University of Gdańsk

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

Additional information:

Classes will be conducted in a hybrid format. The part of the laboratory covering theoretical introduction and presentation of topics will be delivered online, while the practical part, involving students' independent work on programming tasks, will be held on-site (in person).

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_W09] Characterizes selected dilemmas of the contemporary world in the context of relationships between the past and the present, 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
[PGHL3_U02] Selects appropriate methods and tools, including information and communication techniques, to address specific problems	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

Subject contents

1. Introduction to Generative AI and Prompt Engineering
2. Fundamentals of Generative AI Models
3. Prompt Engineering for Language Models
4. Prompt Engineering for Image Generation
5. Prompt Engineering for Music and Sound Generation
6. Advanced Prompt Engineering Techniques
7. Ethical and Social Aspects of Generative AI
8. Introduction to Game Engines Basic Concepts and Interface
9. First Steps in Programming Variables, Data Types, and Conditionals
10. Game Logic Basics Loops, Functions, and Events
11. Building a Simple Scene Using AI-Generated Assets
12. Building a Simple Interactive Game with Generative AI Elements

Prerequisites and co-requisites

None

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Quizzes	51.0%	60.0%
Project	51.0%	40.0%

Recommended reading

Basic literature	• Wolfram S., *What Is ChatGPT Doing... and Why Does It Work?*, Wolfram Media, 2023. • Mollick E., *Co-Intelligence: Living and Working with AI*, Portfolio/ Penguin, 2024. • Salkowitz R., *AI and the Future of Art*, O'Reilly Media, 2023. • Schell J., *The Art of Game Design: A Book of Lenses*, 3rd Edition, CRC Press, 2019. • Sheratt T., *An Absolute Beginner's Guide to Game Development*, Packt Publishing, 2023. • Thorn A., *Unity in 24 Hours: Sams Teach Yourself*, Sams Publishing, 2022.
Supplementary literature	• Marcus G., Davis E., *Rebooting AI: Building Artificial Intelligence We Can Trust*, Pantheon Books, 2019. • O'Neil C., *Weapons of Math Destruction*, Crown Publishers, 2016. • Russell S., *Human Compatible: Artificial Intelligence and the Problem of Control*, Viking, 2019. • Floridi L., *The Ethics of Artificial Intelligence*, Oxford University Press, 2023. • Crawford K., *Atlas of AI*, Yale University Press, 2021. • Rogers S., *Level Up! The Guide to Great Video Game Design*, Wiley, 2014. • Fullerton T., *Game Design Workshop*, 4th Edition, CRC Press, 2018.
eResources addresses	

Example issues/ example questions/ tasks being completed

None

Work placement

Not applicable

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