University of Gdańsk

Subject card

Subject name and code	Organic chemistry, PG_00196816		
Field of study	Biology		
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	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		

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_U05] The graduate is 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 is 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_W09] The graduate knows and understands at an advanced level 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_W13] The graduate knows and understands at an advanced level 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_U13] The graduate is able to present his/her 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_K05] The graduate is prepared to take responsibility for the safety of his/her and that of others, as well as to recognize hazardous 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 his/her 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
[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

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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