



COURSE SPECIFICATION

Course code	B2-2-TiOB-008
Course title in Polish	Analiza awarii budowlanych
Course title in English	Building failure analysis
Valid from academic year	2019/2020

CURRICULAR ALIGNMENT

Programme	CIVIL ENGINEERING
Level	second-cycle
Programme profile	academic
Mode of attendance	full-time
Specialism	Construction Technology and Management
Academic unit responsible for the course	Department of Construction Technology and Management
Course coordinator	Dr hab. inż. Ryszard Dachowski, prof. PŚk.
Approved by	prof. dr hab. inż. Marek Iwański

COURSE DESCRIPTION

Teaching block	major
Course status	required
Language of instruction	Polish
Semester of delivery	semester II
Prerequisites	-
Exam (YES/NO)	NO
ECTS	2

Mode of teaching	lecture	class	lab	project	seminar
Number of hours per semester	30				

LEARNING OUTCOMES

Category	Code	Learning outcomes	Corresponding programme outcome code
Knowledge	W01	Students know the principles, methods of diagnosis and methods of assessing the condition of structures.	B2_W19

	W02	Students know the causes of damage and wear of structures.	B2_W19
Skills	U01	Students can evaluate the defects in buildings and structures.	B2_U17
	U02	Students can perform diagnostic tests on existing structures.	B2_U17

COURSE CONTENT

Teaching mode*	Topics covered
lecture	<ol style="list-style-type: none"> 1 Legal issues pertaining to the maintenance and durability of structures. 2 Reliability of building structures. 3 Causes of structural wear. 4. Building disasters, failures, and damage to structures - statistics on causes, characteristic failures. 5. Causes of failure and damage to structure's foundation, masonry structures, reinforced concrete structures, steel structures, finishing. 6. Corrosion and erosion of structures. 7 Diagnostics - principles and methods for assessing the condition of structures. 8. Testing the strength and uniformity of concrete in structures. 9. Testing reinforcement in reinforced concrete structures 10. Assessment of defects in building elements. 11. Assessment of concrete moisture in structures. 12. Thermal insulation tests. 13. Testing of acoustic insulation of building partitions. 14. Mycological tests.

METHODS OF LEARNING OUTCOMES VERIFICATION

Learning outcome	Learning outcome verification methods					
	Oral exam	Written exam	Test	Project	Report	Other
W01			X			
W02			X			
U01			X			
U02			X			

ASSESSMENT

Teaching mode*	Assessment type	Criteria
lecture	mark-based	At least 50% of points on the final test.

STUDENT WORKLOAD

ECTS weighting							
	Activities	Student workload					Unit
		W	C	L	P	S	h
1.	Scheduled contact hours	30					
2.	Other (office hours, exams)	2					h
3.	Total number of contact hours	32					h
4.	Number of ECTS credits for contact hours	1,28					ECTS
5.	Independent study hours	20					h
6.	Number of ECTS credits for independent study	0,80					ECTS
7.	Practical hours	0					h
8.	Number of ECTS credits for practical hours	0					ECTS
9.	Total workload	52					h
10.	ECTS credits for the course <i>1 ECTS credit =25 student learning hours</i>	2					ECTS

READING LIST

1. Czarnecki L., Emmons P. H.: Naprawa i ochrona konstrukcji betonowych. Wydawnictwo Polski Cement. Kraków 2002
2. Masłowski E., Spiżewska D.: Wzmacnianie konstrukcji budowlanych, Arkady 2000.
3. Mitzel A., Stachurski W., Suwalski J.: Awarie konstrukcji betonowych i murowych, Arkady. Warszawa 1987.
4. Piśmiennictwo dotyczące tematyki np. Inżynieria i Budownictwo, Materiały Budowlane, Przegląd Budowlany, materiały konferencyjne: Awarie budowlane, Warsztat Rzeczoznawcy Budowlanego.
5. Runkiewicz L.: Diagnostyka i wzmacnianie konstrukcji żelbetowych, Cz.1. Diagnostyka, Politechnika Świętokrzyska, Kielce 1999.
6. Thierry J., Zalewski S.: Remonty budynków i wzmocnienia konstrukcji, Arkady 1982.
7. Zalewski S. i inni.: Poradnik. Remonty i modernizacja budynków mieszkalnych. Arkady 1987.