

Subject card

Subject name and code	Organic chemistry, PG_00154393						
Field of study	Biology						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
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	2		ECTS credits		3.0		
Learning profile	academic		Assessment form		exam		
Conducting unit	Laboratory of Carbohydrate Chemistry -> Department of Organic Chemistry -> Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Janusz Madaj				
	Teachers		dr hab. Janusz Madaj				
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: 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		4.0		41.0	75
Subject objectives	presenting students with basic issues regarding organic chemistry familiarizing students with the basic types of organic compounds and their basic biological role introducing students to the basics of spectroscopy learning the basics of independently conducting chemical experiments						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BIOLL3_W17] The graduate is familiar with the principles of safety and hygiene at work and with the principles of savoir-vivre in social and professional life	The student determines the basic principles occupational health and safety	[SW4] test/exam - oral or written
	[BIOLL3_W13] The graduate knows and understands the principles of evaluating processes and phenomena using physical and/or chemical measurements	Learns the basic knowledge of organic chemistry, from the structure and nomenclature of organic compounds through basic spectroscopic methods to the occurrence of exemplary compounds in nature.	[SW4] test/exam - oral or written
	[BIOLL3_W09] The graduate knows the most important laws and rules of physics and chemistry underlying biological processes and the properties of chemical elements and compounds	Learns the basic knowledge of organic chemistry, from the structure and nomenclature of organic compounds through basic spectroscopic methods to the occurrence of exemplary compounds in nature.	[SW4] test/exam - oral or written
	[BIOLL3_U13] The graduate is able to present their own ideas and use adequate argumentation in the context of selected theoretical and practical perspectives	Describes the properties of selected elements and their compounds using chemical equations; uses basic formulas of stoichiometry and solution concentrations for chemical calculations; solves chemical tasks of medium difficulty;	[SU4] test/exam - oral or written
	[BIOLL3_U05] The graduate will be able to synthesise data from a variety of sources and draw appropriate conclusions	predicts, verifies and criticizes the results experiments; formulates opinions on basic chemical issues while expressing them carefully and critically.	[SU4] test/exam - oral or written
	[BIOLL3_U01] The graduate will be able to use basic apparatus and research tools and follow the correct sequence of operations in laboratory and field work	recognizes basic laboratory equipment and uses it to conduct simple chemical experiments; assesses the pH of aqueous solutions;	[SU4] test/exam - oral or written
	[BIOLL3_K05] The graduate is prepared to take responsibility for their own and others' safety at work and to recognise risk situations and take appropriate action	is careful when handling substances chemicals.	[SK4] test/exam - oral or written
	[BIOLL3_K01] The graduate is prepared to evaluate their own knowledge, understand the need for continuous learning and development, and is open to new ideas	Understands the need for further education; follows established procedures in laboratory work;	[SK4] test/exam - oral or written
Subject contents	Lecture topics: Basic knowledge about selected groups of organic compounds, alkanes, alkenes, aromatic compounds, alcohols, aldehydes, ketones, ethers, amines, carboxylic acids, esters of organic and inorganic acids, heterocyclic compounds, amino acids, monosaccharides, oligosaccharides and polysaccharides, amino acids and proteins, constitutional and configurational isometry, absolute configuration of the chiral carbon atom, acidity and basicity of organic compounds, oxidation and reduction of compounds organic compounds, solubility of organic compounds in water and other less polar and polar solvents.		
Prerequisites and co-requisites	Basic knowledge of general and analytical chemistry		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	written exam with open questions (tasks).	51.0%	100.0%
Recommended reading	Basic literature	Organic Chemistry, 4th Edition, Paula Yurkanis Bruice Organic Chemistry, 5th Edition, L. G. Wade General, Organic, and Biological Chemistry, 5th Edition, H. Stephen Stoker Morrison R., Boyd R. 1999. Chemia organiczna. PWN, Warszawa. McMurry John, Chemia organiczna, Wydawnictwo Naukowe PWN Kupryszewski G., Sobocińska M., Walczyna R. 1988. Podstawy preparatyki związków organicznych. Wyd. Gdańskie, Gdańsk. Walczyna R., Sokołowski J., Kupryszewski G. 1996. Analiza związków organicznych. Wyd. UG, Gdańsk.	
	Supplementary literature	non	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Consistent with the content of the lecture.		

Work placement	Not applicable
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