

POLITECHNIKA KRAKOWSKA IM. TADEUSZA KOŚCIUSZKI

KARTA PRZEDMIOTU

obowiązuje studentów rozpoczynających studia w roku akademickim 2023/2024

Wydział Inżynierii Lądowej

Kierunek studiów: Budownictwo

Profil: Ogólnoakademicki

Forma studiów: stacjonarne

Kod kierunku: BUD

Stopień studiów: II

Specjalności: Structural Design and Management in Civil Engineering (profile: Construction Technology and Management)

1 INFORMACJE O PRZEDMIOCIE

NAZWA PRZEDMIOTU	Technologia robót remontowych i rozbiórkowych
NAZWA PRZEDMIOTU W JĘZYKU ANGIELSKIM	Technology of Renovation and Demolition Works
KOD PRZEDMIOTU	WIL BUD oIIS D17 23/24
KATEGORIA PRZEDMIOTU	Specialty subjects (profile: Construction Technology and Management)
LICZBA PUNKTÓW ECTS	3.00
SEMESTRY	2

2 RODZAJ ZAJĘĆ, LICZBA GODZIN W PLANIE STUDIÓW

SEMESTR	WYKŁAD	ĆWICZENIA AUDYTORYJNE	LABORATORIA	LABORATORIA KOMPUTERO- WE	PROJEKTY	SEMINARIUM
2	15	0	0	0	15	0

3 CELE PRZEDMIOTU

Cel 1 To provide information related to technology of renovation works. To get students acquainted with various types of technologies of renovation works. To prepare students to solve problems within the field of renovation works.

Cel 2 To provide information related to technology of demolition works. To get students acquainted with various types of technologies of demolition works. To prepare students to solve problems within the field of demolition works.

4 WYMAGANIA WSTĘPNE W ZAKRESIE WIEDZY, UMIEJĘTNOŚCI I INNYCH KOMPETENCJI

1 Fulfilling the requirements as stated in law and regulations of studying at Cracow University of Technology. Completion of courses according to the sequence of learning at Faculty of Civil Engineering, Cracow University of Technology. Knowledge of technology of construction works.

5 EFEKTY KSZTAŁCENIA

EK1 Wiedza Selected aspects of knowledge within the field of technology of renovation works. Knowledge on the use of resources (labour, materials, machines) in renovation works.

EK2 Wiedza Selected aspects of knowledge within the field of technology of demolition works. Knowledge on the use of resources (labour, materials, machines) in demolition works.

EK3 Umiejętności Ability to solve selected problems within the field of technology of renovation and demolition works.

EK4 Kompetencje społeczne Ability to work in team, ability to work individually. Critical approach to own work and results of analyzes within the field of renovation and demolition works. Ability to discuss results of own or others work.

6 TREŚCI PROGRAMOWE

PROJEKTY		
LP	TEMATYKA ZAJĘĆ OPIS SZCZEGÓŁOWY BLOKÓW TEMATYCZNYCH	LICZBA GODZIN
P1	Introduction to design exercises within the field of renovation and demolition works.	1
P2	Design and presentation of a chosen aspect of renovation works - team or individual assignment.	7
P3	Analysis and presentation of a chosen aspect of demolition works - team or individual assignment.	7

WYKŁAD		
LP	TEMATYKA ZAJĘĆ OPIS SZCZEGÓŁOWY BLOKÓW TEMATYCZNYCH	LICZBA GODZIN
W1	Organisational matters and course description. Presentation of requirements to complete the course.	1

