

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	Geometria wykreślna
NAZWA PRZEDMIOTU W JĘZYKU ANGIELSKIM	Descriptive Geometry
KOD PRZEDMIOTU	WIL BUD oIS C15 21/22
KATEGORIA PRZEDMIOTU	Przedmioty kierunkowe
LICZBA PUNKTÓW ECTS	3.00
SEMESTRY	1

2 RODZAJ ZAJĘĆ, LICZBA GODZIN W PLANIE STUDIÓW

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

3 CELE PRZEDMIOTU

Cel 1 Ability to provide representation methods of three-dimensional(3D) objects on a two-dimensional (2D) plane

Cel 2 Ability to "read" 2D drawings and to provide their restitution into a 3D space

Cel 3 Ability to think in a 3D space and to analyse 3D relationships between spatial elements of the constructions.
Developing spatial visualization abilities.

Cel 4 Ability to communicate design ideas on the base of graphical representation of the designed structure

4 WYMAGANIA WSTĘPNE W ZAKRESIE WIEDZY, UMIEJĘTNOŚCI I INNYCH KOMPETENCJI

- 1 Knowledge of basic axioms and theorems of Euclidean geometry
- 2 Knowledge of basic planimetric constructions, ability to distinguish planimetric from stereometric representations
- 3 Ability to determine simple 2D and 3D objects

5 EFEKTY KSZTAŁCENIA

EK1 Wiedza Graduate will know the basic graphical representation methods applied for creating technical documentation of engineering design project.

EK3 Umiejętności Graduate will be able to communicate design ideas by using various projection methods to represent designed objects.

EK4 Umiejętności Graduate will be able to "read" technical drawings.

EK5 Kompetencje społeczne Graduate will gain ability to effectively communicate in a teamwork both at branch-works and at interdisciplinary communities.

6 TREŚCI PROGRAMOWE

WYKŁAD		
LP	TEMATYKA ZAJĘĆ OPIS SZCZEGÓŁOWY BLOKÓW TEMATYCZNYCH	LICZBA GODZIN
W1	Course Introduction & Objectives. Projective Space Definition. Infinite Elements in Projective Space. Projection methods classification and invariants. Multiview projection: U.S Standard and European standard (PN-EN ISO 5456-2: 2002).	3
W2	Mongean Projection Method. Point, line and plane representation. Auxiliary views. Perpendicularity. measuring distances, surface area and dihedral angles.	2
W3	Five Platonic solids - regular polyhedra and their properties.	1
W4	Axonometric projection: oblique and orthographic axonometry. Isometric projection (PN-EN ISO 5456-3:2002).	2
W5	Topographic projection. Point, line and plane representation. Application of the topographic mapping into the earth works. Cuts and fills around a road or a platform. Profile and cross-section construction. Roofs development.	3
W6	Perspective projection method: theory and application (PN-EN ISO 5456-4:2006).	2
W7	Surfaces of revolution and ruled surfaces applied in building constructions: cylinder of revolution, cone of revolution, parabolic - hyperboloid. Sphere and its sections with a plane.	2

PROJEKTY		
LP	TEMATYKA ZAJĘĆ OPIS SZCZEGÓŁOWY BLOKÓW TEMATYCZNYCH	LICZBA GODZIN
P1	Multiview projection: U.S Standard and European standard (PN-EN ISO 5456-2: 2002).	1
P2	Sketching as an indispensable element in engineering practice. Lines and curves freehand sketching. Tangential lines to circles. Construction of an ellipse, parabola, hyperbola.	2
P3	Mongean projection: points, lines and planes representation. Basic constructions. Auxiliary Views. True shape and size of plane and True length line. Dihedral angles.	2
P4	The five Platonic solids: a composition made of a tetrahedron, an octahedron and a cube. Designing and modeling.	2
P5	Axonometric projection: orthogonal axonometry of a designed composition of solids. Oblique axonometry of the same composition (PN-EN ISO 5456-3: 2002).	2
P6	Topographic projection. Designing of cuts and fills around a road/ platform construction. Roof design. True shape and size of a roof surface. Dihedral angle between the adjacent roof surfaces.	2
P7	Roof coverings: a rectilinear or a curvilinear patch of surface. 3D Visualization.	2
P8	Perspective projection: perspective drawing of the Platonic solids composition used within L4 (PN-EN ISO 5456-4:2006).	2

7 NARZĘDZIA DYDAKTYCZNE

N1 Wykłady

N2 Prezentacje multimedialne

N3 Ćwiczenia projektowe

N4 Zadania graficzne i modelowania przestrzennego

N5 Konsultacje