



Subject card

Subject name and code	Fundamentals of Computer Science, PG_00072615						
Field of study	Mechanical Engineering						
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	1		ECTS credits		4.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Division of Manufacturing and Production Engineering -> Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Dominika Zakrzewska				
	Teachers		dr inż. Dominika Zakrzewska dr inż. Ewa Kozłowska				
Lesson types	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						
	eNauczanie source addresses: Moodle ID: 8414 Fundamentals of Computer Science https://enauczanie.pg.edu.pl/2025/course/view.php?id=8414						
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		35.0	100
Subject objectives	Developing fundamental digital competencies essential for engineering education and professional practice. Acquiring practical skills in using university IT resources, preparing technical documentation, processing information, conducting basic data analysis in spreadsheets, creating engineering presentations, managing scientific bibliographies, responsibly using generative artificial intelligence tools, and using basic project planning software.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U03] is able to identify, formulate, and develop documentation for design or technological tasks, and communicate the results using appropriate tools and presentation techniques	The student is able to prepare documentation of an engineering task, analyze and present data, and communicate the results of work using appropriately selected IT tools.	[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task
	[K6_W03] possesses structured and theoretically grounded knowledge of design, manufacturing technologies, metrology, quality control, and operation of machine components and mechanical systems, including technical documentation and the life cycle of engineering objects	The student knows the basic IT tools used to develop technical documentation, process and present data, and support design and engineering work.	[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects
	[K6_K01] is aware of the need for lifelong learning and is able to select appropriate methods for self-learning and teaching others; critically evaluates his/her own knowledge; understands the importance of professional conduct and adherence to professional ethics; demonstrates entrepreneurship and innovation in the implementation of professional projects	The student is able to consciously select and use digital tools that support learning and the implementation of engineering tasks, and critically evaluate the results obtained using information technologies, including generative artificial intelligence tools.	[SK3] Assessment of ability to organize work [SK4] Assessment of communication skills, including language correctness [SK5] Assessment of ability to solve problems that arise in practice
Subject contents	Course content – lecture 1. Technical documentation 2. Engineering data processing 3. Engineering communication and presentations 4. Artificial intelligence-assisted engineering workflows 5. Scientific information and reference management 6. Engineering project planning		
	Course content – project 1. Introduction and Gdańsk Tech Digital Tools 2. Technical Documentation 3. Digital Graphics Processing 4. Generative AI in Engineering 5. Scientific Reference Management 6. Engineering Data Processing and Analysis 7. Technical Presentations 8. Introduction to CAD/CAM and Project Planning Tools		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Project	60.0%	30.0%
	Lecture	60.0%	70.0%
Recommended reading	Basic literature	1. O'Leary T. J., O'Leary L. I., O'Leary D., Computing Essentials 2023, 2022, McGraw-Hill. 2. Weverka P., Office 2021 All-in-One For Dummies, 2022, John Wiley & Sons. 3. Leake J. M., Goldstein M. H., Borgerson J. L., Engineering Design Graphics: Sketching, Modeling, and Visualization, 2022, Wiley. 4. Lewis C. M., Chatfield C., Johnson T., Microsoft Project 2019 Step by Step, 2019, Microsoft Press.	
	Supplementary literature	1. Phoenix J., Taylor M., Prompt Engineering for Generative AI: Future-Proof Inputs for Reliable AI Outputs, 2024, O'Reilly Media. 2. Giesecke F. E., Lockhart S., Novak J. E. et al., Technical Drawing with Engineering Graphics, 2016, Pearson.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	1. Przygotowywanie i formatowanie dokumentacji technicznej. 2. Przetwarzanie i analiza danych inżynierskich za pomocą arkuszy kalkulacyjnych. 3. Zastosowanie narzędzi sztucznej inteligencji (AI) w zadaniach inżynierskich. 4. Przygotowywanie i prezentacja informacji technicznych. 5. Wykorzystanie narzędzi CAD/CAM i planowania projektów w podstawowych zastosowaniach inżynierskich.		
Practical activities within the subject	Not applicable		

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