



Subject card

Subject name and code	AI Technology Deep Dive, PG_00069766						
Field of study	Informatics, Informatics, Hydrogen Technologies and Electromobility						
Date of commencement of studies	February 2026		Academic year of realisation of subject		2026/2027		
Education level	second-cycle studies		Subject group				
Mode of study	Full-time studies		Mode of delivery		e-learning		
Year of study	1		Language of instruction		English		
Semester of study	2		ECTS credits		3.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Software Engineering -> Faculty of Electronics Telecommunications and Informatics -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Agnieszka Landowska				
	Teachers		dr hab. inż. Agnieszka Landowska				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	15.0	0.0	0.0	45
	E-learning hours included: 45.0						
	eNauczanie source addresses: Moodle ID: 8127 AI Technology Deep Dive 2026 https://enauczanie.pg.edu.pl/2025/course/view.php?id=8127						
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		3.0		27.0	75
Subject objectives	The aim of the course is to: • Provide students with an in-depth understanding of the core technologies behind artificial intelligence, including machine learning, deep learning, and natural language processing. • Explore the architecture, algorithms, and frameworks used to build modern AI systems. • Develop practical skills in designing, training, and evaluating AI models using real-world datasets and tools. • Analyze the limitations, risks, and ethical implications of AI technologies in various domains. • Prepare students to critically assess and apply AI solutions in research, industry, and innovation contexts.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_W10] knows and understands, to an increased extent, the basic processes occurring in the life cycle of equipment, objects and technical systems, as well as methods of supporting processes and functions, specific to the field of study		Student has in-depth understanding of the core technologies behind artificial intelligence, including machine learning, deep learning, and natural language processing, knows the architecture, algorithms, and frameworks used to build modern AI systems.		[SW3] Assessment of knowledge contained in written work and projects		
	[K7_U07] can apply advanced methods of process and function support, specific to the field of study		Student has practical skills in designing, training, and evaluating AI models using real-world datasets and tools, as well as skills to analyze the limitations, risks, and ethical implications of AI technologies in various domains.		[SU1] Assessment of task fulfilment		

Subject contents	Course content – lecture - Building Trustworthy AI Enterprise Solutions - Building AI Solutions using Advanced Algorithms and Open Source Frameworks - Ethical Considerations for GenAI - AI for Sustainability		
	Course content – laboratory - Retrieval Augmented Generation with LangChain - Energy Demand Forecasting with IBM Granite Time Series - Generative AI in action - Build your first Gen AI Application the Right Way		
Prerequisites and co-requisites	Prerequisites include programming and Python basic skills.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Ocena poprawności	50.0%	100.0%
Recommended reading	Basic literature	Andreas C. Muller, Sarah Guido "Machine learning, Python i data science", 2023, Helion	
	Supplementary literature	Hadelin de Ponteves, "Sztuczna inteligencja : błyskawiczne wprowadzenie do uczenia maszynowego, uczenia ze wzmocnieniem i uczenia głębokiego", 2021, Helion	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Practical activities within the subject	Not applicable		

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