



## Subject card

Subject name and code	Descriptive geometry, PG_00052595						
Field of study	Architecture						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2020/2021		
Education level	first-cycle studies	Subject group			Obligatory subject group in the field of study		
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	1	Language of instruction			English		
Semester of study	1	ECTS credits			5.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Visual Techniques -> Faculty of Architecture						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. arch. Anna Wanclaw					
	Teachers	mgr inż. arch. Dariusz Cyparski dr inż. arch. Anna Wanclaw mgr inż. arch. Michał Malewczyk					
Lesson types and methods of instruction	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: 0.0						
	Adresy na platformie eNauczanie: Descriptive Geometry I, 2020/21 - Moodle ID: 5729 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=5729">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=5729</a>						
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	9.0		71.0	125	
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	He 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.			[SW1] Assessment of factual knowledge		

## Subject contents

### Descriptive Geometry, lecture:

1. Introduction, elements of the space, projection, Monge projections
2. Projection of point, line and plane
3. Common elements, shadows
4. Parallelism, perpendicularity, transformation
5. Construction of polyhedrons,
6. Sections of polyhedrons, compounds of collineation
7. Revolution, developments of polyhedrons
8. Piercing points, intersection of polyhedrons
9. Orthogonal axonometric projection
10. Oblique axonometric projection
11. Geometry of roofs
12. Spatial model of the roof, digital visualization
13. Horizontal projection
14. Horizontal projection, engineering application
15. The road in the terrain

### Descriptive Geometry, project:

1. Introduction, elements of the space, projection, Monge projections
2. Projection of point, line and plane, transformation
3. Affiliation of elements
- 4, 5. Common elements, shadows
6. Test 1. Parallelism, perpendicularity, transformation, affiliation of elements
7. Construction of polyhedrons,
8. Sections of polyhedrons, compounds of collineation
9. Revolution, developments of polyhedrons, piercing points, intersection of polyhedron with line

	<p>10. Test 2. Polyhedrons</p> <p>11. Orthogonal axonometric projection, intersection of polyhedrons</p> <p>12. Oblique axonometric projection, shadows</p> <p>13, 14. Geometry of roofs, spatial model of the roof, digital visualization</p> <p>15. Test 3. Axonometry</p>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Quality of drawings from Descriptive Geometry	100.0%	50.0%
	Aquiring minimum points form Descriptive Geometry reviews	100.0%	50.0%
Recommended reading	Basic literature	<p>Przyłucka K., Helenowska-Peschke M. <i>Wykłady z geometrii wykreślnej</i>; <a href="http://www.pg.gda.pl/~mhelen/w1/index.html">http://www.pg.gda.pl/~mhelen/w1/index.html</a></p> <p>Helenowska-Peschke M., Wanclaw A., <i>Zadania z geometrii wykreślnej</i>. <a href="http://pbc.gda.pl/dlibra/doccontent?id=2597">http://pbc.gda.pl/dlibra/doccontent?id=2597</a></p> <p>Helenowska-Peschke M., Wanclaw A., <i>Konstrukcje cieni</i>, <a href="http://pbc.gda.pl/dlibra/doccontent?id=2566">http://pbc.gda.pl/dlibra/doccontent?id=2566</a></p>	
	Supplementary literature	<p>Błach A., <i>Inżynierska geometria wykreślna</i>, Gliwice 2002</p> <p>Górska R., <i>Geometria wykreślna</i>, Kraków 2015</p> <p>Grochowski B., <i>Geometria wykreślna z perspektywą stosowaną</i>, PWN 2018</p> <p>Otto F.E., <i>Geometria wykreślna</i>, PWN 1977</p>	
	eResources addresses	<p>Descriptive Geometry I, 2020/21 - Moodle ID: 5729  <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=5729">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=5729</a></p>	
Example issues/ example questions/ tasks being completed	<p>1. Construct shadows of polyherdra and line</p> <p>2. Construct projections of the polyhedron, based on the data of the axis of symmetry and one of the vertices</p> <p>3. Construct the line of intersection of two given polyhedra</p> <p>4. 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> <p>5. Solve roof geometry and shadow, build its 3D digital model with lighting, compose the solution and visualization of the model on the paper.</p>		
Work placement	Not applicable		