

POLITECHNIKA KRAKOWSKA IM. TADEUSZA KOŚCIUSZKI

KARTA PRZEDMIOTU

obowiązuje studentów rozpoczynających studia w roku akademickim 2021/2022

Wydział Inżynierii Lądowej

Kierunek studiów: Budownictwo

Profil: Ogólnoakademicki

Forma studiów: stacjonarne

Kod kierunku: BUD

Stopień studiów: I

Specjalności: Bez specjalności - studia w języku angielskim

1 INFORMACJE O PRZEDMIOCIE

NAZWA PRZEDMIOTU	Chemia
NAZWA PRZEDMIOTU W JĘZYKU ANGIELSKIM	Chemistry
KOD PRZEDMIOTU	WIL BUD oIS B11 21/22
KATEGORIA PRZEDMIOTU	Przedmioty podstawowe
LICZBA PUNKTÓW ECTS	4.00
SEMESTRY	1 2

2 RODZAJ ZAJĘĆ, LICZBA GODZIN W PLANIE STUDIÓW

SEMESTR	WYKŁAD	ĆWICZENIA AUDYTORYJNE	LABORATORIA	LABORATORIA KOMPUTERO- WE	PROJEKTY	SEMINARIUM
1	15	0	0	0	0	0
2	0	0	30	0	0	0

3 CELE PRZEDMIOTU

Cel 1 Introducing basic terms concerning cohesion forces of homogeneous and heterogeneous materials.

Cel 2 Providing students with the problems of dispersed systems in civil engineering.

Cel 3 Providing students with surface phenomena and their significance in civil engineering.

Cel 4 Providing students with the issues of kinetics and chemical equilibrium of chemical reactions taking place while obtaining and applying building materials.

Cel 5 Gaining team work experience.

Cel 6 Preparing students for scientific practice

4 WYMAGANIA WSTĘPNE W ZAKRESIE WIEDZY, UMIEJĘTNOŚCI I INNYCH KOMPETENCJI

1 Basic knowledge of chemistry within the scope of the high school programme.

5 EFEKTY KSZTAŁCENIA

EK1 Wiedza A student describes basic notions concerning cohesive forces in homogeneous materials and dispersed systems.

EK2 Wiedza A student is able to define types of dispersed systems in civil engineering and describe their properties.

EK3 Wiedza A student is able to explain the importance of surface phenomena for durability of building materials.

EK4 Wiedza A student defines basic thermodynamic and kinetic quantities of reactions taking place in civil engineering and describes processes of concrete and steel corrosion.

EK5 Umiejętności A student is able to carry out the analysis of the usability of water used for civil engineering purposes and write down characteristic reactions connected with obtaining and application of building materials.

EK6 Wiedza A student knows selected processes concerning high-molecular compounds and discerns cement-polymeric systems.

EK7 Kompetencje społeczne A student is able to work in a team.

6 TREŚCI PROGRAMOWE

WYKŁAD		
LP	TEMATYKA ZAJĘĆ OPIS SZCZEGÓŁOWY BLOKÓW TEMATYCZNYCH	LICZBA GODZIN
W1	Cohesive forces of homogeneous and heterogonous materials. States of matter: characterization of liquids, structure of solids crystalline structures and their defects.	2
W2	Chemistry of metals. Basics of electrochemistry: electrolysis, cells. Corrosion of steel.	3
W3	Characterization and division of chemical reactions taking place in civil engineering. Kinetics and chemical equilibrium.	2
W4	Surface phenomena and their significance in civil engineering.	4
W5	Production and chemistry of mineral building materials, especially chemistry of binding materials. Corrosion of cement cpomosites.	2

WYKŁAD		
LP	TEMATYKA ZAJĘĆ OPIS SZCZEGÓŁOWY BLOKÓW TEMATYCZNYCH	LICZBA GODZIN
W6	Chemistry of polymers and bituminous materials.	1
W7	Macroscopic dispersion on the example of concrete and polymeric composites.	1

LABORATORIA		
LP	TEMATYKA ZAJĘĆ OPIS SZCZEGÓŁOWY BLOKÓW TEMATYCZNYCH	LICZBA GODZIN
L1	Naming laboratory equipment and inorganic compounds. Concentrations of solutions.	2
L2	Introduction to processes taking place in building materials.	4
L3	Production, setting and application of cement, lime and gypsum binders.	4
L4	Corrosion processes of cement materials.	4
L5	Corrosion of metals.	4
L6	Plastics in civil engineering.	4
L7	Additions and admixtures to mineral binders.	4
L8	Mixing water and concrete exposure classes.	4

7 NARZĘDZIA DYDAKTYCZNE

N1 Lectures

N2 Multimedia presentations

N3 Laboratory classes

N4 Consultations

N5 Others