WYKŁAD		
LP	TEMATYKA ZAJĘĆ OPIS SZCZEGÓŁOWY BLOKÓW TEMATYCZNYCH	LICZBA GODZIN
W2	Introduction to technology of renovation works. Differences between renovation and current repair. Durability and service life in construction. Discussion of the possibilities of taking part in research within the field of technology of renovation works.	2
W3	Renovation technology of insulation works and layering of elements in the ground floor or basement area of the building and in places exposed to moisture.	2
W4	Renovation technology of structural elements including restoration or strengthening of their surfaces, support zones or replacement with a new element. Renovation technology of industrial floors operating in cracked condition.	3
W5	Introduction to technology of demolition works. Discussion of specific conditions of demolition works. Discussion of the possibilities of taking part in research within the field of technology of demolition works.	1
W6	Technology of manual demolition works. Discussion of tools and methods of manual demolition works	2
W7	Technology of mechanized demolition works. Discussion of machines, equipment and methods used in mechanized demolition works.	2
W8	Technology of explosive demolition methods. Discussion of explosive demolition methods.	2

7 NARZĘDZIA DYDAKTYCZNE

N1 Lectures, multimedia presentations

N2 Individual tasks and/or team tasks, assignments

N3 E-learning

8 OBCIĄŻENIE PRACĄ STUDENTA

FORMA AKTYWNOŚCI	ŚREDNIA LICZBA GODZIN NA ZREALIZOWANIE AKTYWNOŚCI
Godziny kontaktowe z nauczycielem akademickim, w tym:	
Godziny wynikające z planu studiów	30
Konsultacje przedmiotowe	0
Egzaminy i zaliczenia w sesji	4
Godziny bez udziału nauczyciela akademickiego wynikające z nakładu pracy studenta, w tym:	
Przygotowanie się do zajęć, w tym studiowanie zalecanej literatury	15
Opracowanie wyników	15
Przygotowanie raportu, projektu, prezentacji, dyskusji	20
SUMARYCZNA LICZBA GODZIN DLA PRZEDMIOTU WYNIKAJĄCA Z CAŁEGO NAKŁADU PRACY STUDENTA	84
SUMARYCZNA LICZBA PUNKTÓW ECTS DLA PRZEDMIOTU	3.00

9 SPOSOBY OCENY

OCENA FORMUJĄCA

F1 Design exercises: individual or team tasks

OCENA PODSUMOWUJĄCA

P1 Final test

WARUNKI ZALICZENIA PRZEDMIOTU

W1 Completion of all tasks and assignments within the deadlines

W2 Positive final test grade

KRYTERIA OCENY

EFEKT KSZTAŁCENIA 1	
NA OCENĘ 2.0	x

NA OCENĘ 3.0	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>
NA OCENĘ 3.5	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>

NA OCENĘ 4.0	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>
NA OCENĘ 4.5	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>

NA OCENĘ 5.0	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>
EFEKT KSZTAŁCENIA 2	
NA OCENĘ 2.0	x
NA OCENĘ 3.0	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>

NA OCENĘ 3.5	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>
NA OCENĘ 4.0	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>

NA OCENĘ 4.5	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>
NA OCENĘ 5.0	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>
EFEKT KSZTAŁCENIA 3	
NA OCENĘ 2.0	x

NA OCENĘ 3.0	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>
NA OCENĘ 3.5	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>

NA OCENĘ 4.0	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>
NA OCENĘ 4.5	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>

NA OCENĘ 5.0	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>
EFEKT KSZTAŁCENIA 4	
NA OCENĘ 2.0	x
NA OCENĘ 3.0	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>

NA OCENĘ 3.5	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>
NA OCENĘ 4.0	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>

NA OCENĘ 4.5	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>
NA OCENĘ 5.0	<p>Student is able to give definitions of technology of renovation works. Student is able to give definition of demolition works. Student is able to explain and discuss the role of technology of renovation and demolition works. Student is able to explain technological processes in terms of renovation works and demolition works. Student is able to analyse processes of renovation works. Student is able to analyse processes of demolition works. Student is able to mention and discuss applicability of tools, materials, construction machines and equipment for renovation and demolition works. Student is able to provide analyses and/or computations necessary for selection of resources (labour, materials, equipment and machines) needed for execution of assumed scope of renovation and demolition works. Student is able to mention and discuss applicability of systems and solutions specific for various types of renovation works. Student is able to mention, discuss and explain solutions applicable for demolition works. Student is able to present, explain and discuss issues related to renovation works and demolition works. Student is able to solve problems and tasks related to renovation works and demolition works. Student is able to present and discuss aspects related to occupational health and safety in renovation works and demolition works.</p>

