University of Gdańsk

Subject card

Subject name and code	Organic chemistry, PG_00050796						
Field of study	Environmental Protection						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2025/2026		
Education level	undergraduate 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	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		3.0		
Learning profile	academic		Assessment form				
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Beata Liberek				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	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		5.0		40.0	75
Subject objectives	The aim of the course is to familiarize students with laboratory work by performing an exercise with TLC and the synthesis of two organic preparations thematically related to the lecture program; the exercises are aimed at developing the ability to independently conduct experiments and solve problems.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OŚL3_W13] Defines the basic principles of occupational safety, ergonomics and hygiene.	Recognizes laboratory equipment and explains its use; Identifies laboratory techniques; Knows the stages of synthesis and the rules of safe work with the reagents used.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW3] text preparation/written work [SW5] implementation of a problem task
[OŚL3_U11] Uses statistical methods as well as algorithms and IT techniques, including application software packages to describe environmental experiments and analysis of typical data in socio-economic activities based on science and natural sciences.	Synthesizes simple organic compounds; Describes the stages of the synthesis; Predicts the properties of the synthesized compound; Recognizes the mechanism of its creation; Analyzes and solves encountered problems in laboratory work; Verifies and evaluates, also critically, the results of one's own experimental work and is able to present them in an accessible way.	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
[OŚL3_K04] Demonstrates responsibility for the safety of her/ his own and others' work and for the workplace, and correctly follows the rules of conduct in emergencies.	Demonstrates independence and responsibility in decision-making; Adheres to the principles of teamwork and is able to take responsibility for jointly performed tasks; He is responsible for safety of own and others' work; Follows established work procedures in laboratory; Exercises caution when handling chemicals; Is able to recognize hazardous situations in a chemical laboratory.	[SK1] oral statement/conversation/ discussion [SK8] observation of student's independent or team work
[OŚL3_K05] Identifies the level of her/his knowledge and skills, demonstrates the need to update knowledge about the environment and its protection, demonstrates the need for continuous professional training and personal development.	Understands the importance of organic chemistry for environmental protection and other natural sciences; Is aware of the limitations of his own knowledge and competences, understands the need for further education; Demonstrates independence and responsibility in decision-making; Adheres to the principles of teamwork and is able to take responsibility for jointly performed tasks; In team and individual work, he is guided by ethical principles.	[SK1] oral statement/conversation/ discussion [SK8] observation of student's independent or team work
[OŚL3_U09] Prepares in Polish/ English a short description of research, observation or problem task carried out during classes using appropriate scientific terminology.	Presents the results of his experimental work in the form of a report; Analyzes the stages of his work; Proposes a reaction mechanism; Analyzes results using terminology typical of organic chemistry and laboratory work.	[SU3] text preparation/written work
[OŚL3_U02] Plans, selects appropriate research and measuring equipment and devices, performs physicochemical measurements and experiments; analyses the results and draws conclusions based on them.	Plans the synthesis, selects equipment and builds a work set; Uses basic laboratory techniques such as heating, cooling, extraction, distillation, crystallization, melting point measurement; Performs TLC analysis; Verifies and evaluates, also critically, the results of his own experimental work.	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
[OŚL3_W01] Discusses the basic concepts of mathematics, physics, chemistry and biology. Describes physical, chemical and biological phenomena occurring in nature as well as geological, geomorphological and climatic conditions of the functioning of nature.	Characterizes the groups of organic compounds assigned to the preparation; Associates the structure of the synthesized compound with its physical properties; Knows the basic reactions characteristic of a given group of organic compounds; Knows the mechanism of formation of the synthesized compound; Recognizes laboratory equipment and explains its use; Identifies laboratory techniques; Explains the necessary steps of simple organic syntheses.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW3] text preparation/written work [SW5] implementation of a problem task

<table>
<tr><td>Subject contents</td><td colspan="2">Basics of laboratory work, glassware and laboratory equipment, occupational health and safety rules, basic techniques such as: heating, cooling, extraction, distillation, crystallization, melting point measurement; Performing syntheses of two organic compounds thematically related to the lecture program; Performing thin layer chromatography (TLC).</td></tr>
<tr><td>Prerequisites and co-requisites</td><td colspan="2">Passed general chemistry course.</td></tr>
<tr><td>Assessment methods and criteria</td><td colspan="2"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Positive result in three tests: glass and apparatus and two preparations.</td><td>51.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>J. McMurry, Chemia organiczna,

J. Wade, Organic Chemistry

P. Y. Bruice, Organic Chemistry

G. Kupryszewski, M. Sobocińska, R. Walczyna, Podstawy preparatyki organicznych związków chemicznych

A. Vogel, Preparatyka organiczna</td></tr>
<tr><td>Supplementary literature</td><td>R. T. Morrison, R. N. Boyd, Chemia organiczna

P. Mastalerz, Chemia organiczna

G. Kupryszewski, Wstęp do chemii organicznej

J. Wróbel, Preparatyka i elementy syntezy organicznej</td></tr>
<tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2"></td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
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