



Subject card

Subject name and code	ENGINEERING GRAPHICS AND 3D MODELING, PG_00070987						
Field of study							
Date of commencement of studies	October 2026		Academic year of realisation of subject		2026/2027		
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	2		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Informatics In Management -> Faculty of Management and Economics -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Igor Garnik				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	0.0	0.0	30
	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	30		3.0		17.0	50
Subject objectives	to prepare students to develop and interpret technical documentation and 3D models using engineering graphics and CAD tools, based on knowledge of technical drawing principles, descriptive geometry, and spatial modeling, in the context of engineering design and management processes.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U05] designs innovative solutions for complex management processes by utilizing appropriate methods and techniques.		is able to develop a 3D model and technical documentation of a component or assembly using CAD tools for analysis, modification, and presentation of the solution.		[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools		
	[K6_K03] is prepared to critically assess the knowledge they possess, which is necessary for solving cognitive and practical problems, and to supplement any gaps with opinions from external experts.		is ready to verify the correctness of their own models and technical drawings, accept feedback, and improve solutions based on received comments.		[SK5] Assessment of ability to solve problems that arise in practice		
	[K6_W02] possesses advanced knowledge of methods and techniques that enable precise formulation and effective problem solving.		knows methods and tools used in engineering graphics and 3D modeling and understands how to apply them to develop correct technical documentation and solve design problems.		[SW3] Assessment of knowledge contained in written work and projects		

Subject contents	Course content – laboratory 1. Basics of technical drawing line types and thicknesses, types of drawing objects, sheet format standards, projection principles. 2. AutoCAD: user interface, creating drawing objects. 3. Dimensioning and text descriptions. 4. Blocks and attributes. 5. Design drawing 1. 6. Design drawing 2. 7. Design drawing 3. 8. Completion of Part I (technical drawing and AutoCAD). 9. Modeling simple 3D objects. 10. Modeling based on 2D sketches. 11. Freeform modeling. 12. Assembling objects. 13. Design visualization. 14. Creating drawing documentation. 15. Completion of Part II (3D modeling).		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Practical tasks	60.0%	40.0%
	Technical drawing test	60.0%	30.0%
	3D modeling and technical documentation test	60.0%	30.0%
Recommended reading	Basic literature	- Jensen, C. H., Helsel, J. D., & Short, D. R. (2018). <i>Engineering drawing and design</i> (7th ed.). McGraw-Hill Education. - Giesecke, F. E., Mitchell, A., Spencer, H. C., Hill, I. L., Dygdon, J. T., & Novak, J. E. (2020). <i>Technical drawing with engineering graphics</i> (16th ed.). Pearson. - Jumper L., Shih R.H. (2025). <i>AutoCAD 2026 Tutorial First Level 2D Fundamentals</i>. SDC Publications. - Shih R.H. (2025). <i>Parametric Modeling with Autodesk Fusion</i>. SDC Publications.	
	Supplementary literature	Jensen, C. H., & Helsel, J. D. (2018). <i>Interpreting engineering drawings</i> (7th ed.). Cengage Learning.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	- Recreate a sample technical drawing in AutoCAD based on a paper version. - Create an assembly drawing based on component sketches. - Create a 3D model based on measurements of the actual object. - As part of a team project, create separate objects and then align them by assembling them. - Create a 3D model based on the assumed parameters and then create drawing documentation for it.		
Practical activities within the subject	Not applicable		

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