

Subject card

Subject name and code	Click, think, discover: online tools and AI in science, PG_00179615						
Field of study	Chemistry						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2027/2028		
Education level	Master's studies		Subject group		Optional subject group		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		English		
Semester of study	4		ECTS credits		1.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Laboratory of Medical Chemistry -> Department of Biomedical Chemistry -> Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Marta Orlikowska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	8.0	0.0	0.0	0.0	0.0	8
	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	8		5.0		12.0	25
Subject objectives	The aim of the course is to introduce students to modern online tools and artificial intelligence technologies used in contemporary scientific research. Students will learn how to effectively utilize digital resources, applications, and platforms that support research processes, data analysis, and scientific communication. The course focuses on developing critical thinking skills, evaluating the credibility of sources, and applying AI tools in various scientific disciplines.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[CHEMMU2_U08] Prepares and presents oral presentations in various fields of chemistry in Polish and English, using acquired knowledge and skills as well as basic sources of scientific information.	The student is able to search for, evaluate, and apply modern online tools and artificial intelligence technologies to support research and presentation tasks in the field of chemistry and related sciences; is capable of integrating diverse scientific information sources in both Polish and English and using them to prepare oral presentations and written assignments.	[SU2] presentation/project/paper/report [SU8] observation of student's independent or team work
	[CHEMMU2_W05] Has extended knowledge in the field of the specialisation studied.	The student demonstrates advanced knowledge in their field of specialization and is able to integrate it with modern digital tools and artificial intelligence technologies to solve complex research problems and analyze scientific data	[SW2] presentation/project/paper/report
	[CHEMMU2_K03] Understands the need for systematic work on various projects of a long-term nature and knows how to set priorities for the implementation of undertaken tasks.	The student understands the importance of systematic work on long-term research projects and is able to set priorities and effectively plan tasks using digital tools that support project management and scientific work organization.	[SK8] observation of student's independent or team work
	[CHEMMU2_U06] Presents the results of scientific discoveries in chemistry and related disciplines in an understandable way.	The student is able to clearly and accessibly present scientific findings from chemistry and related disciplines using modern digital tools, data visualization techniques, and AI-supported solutions.	[SU2] presentation/project/paper/report [SU8] observation of student's independent or team work
	[CHEMMU2_W11] Demonstrates general knowledge about the current trends in the development of chemistry as a science and the latest discoveries in this field.	The student demonstrates in-depth knowledge of current trends in the development of chemistry and recent scientific discoveries, with particular emphasis on the role of digital tools and artificial intelligence in shaping the future of chemical research.	[SW2] presentation/project/paper/report
	[CHEMMU2_U04] Applies acquired knowledge of chemistry and related scientific disciplines.	The student is able to apply acquired knowledge from chemistry and related scientific disciplines when using digital tools and artificial intelligence technologies to support data analysis, interpretation of results, and solving research problems	[SU2] presentation/project/paper/report
Subject contents	- Scientific data visualization (tools for creating charts, infographics, and presentations, including at least BioRender; creating attractive presentations of research results) - Searching for and evaluating scientific information (critical analysis of sources, recognizing reliable publications and authors) - Artificial intelligence in scientific research (applications of AI in the analysis of chemical and biological data) - Preparing and delivering scientific presentations (using AI to support language and editorial work; oral presentations utilizing multimedia and interactive tools) - Ethics and responsible use of AI in science (limitations and risks of applying artificial intelligence).		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	completion of the course assignment.	51.0%	60.0%
	attendance at lectures.	70.0%	40.0%
Recommended reading	Basic literature	Unpublished materials prepared by the course instructor.	

	Supplementary literature	Russell, S., Norvig, P. <i>Artificial Intelligence: A Modern Approach</i> . Pearson, 2020.
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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