



Subject card

Subject name and code	Descriptive geometry, PG_00061504						
Field of study	Architecture						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2026/2027		
Education level	first-cycle studies	Subject group			Obligatory subject group in the field of study		
Mode of study	Full-time studies	Mode of delivery			blended-learning		
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 Visual Arts -> Faculty of Architecture -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		mgr inż. arch. Michał Malewczyk				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	15.0	0.0	45
	E-learning hours included: 30.0						
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		8.0		47.0	100
Subject objectives	Development of the ability of spatial manipulation in two dimensional drawing. Acquiring skills in using axonometric drawing.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U04] is able to use analytical methods to formulate and solve project tasks		He can use various methods of space mapping to solve simple spatial problems. He can present the effects of work in an attractive way. Has manual skills in the precise execution of linear drawings.		[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject		
	[K6_W01] knows and understands construction problems, building and engineering issues related to building design; principles, solutions, constructions and building materials used in simple engineering tasks in the field of architectural and urban design		Knows and understands spatial geometry to the extent necessary to formulate and solve tasks in the area of architectural and urban design; Knows various methods of mapping space. Correctly constructs and reads spatial objects in various types of projections, also with the use of popular digital programs; knows and understands the geometry of space to the extent necessary to formulate and solve tasks in the area of architectural and urban design;		[SW1] Assessment of factual knowledge		

Subject contents	<p>Course content – lecture Descriptive Geometry, lecture:</p> <p>1 Introduction to the subject, historical outline, importance of the subject, projection</p> <p>2 Rectangular and diagonal axonometry, principles of formation, construction of shortenings</p> <p>3 Projections Mongea rules, specific position of elements, transformation</p> <p>4 Belonging, parallelism, perpendicularity</p> <p>5 Insertion points, interference of planes, interference of projection planes, viewports, oblique planes, interference of planes with viewports, interference of oblique planes</p> <p>6 Cross-sections of solids, cross-sections with projecting planes, viewports, using plane traces, intentional transformation, alignment and affinity relationships</p> <p>7 Interference of polyhedra: interference of two cuboids, pyramids, a cuboid with a pyramid</p> <p>8 Shadows: own shadows, on the viewport, mutual shadows</p> <p>9 Gauge projection, introduction to the method, basic issues, insertion points, interpenetration of planes</p> <p>10 Roof geometry - traditional roofs, sunken roofs, floors, chimneys and towers, edge, linear and point drainage</p> <p>11 Cross-sections and views of roofs</p> <p>12 Design of hardening in the projection of features.</p> <p>13 Terrain transformations in the projection of features</p> <p>14 Field reservoirs in the feature plan.</p> <p>15 Material summary</p>
	<hr/> <p>Course content – project</p> <p>1 Introduction to classes</p> <p>2 Sheet 1 oblique axonometry and rectangular structure of the polyhedron</p> <p>3 4 Sheet 2 rectangular axonometry, construction of a polyhedron using the construction of contractions, Mongea transformations</p> <p>5 Sheet 3 axonometrics - affiliation, parallel task using lateral projections</p> <p>6 Sheet 4 axonometry, Mongea projections, penetration, construction of the penetration of two planes</p> <p>7 Test 1 construction of polyhedra, transformations, affiliation, parallelism, perpendicularity, puncture points</p> <p>8 9 Sheet 5 axonometry, Mongea projections, cross-sections, checking by purposeful transformation and alignment or affinity</p>

	<p>10 11 Sheet 6 axonometrics penetration of solids task using side projections</p> <p>12 13 14 Sheet 7 axonometry, projections Mongea shadows solution of the task using two methods</p> <p>15 Test 2 cross-sections and interpenetration of polyhedra, shadows</p>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Aquiring minimum points form Descriptive Geometry reviews	51.0%	50.0%
	Quality of drawings from Descriptive Geometry	100.0%	50.0%
Recommended reading	Basic literature	<p>Błach A., <i>Inżynierska geometria wykreślna</i>, Gliwice 2002</p> <p>Górska R., <i>Geometria wykreślna</i>, Kraków 2015</p> <p>Łapińska C., <i>Descriptive Geometry</i>, Warszawa 2016</p> <p>Chahly A. T., <i>Descriptive Geometry</i>, Moskwa, 1968</p>	
	Supplementary literature	<p>Grochowski B., <i>Geometria wykreślna z perspektywą stosowaną</i>, PWN 2018</p> <p>Otto F.E., <i>Geometria wykreślna</i>, PWN 1977</p> <p>Arustamov Kh., <i>Problems in Descriptive Geometry</i>, Moskwa, 1972</p>	
	eResources addresses		
Example issues/ example questions/ tasks being completed	<p>1. Construct the intersection of polyherdra and plane</p> <p>2. Construct the line of intersection of two given polyhedra</p> <p>3. In axonometry defined by axes <math>x</math>, <math>y</math>, <math>z</math> construct a polyhedron and its own shadow and the shadow cast on the planes of projection</p>		
Practical activites within the subject	Not applicable		

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