

Subject card

Subject name and code	Organic chemistry, PG_00146886						
Field of study	Genetics and Experimental 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		2.0		
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		prof. dr hab. Jolanta Kumirska				
	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		2.0		18.0	50
Subject objectives	presenting students with basic issues regarding organic chemistry familiarizing students with the basic types of organic compounds and their basic biological role learning the basics of independently conducting chemical experiments						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[GBEL3_K08] Responsibility for entrusted equipment/materials and respect for the work of others.	observation and assessment of the student's attitudes (the student constantly raises his/her own qualifications using the latest literature reports)	[SK4] test/exam - oral or written
	[GBEL3_U03] Proficient in using research equipment and tools, while following the correct sequence of procedures, to conduct basic physical, biological, or chemical observations and measurements in laboratory work within the field of biological sciences.	written work exam (by answering the questions, the student understands the laws and concepts related to organic chemistry)	[SU4] test/exam - oral or written
	[GBEL3_U01] Independently perform practical tasks in the field of biological sciences and related disciplines, formulate research problems, analyze their results, and draw conclusions.	written work exam (by answering the questions, the student understands the laws and concepts related to organic chemistry)	[SU4] test/exam - oral or written
	[GBEL3_W02] Knowledge of mathematics, physics, and chemistry is necessary for understanding biological phenomena and processes, as well as their application in research methodology.	written work, exam (student distinguishes and describes the structure and properties of groups of organic compounds)	[SW4] test/exam - oral or written
	[GBEL3_W09] principles of safety and hygiene, as well as ergonomics in the workplace.	written work, exam (student distinguishes and describes the structure and properties of groups of organic compounds)	[SW4] test/exam - oral or written
	[GBEL3_K02] Critical assessment of one's own knowledge and methods in the field of molecular biology and related disciplines, as well as the commercialization of research.	observation and assessment of the student's attitudes (the student constantly raises his/her own qualifications using the latest literature reports)	[SK4] test/exam - oral or written
	[GBEL3_K07] Lifelong learning and updating knowledge in the field of molecular genetics and other disciplines.	observation and assessment of the student's attitudes (the student constantly raises his/her own qualifications using the latest literature reports)	[SK4] test/exam - oral or written
	[GBEL3_K05] Responsibility for the safety of one's own work and others.	observation and assessment of the student's attitudes (the student constantly raises his/her own qualifications using the latest literature reports)	[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, nucleic acids, constitutional and configurational isometry, absolute configuration of the chiral carbon atom, basic reaction mechanisms: addition (A), substitution (S) and elimination (E), acidity and alkalinity of organic compounds, oxidation and reduction of organic compounds, solubility of organic compounds in water and other less polar and polar solvents.		
Prerequisites and co-requisites	Basic knowledge of general 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	A.1. A.1 Used during classes: 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. Organic chemistry. PWN, Warsaw. McMurry John, 2005. Organic chemistry, PWN Scientific Publishing House A.2. Studying independently by the student: Kupryszewski G., Sobocińska M., Walczyna R. 1988. Basics of the preparation of organic compounds. Ed. Gdańsk, Gdańsk. Walczyna R., Sokołowski J., Kupryszewski G. 1996. Analysis of organic compounds. Ed. 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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