

Subject card

Subject name and code	Business Process Automation and Generative Artificial Intelligence, PG_00209816						
Field of study	Historical game design						
Date of commencement of studies	October 2024		Academic year of realisation of subject				
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study Optional subject group		
Mode of study	full-time studies		Mode of delivery		e-learning		
Year of study	3		Language of instruction		Polish polish		
Semester of study	5		ECTS credits		2.0		
Learning profile	academic		Assessment form		credit		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		mgr inż. Przemysław Bykowski				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	E-learning hours included: 30.0						
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		0.0		20.0	50
Subject objectives	The aim of the course is to introduce students to the fundamental concepts of business process automation and the possibilities offered by generative artificial intelligence. During classes, students will become familiar with no-code/low-code tools and will learn to design and implement AI agents, enabling them to independently build flexible systems that automate selected tasks and processes according to their own needs.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
			The student is familiar with basic concepts of business process automation and the functioning of large language models (LLMs), including the differences between cloud-based and local (self-hosted) solutions. The student is able to design and implement a simple automation process using a chosen no-code/low-code tool, as well as configure and integrate an AI agent with external tools and systems to build a flexible solution automating a selected process. The student is ready to independently develop digital competences and critically assess the capabilities and limitations of AI tools.		[SU8] observation of student's independent or team work [SK5] implementation of a problem task		

Subject contents	1. Introduction to business process automation – concepts, benefits, application examples. 2. Overview of no-code/low-code automation tools – classification, selection criteria. 3. Architecture of automation platforms: triggers, actions, data flow between modules/nodes. 4. Designing and building an automation workflow step by step – from concept to implementation. 5. Integration with external systems via APIs and webhooks. 6. Introduction to large language models (LLMs) – principles of operation, applications, limitations. 7. Cloud-based language models (API services) vs. locally run (self-hosted) models – differences, costs, data privacy, hardware requirements. 8. Running a language model on your own computer – overview of tools and environments. 9. Building AI agents – architecture, memory, use of tools, chains of actions. 10. Integrating AI models with process automation platforms. 11. Automating communication and content processing using AI. 12. Designing your own automation system – needs analysis, tool selection. 13. Presentation and discussion of students' final projects.		
Prerequisites and co-requisites	Proficient computer skills and familiarity with basic office and internet tools (web browser, e-mail, spreadsheets). Ability to create and manage accounts in online services.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Final project – design and implementation of an automation or AI agent	51.0%	50.0%
	In-class assignments	51.0%	50.0%
Recommended reading	Basic literature	1. Dumas, M., La Rosa, M., Mendling, J., Reijers, H.A., Fundamentals of Business Process Management, wyd. 2, Springer, 2018. 2. van der Aalst, W.M.P., Process Mining: Data Science in Action, wyd. 2, Springer, 2016. 3. Willcocks, L., Lacity, M., Service Automation: Robots and the Future of Work, SB Publishing, 2016. 4. Russell, S., Norvig, P., Artificial Intelligence: A Modern Approach, wyd. 4, Pearson, 2020.	
	Supplementary literature	1. Mitchell, M., Artificial Intelligence: A Guide for Thinking Humans, Farrar, Straus and Giroux, 2019. 2. Christian, B., The Alignment Problem: Machine Learning and Human Values, W.W. Norton & Company, 2020. 3. Goodfellow, I., Bengio, Y., Courville, A., Deep Learning, MIT Press, 2016.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Building an automation that integrates a form with a spreadsheet and sends notifications. Configuring an AI agent that answers questions based on a given knowledge base. Designing an automation workflow that integrates a language model with an external API. Comparative analysis of using a cloud-based vs. local (self-hosted) language model for a selected task.		
Work placement	Not applicable		

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