GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Descriptive geometry, PG_00052758
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	Polish
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 Wancław
	Teachers	dr inż. arch. Anna Wancław 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: Geometria wykreślna I, 2020/21 - Moodle ID: 5728 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=5728						

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_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
	[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

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

	10.Test 2. Polyhedrons
	11. Orthogonal axonometric projection, intersection of polyhedrons
	12. Oblique axonometric projection, shadows
	13, 14. Geometry of roofs, spatial model of the roof, digital visualization
	15. Test 3. Axonometry
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	100.0%	50.0%
Quality of drawings from Descriptive Geometry	100.0%	50.0%

Recommended reading

Basic literature	Przyłucka K., Helenowska-Peschke M. *Wykłady z geometrii wykreślnej*; http://www.pg.gda.pl/~mhelen/w1/index.html Helenowska-Peschke M., Wancław A., *Zadania z geometrii wykreślnej.* http://pbc.gda.pl/dlibra/doccontent?id=2597 *Helenowska-Peschke M., Wancław A., Konstrukcje cieni,* http://pbc.gda.pl/dlibra/doccontent?id=2566
Supplementary literature	Błach A., *Inżynierska geometria wykreślna,* Gliwice 2002 Górska R., *Geometria wykreślna,* Kraków 2015 Grochowski B., *Geometria wykreślna z perspektywą stosowaną,* PWN 2018 Otto F.E., *Geometria wykreślna, PWN* 1977
eResources addresses	Geometria wykreślna I, 2020/21 - Moodle ID: 5728 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=5728

Example issues/ example questions/ tasks being completed

1. Construct shadows of polyherdra and line

2. Construct projections of the polyhedron, based on the data of the axis of symmetry and one of the vertices

3. Construct the line of intersection of two given polyhedra

4. In axonometry defined by axes *x, y, z* contruct a polyhedron and its own shadow and the shadow cast on the planes of projection

5. Solve roof geometry and shadow, build its 3D digital model with lighting, compose the solution and visualization of the model on the paper.

Work placement

Not applicable