GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Engineering Graphics, PG_00055039		
Field of study	Management and Production 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	Polish
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. Waldemar Karaszewski	
	Teachers	mgr inż. Katarzyna Mazur dr inż. Sebastian Grelik-Urbanowski mgr inż. Bartosz Bastian mgr inż. Marek Łubniewski dr hab. inż. Waldemar Karaszewski	

Lesson types and methods of instruction							
	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	30.0	0.0	60
	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	60	5.0	60.0	125

Subject objectives	The aim of the course is: • shaping 3D imagination, • learning the principles of projecting and defining working drawings in accordance with applicable standards, • learning the rules of machine drawing parts and joints used in the machine design, • learning the principles of creating assembly drawings.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_W03] has knowledge of the design record (the record structure)for the preparation of the manufacturing process documentation and basic knowledge of the implementation and management of production systems, including the principles of designing machine parts and manufacturing technologies using information techniques	A student draws space elements based on orthographic projection. He presents the rules of presentation elements in engineering drawing. He draws and reads structural forms of three-dimensional mechanical elements. He describes surface attributes of elements. He draws of machine elements dimensions and creates working drawings of machine elements according to machine technical drawing standards. He creates working and assembly drawings of machine elements. He reads information about machine elements based on presented elements and units drawings. He draws and reads structural forms of three-dimensional mechanical elements and mechanical units. He reads diagrams of complex mechanical systems.	[SW1] Assessment of factual knowledge
	[K6_K02] is able to interact and work in a group, assuming different roles, can inspire and organize the learning process of others, properly identifies priorities for realization of a task specified by themselves or others	A student draws space elements based on orthographic projection. He presents the rules of presentation elements in engineering drawing. He draws and reads structural forms of three-dimensional mechanical elements. He describes surface attributes of elements. He draws of machine elements dimensions and creates working drawings of machine elements according to machine technical drawing standards. He creates working and assembly drawings of machine elements. He reads information about machine elements based on presented elements and units drawings. He draws and reads structural forms of three-dimensional mechanical elements and mechanical units. He reads diagrams of complex mechanical systems.	[SK2] Assessment of progress of work
	[K6_U02] has the ability of self-learning and expanding knowledge in a specialized field of engineering production	A student draws space elements based on orthographic projection. He presents the rules of presentation elements in engineering drawing. He draws and reads structural forms of three-dimensional mechanical elements. He describes surface attributes of elements. He draws of machine elements dimensions and creates working drawings of machine elements according to machine technical drawing standards. He creates working and assembly drawings of machine elements. He reads information about machine elements based on presented elements and units drawings. He draws and reads structural forms of three-dimensional mechanical elements and mechanical units. He reads diagrams of complex mechanical systems.	[SU3] Assessment of ability to use knowledge gained from the subject [SU1] Assessment of task fulfilment
Subject contents	A role of graphics in engineering activity. Introduction to an individual graphical description of technical objects. Orthogonal and axonometric projections. Views, sections, revolved and removed sections of machine elements. Dimensioning of lengths, diameters, angles. Tolerances of dimensions, fits. Description of surface attributes of machine elements. Location of elements on a drawing. Drawing rules of working and assembly drawings. Standardization in engineering graphics. Permanent joints presentation of machine elements (welded, glue, rivet joints). Presentation of joint connections of machine elements (screw, shaft-hub joints). Presentation ways of standardized machine elements (bearings, gears, clutches, brakes, shafts and axles). Presentation ways of springs and seals. Basic information about technical drawings in electrotechnics and electronics, electric diagrams. Pneumatics and hydraulics diagrams. Drawings and machine diagrams practical reading.		
Prerequisites and co-requisites	Based knowledge of elementary geometry and stereometry, theory of machines and metrology.		

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Design tasks	60.0%	40.0%
	Final exam	60.0%	60.0%
Recommended reading	Basic literature	Dobrzański T .: Technical and Machine Drawing. WNT, Warsaw, 2017. Rigall A., Sadaj J .: Technical Drawing - Descriptive geometry, Gdansk University of Technology, 2003. Burcan J.: Basics of Technical Drawings, PWN, 2016	
	Supplementary literature	Kurmaz L.W.: Designing nodes and machine parts, publishing house of the Kielce University of Technology, 2007	
	eResources addresses	Adresy na platformie eNauczanie: Grafika Inżynierska, W, P, ZIP, sem01, zimowy, 2022/2023 (PG_00055039) - Moodle ID: 25512 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=25512	
Example issues/ example questions/ tasks being completed	Make a working drawing of the element shown in the drawing. Make an assembly drawing of drive component presented in the 3D drawing. Create an assembly drawing of the schematically illustrated weld joint.		
Work placement	Not applicable		

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