

**Subject card**

Subject name and code	Gen-AI and Basic Programming, PG_00190185						
Field of study	Historical game design						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2026/2027		
Education level	Bachelor's 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			Polish		
Semester of study	1	ECTS credits			3.0		
Learning profile	academic	Assessment form			credit		
Conducting unit	Division of Combinatorial Optimisation -> Institute of Informatics -> Faculty of Mathematics, Physics and Informatics -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		mgr Mateusz Miotk				
	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		0.0		45.0	75
Subject objectives	The course introduces students to artificial intelligence tools for generating new content, such as texts, images, and music, covering the theoretical foundations of generative AI models and practical use of the latest technologies and platforms. The acquired knowledge is then applied during the introduction to programming fundamentals in game engines, where students learn to implement game logic, manage scene assets, and create interactive elements of virtual environments.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[PGHL3_U02] Selects appropriate methods and tools, including appropriate information and communication technologies, suited to the problem at hand		Is able to analyze problems and select as well as integrate appropriate generative AI tools for content creation and project implementation, while evaluating their effectiveness and optimizing solutions. Also applies basic programming constructs in a game engine and uses AI tools to support asset creation and prototyping.		[SU2] presentation/project/paper/report [SU4] test/exam - oral or written		
	[PGHL3_W09] Discusses selected dilemmas of the contemporary world in the context of relationships between the past and contemporary events, including the popularization of historical knowledge through games and other media		Has knowledge of generative AI tools and techniques and understands their underlying principles; is able to analyze their applications, impact, and limitations, including ethical and social aspects. Also understands the basics of game engine architecture and the role of programming in creating interactive environments.		[SW4] test/exam - oral or written [SW2] presentation/project/paper/report		

Subject contents	<ol style="list-style-type: none"> <li>1. Introduction to Generative AI and Prompt Engineering</li> <li>2. Fundamentals of Generative AI Models</li> <li>3. Prompt Engineering for Language Models</li> <li>4. Prompt Engineering for Image Generation</li> <li>5. Prompt Engineering for Music and Sound Generation</li> <li>6. Advanced Prompt Engineering Techniques</li> <li>7. Ethical and Social Aspects of Generative AI</li> <li>8. Introduction to Game Engines Basic Concepts and Interface</li> <li>9. First Steps in Programming Variables, Data Types, and Conditionals</li> <li>10. Game Logic Basics Loops, Functions, and Events</li> <li>11. Building a Simple Scene Using AI-Generated Assets</li> <li>12. Building a Simple Interactive Game with Generative AI Elements</li> </ol>			
Prerequisites and co-requisites	None			
Assessment methods and criteria	Subject passing criteria		Passing threshold	Percentage of the final grade
	Project		51.0%	40.0%
	Quizzes		51.0%	60.0%
Recommended reading	Basic literature	<ul style="list-style-type: none"> <li>• Wolfram S., <i>What Is ChatGPT Doing... and Why Does It Work?</i>, Wolfram Media, 2023.</li> <li>• Mollick E., <i>Co-Intelligence: Living and Working with AI</i>, Portfolio/Penguin, 2024.</li> <li>• Salkowitz R., <i>AI and the Future of Art</i>, O'Reilly Media, 2023.</li> <li>• Schell J., <i>The Art of Game Design: A Book of Lenses</i>, 3rd Edition, CRC Press, 2019.</li> <li>• Sheratt T., <i>An Absolute Beginner's Guide to Game Development</i>, Packt Publishing, 2023.</li> <li>• Thorn A., <i>Unity in 24 Hours: Sams Teach Yourself</i>, Sams Publishing, 2022.</li> </ul>		
	Supplementary literature	<ul style="list-style-type: none"> <li>• Marcus G., Davis E., <i>Rebooting AI: Building Artificial Intelligence We Can Trust</i>, Pantheon Books, 2019.</li> <li>• O'Neil C., <i>Weapons of Math Destruction</i>, Crown Publishers, 2016.</li> <li>• Russell S., <i>Human Compatible: Artificial Intelligence and the Problem of Control</i>, Viking, 2019.</li> <li>• Floridi L., <i>The Ethics of Artificial Intelligence</i>, Oxford University Press, 2023.</li> <li>• Crawford K., <i>Atlas of AI</i>, Yale University Press, 2021.</li> <li>• Rogers S., <i>Level Up! The Guide to Great Video Game Design</i>, Wiley, 2014.</li> <li>• Fullerton T., <i>Game Design Workshop</i>, 4th Edition, CRC Press, 2018.</li> </ul>		
	eResources addresses			
Example issues/ example questions/ tasks being completed	None			
Work placement	Not applicable			

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