GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Descriptive Geometry , PG_00043984		
Field of study	Civil Engineering		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2025/2026
Education level	first-cycle studies	Subject group	
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	1	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department Of Mechanics Of Materials And Structures -> Faculty Of Civil And Environmental Engineering -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Bożena Kotarska-Lewandowska	
	Teachers		

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	15.0	0.0	15.0	0.0	45

E-learning hours included: 0.0

Learning activity and number of study hours

Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
Number of study hours	45	5.0	50.0	100

Subject objectives

The aim of the course is to equip the student in:
- knowledge of orthogonal, topographic and axonometric projections;
- skills of solving spatial problems in engineering practice.

Learning outcomes

Course outcome	Subject outcome	Method of verification

Subject contents

Orthographic projection, planes of reference. Invariants of parallel projections. Representation of geometric elements in the Monge projection, transformation, auxiliary views. Belonging and parallelism of points, lines and planes. Determination of common elements: piercing points, edges between planes. Operating on polyhedrons: piercing points, intersection lines and development of polyhedrons surfaces. Parameters and construction of ellipse, parabola and hyperbola. Surfaces: sphere, conics and cylinder. Intersection of surfaces and planes, intersection of surfaces. Topographic projection. Representation of points, lines and planes. Basic constructions: belonging and parallelism of geometric elements, intersection of elements. Edge and normal view of a plane. Topographic surfaces. Determination of embankment and cut planes along roads and squares. Axonometric projection. Plane of reference and property of axonometric projection. Orthogonal projection. Determination of shortenings of true lengths on orthographic axes. Oblique axonometric projection. Application of presented projection methods: construction of roofs and earth work along roads. Basic rules of perspective projection, one-point perspective.

Prerequisites and co-requisites

No requirements.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Test	40.0%	50.0%
Project	0.0%	10.0%
Drawing exercises	0.0%	40.0%

Recommended reading

Basic literature

1. KOTARSKA-LEWANDOWSKA B., CHRÓŚCIELEWSKI J. (red.praca zbiorowa): Materiały pomocnicze do wykładów i ćwiczeń z Geometrii Wykreślnej. Wersja elektroniczna do pobrania z portalu pg.edu.pl/enauczanie
2. KOTARSKA-LEWANDOWSKA B.: Geometria wykreślna. Zadania testowe. Wersja elektroniczna do pobrania z portalu pbc.
3. GROCHOWSKI B.: Elementy geometrii wykreślnej. PWN, Warszawa 2002.
4. OTTO F., OTTO E.: Podręcznik geometrii wykreślnej. PWN, Warszawa 1998.
5. JANKOWSKI W.: Geometria wykreślna. Wydawnictwo Politechniki Poznańskiej, Poznań1999.

	Supplementary literature	6. BIELIŃSKI A.: Geometria wykreślna. Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2005. 7. BŁACH A.: Inżynierska geometria wykreślna (podstawy i zastosowania). Wydawnictwo Politechniki Śląskiej Gliwice 2006. 8. BIELIŃSKI A.: Ćwiczenia z geometrii wykreślnej. Oficyna Wydawnicza Politechniki Warszawskiej 2002.
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Determination of embankment and cut planes along roads and squares.	
Work placement	Not applicable	

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