GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Organic chemistry, PG_00057685						
Field of study	Green Technologies						
Date of commencement of studies	October 2023		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	3		Language of instruction	Polish			
Semester of study	5		ECTS credits	4.0			
Learning profile	general academic profile		Assessment form	assessment			
Conducting unit	Department of Organic Chemistry -> Faculty of Chemistry						
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	0.0	0.0	60.0	0.0	0.0	60
	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	60	5.0	35.0	100

Subject objectives	Organic preparation techniques and methods of purifying organic compounds. Learning the properties of basic groups of organic compounds. Identification of organic compounds based on physicochemical properties. Synthesis of selected organic compounds.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[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.	The student knows the properties of the basic groups of organic compounds.	[SW1] Assessment of factual knowledge
[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	The student knows laboratory techniques such as crystallization, distillation, filtration.	[SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject
[K6_K03] turns the attention to the prestige associated with the profession and professional solidarity properly understood, shows respect for others and concern for their welfare	The student is able to independently plan and carry out the synthesis of an organic compound and uses appropriate techniques for purifying organic compounds.	[SK5] Assessment of ability to solve problems that arise in practice [SK3] Assessment of ability to organize work

Subject contents

1. Preparation of selected preparations from the following sections (*List of Preparations*):

I. Oxidation and reduction reactions

II. Aldehydes and ketones

III. Carboxylic acids and their derivatives

IV. Syntheses using diazonium salts

V. Syntheses using organomagnesium compounds

VI. Selected natural compounds

Prerequisites and co-requisites

Completed organic chemistry exercises.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
colloquium on introductory knowledge, preliminary colloquia and point assessments for the syntheses of compounds performed.	60.0%	100.0%

Recommended reading

Basic literature

1. K. Dzierzbicka, G. Cholewiński, J. Rahcoń Equipment and unit processes used in the organic chemistry laboratory. Gdańsk University of Technology Publishing House, Gdańsk 2018.

2. D. Witt, K. Dzierzbicka, J. Rachoń Syntheses and transformations of organic compounds. Gdańsk University of Technology Publishing House, Gdańsk 2007.

3. K. Dzierzbicka, D. Witt, J. Rachoń Preparation of organic compounds. Laboratory exercises. Gdańsk University of Technology Publishing House, Gdańsk 2011.

4. A.I. Vogel - Organic Preparation, WNT Warsaw 2006.

5. B. Bochwic (transl.) Organic Preparation, PWN Warsaw 1971.

	Supplementary literature	J. Gawroński, K. Gawrońska, K. Kacprzak, M. Kwit, Contemporary organic synthesis, WN PWN Warsaw 2004. J. March, Organic Chemistry - reactions, mechanisms, structure, WNT Warsaw 1975.
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Health and safety regulations applicable in the organic chemistry laboratory. Chemical properties of basic groups of organic compounds. Laboratory techniques: crystallization, distillation, extraction, filtration under reduced pressure. Stoichiometric calculations of organic reactions, conversion of concentrations, preparation of solutions. Present the mechanism of the individual steps of the Cannizzaro reaction for obtaining benzyl alcohol. Starting from benzoic acid, present the mechanism for obtaining methyl benzoate. Present the subsequent steps for obtaining 1,1-diphenylethene.	
Work placement	Not applicable	

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