

Subject card

Subject name and code	Introduction to Molecular graphics, PG_00191478						
Field of study	Chemistry						
Date of commencement of studies	October 2025	Academic year of realisation of subject			2026/2027		
Education level	Master's studies	Subject group			Optional subject group		
Mode of study	full-time studies	Mode of delivery			e-learning		
Year of study	2	Language of instruction			English		
Semester of study	3	ECTS credits			4.0		
Learning profile	academic	Assessment form			credit		
Conducting unit	Laboratory of Carbohydrate Chemistry -> Department of Organic Chemistry -> Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Rafał Ślusarz				
	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						
	Additional information: <ul style="list-style-type: none"> • multimedia presentation • problem development with issues for self-knowledge evaluation • discussion on the forum 						
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		10.0		60.0	100
Subject objectives	To prepare the student to utilize the full capabilities of available molecular graphics tool programs.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[CHEMMU2_W14] Explains concepts and principles in the field of industrial property and copyright protection and recalls knowledge about the management of intellectual property resources; is able to use patent information.	the student classifies the types of intellectual property protection and understands the need to mark the ownership of one's own products	[SW4] test/exam - oral or written
	[CHEMMU2_K05] Understands the need for independent search of information in scientific literature and popular science magazines.	the student recognizes the types of graphical representations of any chemical compounds, classifies the types of representations	[SK4] test/exam - oral or written
	[CHEMMU2_U09] Has deepened ability to prepare various forms of oral presentations on chemistry in Polish and English.	the student proposes the best methods of visualizing chemical compounds, shows creativity in preparing chemical presentations	[SU4] test/exam - oral or written
	[CHEMMU2_U06] Presents the results of scientific discoveries in chemistry and related disciplines in an understandable way.	the student assesses the usefulness of types of graphical representations in presenting results	[SU4] test/exam - oral or written
	[CHEMMU2_K07] Can think and act in an entrepreneurial manner.	the student names the projection methods and defines the scope of information transmitted in each of the molecular representations	[SK4] test/exam - oral or written
	[CHEMMU2_W07] Selects experimental and theoretical techniques to the extent necessary to understand the description and modelling of medium complexity chemical processes.	the student explains the differences between straight and cross vision, illustrates the benefits of using selected presentation methods	[SW4] test/exam - oral or written
Subject contents	Outline of the problems of representing chemical structures on paper and screen, history of the development of presentation techniques, hardware and computer animations, stereography, color conventions and presentation models - examples and applications. Basic issues related to the protection of intellectual property.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	multi-component online test; one test for each of the topics covered; the final grade is the arithmetic mean of all tests	51.0%	100.0%
Recommended reading	Basic literature	sources are provided directly in each of the topics covered	
	Supplementary literature	-	
	eResources addresses		
Example issues/ example questions/ tasks being completed	<ul style="list-style-type: none"> • color conventions • graphic models • history and development of computer animation 		
Work placement	Not applicable		

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