GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Engineering Graphics, PG_00060450		
Field of study	Mechanical and Naval Engineering		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025
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	Part-time studies	Mode of delivery	blended-learning
Year of study	1	Language of instruction	Polish
Semester of study	1	ECTS credits	6.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Janusz Musiał	
	Teachers	dr hab. inż. Janusz Musiał	

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	18.0	0.0	0.0	27.0	0.0	45
	E-learning hours included: 18.0						

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	10.0	95.0	150

Subject objectives	The aim of the subject is: shaping spatial imagination, learning the principles of projecting and defining construction drawings in accordance with applicable standards, learning the principles of drawing machine parts and connections used in machine construction, learning the principles of creating assembly and schedule drawings.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W07] knows the principles of engineering drawing, standards and tools used in preparation of technical documentation	511 / 5 000 Wyniki tłumaczenia Tłumaczenie Student: - knows the rules of presenting objects in construction notation, - knows how to write and read structural forms of three-dimensional mechanical elements, - knows methods of describing surface features and dimensioning machine elements, - knows the principles of creating assembly and assembly drawings of machine elements, - has knowledge of writing and reading the structural forms of three-dimensional mechanical elements and assemblies of mechanical devices, - knows diagrams of technical systems.	[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 maps spatial elements based on parallel projection. Presents the principles of presenting objects in construction notation. Writes and reads the structural forms of three-dimensional mechanical elements. Describes the surface features of elements. Dimensions machine elements and creates manufacturing drawings of machine elements in accordance with machine technical drawing standards. Creates assembly and assembly drawings of machine elements. Reads information about machine elements from drawings of elements and assemblies. Writes and reads the structural forms of three-dimensional mechanical elements and assemblies of mechanical devices. Reads diagrams of complex technical systems.	[SU3] Assessment of ability to use knowledge gained from the subject [SU1] Assessment of task fulfilment

Subject contents

1. Basic geometric elements. Types of projection. Basic frame of reference. Primary and secondary viewports. Points, segments, straight lines, in rectangular and axonometric projection. 2. Assignment of points to solids. Cross-sections of solids by planes. Determining the actual sizes of solid sections. Interpenetration of solids. 3.Principles of presenting objects in technical drawings. Projections as cross-sections, their types, layers, etc. Half-views, half-sections. 4. Principles of preparing working drawings. Principles of dimensioning objects, general and order principles, special cases. 5. Methods of marking tolerances and fits, as well as marking the condition of surfaces, heat treatment and coatings. 6. Rules for preparing assembly drawings and marking and presenting welds. Riveted and glued connections. 7. Principles of preparing assembly drawings. Representing threads and screw connections. 8. Ways of presenting standardized elements. Methods of presenting characteristic elements of drive components: shaft-hub connections, bearings, gears, etc.

Prerequisites and co-requisites

Basic knowledge of elementary geometry and stereometry.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
	60.0%	60.0%
	100.0%	40.0%

Recommended reading

Basic literature

1. Series of scripts: R. Maciakowski, M. Dietrich and others: Lecture from PKM2. Series of textbooks Basics of Machine Design edited by Z. Osiński PWN3. Ew. some AutoCAD/Inventor design manual4. L. Kurmaz: Basics of Machine Design. Projects. PWN5. T. Dobrzański Machine technical drawing. WNThttp://fluid.itcmp.pwr.wroc.pl/~eichler

	Supplementary literature	1. Rigall A., Sadaj J.: Descriptive geometry construction record, Gdańsk University of Technology Publishing House, 2003. 2. Burcan J.: Basics of Technical Drawing, PWN, 2016 3. Niezgodzińscy: WNT formulas, charts and strength tables.
	eResources addresses	Adresy na platformie eNauczanie: Grafika inżynierska - Moodle ID: 41844 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=41844 Grafika inżynierska - Moodle ID: 42096 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=42096 Grafika inżynierska - Moodle ID: 42097 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=42097
Example issues/ example questions/ tasks being completed	Make an executive drawing of the element shown in the drawing. Make an assembly drawing of the drive component shown in the drawing in the form of a 3D model. Make an assembly drawing of the diagrammatically presented structure.	
Work placement	Not applicable	

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