columns (pillars), principles of brick bonding in masonry, ventilation, flue and smoke ducts, external curtain walls, wooden walls - beam and log. Light partition walls - including "dry" space development. Ceilings made of wood, on steel beams, ribbed, reinforced concrete.
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Table: Learning outcomes

Knowledge	
Outcomes code	W1
Description	The student is familiar with the basic terms, problems and definitions related to civil engineering, the principles of sustainable development in construction and circular economy, the design principles of structural systems and building structural elements, their function in the building.
Related field-of-study learning outcomes	K1_W15, K1_W16, K1_W17, K1_W24, K1_W34
Skills	
Outcomes code	U1
Description	The student is able to design the object and make its structural drawings with the use of CAD software, using the standards and regulations of the construction law, and present them in the form of a documentation.
Related field-of-study learning outcomes	K1_U11, K1_U15, K1_U18, K1_U23
Social competence	
Outcomes code	K1
Description	The student aims for sustainable development in construction including the initiation of actions in its field for the public interest. The student is ready to meet social responsibilities resulting both from the sustainability aspiration and from his/ her function in the construction industry. The student is ready to critically evaluate his knowledge.
Related field-of-study learning outcomes	K1_K01, K1_K04, K1_K05, K1_K08

Part II**04. Year and semester of studies**

Year	2026L
Semester	2

05. Course leader and course teachers

Course leader	Wojciech Terlikowski
project	Ewa Sobczyńska
lectures	Kacper Wasilewski
project	Kacper Wasilewski
lectures	Ewa Sobczyńska

06. Course objective

Course objective	In according to the course regulations
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07. Teaching methods and techniques

lectures	In accordance with the Course Regulations.
project	In accordance with the Course Regulations.

08. Methods of verifying learning outcomes

Part II	
Knowledge	
Outcomes code	W1
Description	The student is familiar with the basic terms, problems and definitions related to civil engineering, the principles of sustainable development in construction and circular economy, the design principles of structural systems and building structural elements, their function in the building.
Verification methods	in accordance with the Course Regulations
Skills	
Outcomes code	U1
Description	The student is able to design the object and make its structural drawings with the use of CAD software, using the standards and regulations of the construction law, and present them in the form of a documentation.
Verification methods	in accordance with the Course Regulations
Social competence	
Outcomes code	K1
Description	The student aims for sustainable development in construction including the initiation of actions in its field for the public interest. The student is ready to meet social responsibilities resulting both from the sustainability aspiration and from his/ her function in the construction industry .The student is ready to critically evaluate his knowledge.
Verification methods	in accordance with the Course Regulations
09. Required and recommended reading list	
Required reading	In accordance with the Course Regulations.
Recommended reading	In accordance with the Course Regulations.
10. Other information	
Other information	In accordance with the Course Regulations.