10 MACIERZ REALIZACJI PRZEDMIOTU

EFEKT KSZTAŁCENIA	ODNIESIENIE DANEGO EFEKTU DO SZCZEGÓŁOWYCH EFEKTÓW ZDEFINIOWANYCH DLA PROGRAMU	CELE PRZEDMIOTU	TREŚCI PROGRAMOWE	NARZĘDZIA DYDAKTYCZNE	SPOSOBY OCENY
EK1		Cel 1	p1 p2 w1 w2 w3 w4	N1 N2 N3	F1 P1

EFEKT KSZTAŁCENIA	ODNIESIENIE DANEGO EFEKTU DO SZCZEGÓŁOWYCH EFEKTÓW ZDEFINIOWANYCH DLA PROGRAMU	CELE PRZEDMIOTU	TREŚCI PROGRAMOWE	NARZĘDZIA DYDAKTYCZNE	SPOSOBY OCENY
EK2		Cel 2	p1 p2 p3 w1 w5 w6 w7 w8	N1 N3	F1 P1
EK3		Cel 1 Cel 2	p1 p2 p3 w1 w2 w3 w4 w5 w6 w7 w8	N1 N2 N3	F1 P1
EK4		Cel 1 Cel 2	p1 p2 p3 w1 w2 w3 w4 w5 w6 w7 w8	N1 N2 N3	F1 P1

11 WYKAZ LITERATURY

LITERATURA PODSTAWOWA

- [1] | **P. C. VARGHESE** — *MAINTENANCE, REPAIR & REHABILITATION AND MINOR WORKS OF BUILDINGS*, -, 2014, PHI Learning
- [2] | **R. J. Diven, M. Shaurette** — *Demolition: Practices, Technology, and Management*, -, 2010, Purdue University Press
- [3] | **Thierry J., Zaleski S.** — *Remonty budynków i wzmacnianie konstrukcji*, Warszawa, 1982, Arkady
- [4] | **Małyszko L., Orłowicz R.** — *Konstrukcje murowe: zarysowania i naprawy*, Wydaw. Uniwersytetu Warmińsko-Mazurskiego, 2000, Wydaw. Uniwersytetu Warmińsko-Mazurskiego
- [5] | **Grantham M.G.** — *Concrete Repair. A practical guide*, -, 2011, Taylor and Francis
- [6] | **Margazyn A., Rawska-Skotniczy A.** — *Rozbiórki budynków i budowli*, Warszawa, 2016, PWN

12 INFORMACJE O NAUCZYCIELACH AKADEMICKICH

OSOBA ODPOWIEDZIALNA ZA KARTĘ

dr inż. Michał Juszczyk (kontakt: mjuszczuk@L7.pk.edu.pl)

OSOBY PROWADZĄCE PRZEDMIOT

- 1 dr hab inż. Michał Juszczyk (kontakt: mjuszczuk@L7.pk.edu.pl)
- 2 dr inż. Damian Wieczorek (kontakt: dwieczorek@L7.pk.edu.pl)
- 3 mgr inż. Patrycja Karcńska (kontakt: pkarcinska@L7.pk.edu.pl)
- 4 dr inż. Jarosław Malara (kontakt: jmalara@L7.pk.edu.pl)



13 ZATWIERDZENIE KARTY PRZEDMIOTU DO REALIZACJI

(miejscowość, data)

(odpowiedzialny za przedmiot)

(dziekan)

PRZYJMUJĘ DO REALIZACJI (data i podpisy osób prowadzących przedmiot)

.....
.....
.....
.....