GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Organic chemistry, PG_00057677		
Field of study	Green Technologies		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2025/2026
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study Subject group related to scientific research 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	4	ECTS credits	7.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department Of Organic Chemistry -> Faculty Of Chemistry -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Krystyna Dzierzbicka	
	Teachers		

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	45.0	30.0	0.0	0.0	0.0	75

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	75	10.0	90.0	175

Subject objectives

Familiarization with laboratory sets for typical activities performed in the laboratory, independent implementation of planned syntheses.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U05] can formulate and solve engineering tasks analytical methods, simulation as well as experimental, able to apply knowledge of basic physics and mathematics to analyze the results of experiments, is able to analyze and assess existing technical solutions	The student is able to prepare a multimedia presentation. The student is able to plan basic organic syntheses.	[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject
[K6_U01] is able to obtain information from literature, databases and other sources, is able to integrate the information obtained, to make their interpretation, as well as draw conclusions and formulate and justify opinions, take part in the discussion	Student draws a correct structural formulas of organic compounds. Student identifies separate class of organic compounds.	[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject
[K6_W02] has a basic knowledge of chemistry including general chemistry, inorganic, organic, physical, analytical, including the knowledge necessary to describe and understand the phenomena and chemical processes occurring in the environment; measurement and the determination of the parameters of these processes.	Student classifies organic reaction mechanisms of organic compounds. Student assembles laboratory sets for typical activities performed in the laboratory.	[SW1] Assessment of factual knowledge

<table>
<tr><td>Subject contents</td><td>Specification of preparations:

1. Oxidation and reduction reactions

2. Aldehydes and ketone,

3. Carboxylic acids and their derivatives

IV. Diazonium salts in organic synthesis

V. Applications of reactions of magnesium organic compounds (Grignard reagents)</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Basic inorganic chemistry. Knowledge of the symbols of elements, the valence and ability to perform simple stoichiometric calculation.</td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Implementation of the planned syntheses. Collecting the appropriate number of points in accordance with the laboratory regulations.</td><td>60.0%</td><td>100.0%</td></tr>
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</td></tr>
<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>1. D. Witt, K. Dzierzbicka, J. Rachoń Syntezy i transformacje związków organicznych.

Wydawnictwo Politechniki Gdańskiej, Gdańsk 2007.

2. K. Dzierzbicka, G. Cholewiński, J. Rachoń Aparatura i procesy jednostkowe stosowane w laboratorium chemii organicznej. Wydawnictwo Politechniki Gdańskiej, Gdańsk 2018.

3. A.I. Vogel - Preparatyka Organiczna, WNT Warszawa 2006.</td></tr>
<tr><td>Supplementary literature</td><td>1. K. Dzierzbicka, D. Witt, J. Rachoń Preparatyka związków organicznych. Ćwiczenia

laboratoryjne. Wydawnictwo Politechniki Gdańskiej, Gdańsk 2011.

2. B. Bochwic (tłum) Preparatyka Organiczna, PWN Warszawa 1971.</td></tr>
<tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:</td></tr>
</table>
</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>1. Synthesis of benzoic acid from toluene.

2. Preparation of phenol from aniline.

3. Synthesis of 1,1-diphenylethen.</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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