



## Subject card

Subject name and code	Engineering Graphics I, PG_00055216						
Field of study	Mechanical Engineering						
Date of commencement of studies	October 2022	Academic year of realisation of subject			2022/2023		
Education level	first-cycle studies	Subject group			Obligatory subject group in the field of study Subject group related to scientific research 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 Machine Design and Vehicles -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Jacek Łubiński					
	Teachers	dr hab. inż. Jacek Łubiński mgr inż. Bartosz Bastian					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	30.0	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		9.0		71.0	125
Subject objectives	The aim of the classes is to develop the spacial imagination, recognition of the projection methods, preparation of the working drawings based on the current norms of the technical drawing						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_W07		The student can present elements on the basis of the parallel projection. The student writes and read the shape of the mechanical construction. Can define the state of the surface, dimentions the machine elements and creates working drawing based on the norms of the technical drawing.		[SW1] Assessment of factual knowledge		
	[K6_U03] is able to identify, formulate and develop the documentation of a simple design or technological task, including the description of the results of this task in Polish or in a foreign language and to present the results using computer software or other aiding tools		The student can present elements on the basis of the parallel projection. The student writes and read the shape of the mechanical construction. Can define the state of the surface, dimentions the machine elements and creates working drawing based on the norms of the technical drawing.		[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject		

Subject contents	<p>The role of the engineering drawing in the industry,</p> <p>Introduction to preparation of the technical objects.</p> <p>Axonometric and ortographic projection</p> <p>Projections of: points, lines, planes, solids.</p> <p>True size of geometrical elements</p> <p>Presentation of solids cut by multiple planes,</p> <p>Views and sections of machine elements.</p> <p>Dimensioning, dimension tolerance, fits.</p> <p>Description of surface state.</p> <p>Types of machine drawings.</p> <p>Position of the element on the drawing.</p> <p>Normalisation in technical drawing.</p>											
Prerequisites and co-requisites	Basic knowledge of planar and spacial geometry, metrology, and machine design.											
Assessment methods and criteria	<table border="1" data-bbox="451 1099 1487 1205"> <thead> <tr> <th data-bbox="451 1099 794 1137">Subject passing criteria</th> <th data-bbox="794 1099 1137 1137">Passing threshold</th> <th data-bbox="1137 1099 1487 1137">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="451 1137 794 1167">Class projects</td> <td data-bbox="794 1137 1137 1167">60.0%</td> <td data-bbox="1137 1137 1487 1167">40.0%</td> </tr> <tr> <td data-bbox="451 1167 794 1205">Final test</td> <td data-bbox="794 1167 1137 1205">60.0%</td> <td data-bbox="1137 1167 1487 1205">60.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Class projects	60.0%	40.0%	Final test	60.0%	60.0%
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Recommended reading	Basic literature	<p>Dobrzański T.: Rysunek techniczny i maszynowy. WNT, Warszawa, 2017.</p> <p>Rigall A., Sadaj J.: Zapis konstrukcji Geometria wykreślna, Wydawnictwo Politechniki Gdańskiej, 2003.</p> <p>Hawk C, Schaum's outline of theory and problems of descriptive geometry, 1962</p>										
	Supplementary literature	<p>Kurmaz L.W.: Projektowanie węzłów i części maszyn, Wydawnictwo Politechniki Świętokrzyskiej, 2007.</p>										
	eResources addresses	<p>Adresy na platformie eNauczanie:</p> <p>Engineering Graphics I, PG_00055216 - Moodle ID: 26635  <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=26635">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=26635</a></p>										

Example issues/ example questions/ tasks being completed	Create a working drawing of an element on the picture Draw a solid cut by multiple planes Fill the missing projections of the element
Work placement	Not applicable