



Subject card

Subject name and code	Descriptive Geometry , PG_00042590						
Field of study	Geometria wykreślna						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
Education level	first-cycle studies		Subject group		Obligatory subject group in the field of study		
Mode of study	Part-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		Polish		
Semester of study	1		ECTS credits		3.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Mechanics of Materials and Structures -> Faculty of Civil and Environmental Engineering -> Wydział Politechniki Gdańskiej						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Dawid Bruski				
	Teachers		dr inż. Angela Andrzejewska-Sroka dr inż. Dawid Bruski Radosław Wolny Jakub Zembrzusi mgr inż. Tomasz Wiczenbach				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	12.0	10.0	0.0	5.0	0.0	27
	E-learning hours included: 0.0						
	eNauczanie source address: https://enauczanie.pg.edu.pl/2025/course/view.php?id=1987						
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	27		5.0		70.0	102
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		
	[K6_U04] Reads and prepares construction documentation (including drawings, graphic documentation in the CAD environment), efficiently uses maps as well as architectural, construction and geodetic drawings.		Can read construction drawings. Can apply basic constructions in elevation (projection with elevations) and orthographic projections.		[SU1] Ocena realizacji zadania [SU3] Ocena umiejętności wykorzystania wiedzy uzyskanej w ramach przedmiotu [SU5] Ocena umiejętności zaprezentowania wyników realizacji zadania		
	[K6_W04] Knows the rules of descriptive geometry and technical drawing for preparing and reading architectural, construction and geodetic drawings; also with the use of CAD		Knows the basics of elevation (projection with elevations) and Monge's orthographic projection.		[SW1] Ocena wiedzy faktograficznej		

Subject contents	Course content – lecture		
	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. Monge projection. 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.		
	Course content – exercises		
Subject contents	Basic constructions in elevation projection; lines and planes in topographic projection; Spatial relations and common elements; elements of earthworks design; design of slopes, embankments and excavations for squares and roads. Basic planimetry and stereometry; projection of polyhedra to auxiliary views; incidence with planes; common elements and polygon edges; plane transformations to projecting and natural positions; plane sections of polyhedra; Intersection of polyhedrons with a straight line or a plane.		
	Course content – project		
	Basic constructions in elevation projection; lines and planes in topographic projection; Spatial relations and common elements; elements of earthworks design; design of slopes, embankments and excavations for squares and roads. Basic planimetry and stereometry; projection of polyhedra to auxiliary views; incidence with planes; common elements and polygon edges; plane transformations to projecting and natural positions; plane sections of polyhedra; Intersection of polyhedrons with a straight line or a plane.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	evaluation of the exercise solution	60.0%	50.0%
	test	60.0%	50.0%
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. 9. Wróblewska D.: Rzut Cechowany. Odwzorowania Inżynierskie, skrypt elektroniczny dostępny na stronie http://www.pbc.gda.pl/, Gdańsk, 2014.	
	eResources addresses		

Example issues/ example questions/ tasks being completed	Determination of embankment and cut planes along roads and squares.
Practical activities within the subject	Not applicable

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