GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Synthesis Methods of Organic Compounds, PG_00048898		
Field of study	Chemistry		
Date of commencement of studies	October 2020	Academic year of realisation of subject	2023/2024
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	4	Language of instruction	Polish
Semester of study	7	ECTS credits	5.0
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. Dariusz Witt	
	Teachers	prof. dr hab. inż. Dariusz Witt dr hab. inż. Grzegorz Cholewiński	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	15.0	45.0	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	40.0	125

Subject objectives

Student is able to develop new method of synthesis for organic compounds. Student is able to obtain desired compound by experimental procedure.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U06] can analyze the functioning of equipment, apparatus and technology lines used in laboratories and chemical industry, and can recognize and propose methods to solve the simple engineering tasks which he can meet as an Engineer and select and use routine methods, chemical apparatus and tools to solve practical engineering tasks, including also technological processes; can himself/herself read and make technical drawings using CAD software	Multi steps synthesis is developed by student	[SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment
[K6_U08] is capable to design and carry out the experiment which is necessary to confirm a given hypothesis and sees wider context, often beyond-technical, of the analysed phenomena	The organic synthesis is designed by student based on the compatibility of protective groups.	[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment

Subject contents

The strategy of organic synthesis
Transformations of functional groups
Protective groups
Synthetic methods of carbon skeleton formation
Synthesis of multifunctional organic compounds
Synthesis of heterocyclic compounds

Prerequisites and co-requisites

The knowledge of organic chemistry basis, structural formulas, identification of acids and bases, nucleophiles and
electrophiles, delocalized orbitals.

<table>
<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>3 colocphiums</td><td>60.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>E.J. Corey, X-M. Cheng "The Logic of Chemical Synthesis" J.Wiley&Sons, New York 1989

J. Fuhrhop, G. Penzil "Organic Synthesis" VCH 1994

S. Warren "Organic Synthesis, the disconnection approach" J.Wiley&Sons 1993

H.O. House "Nowoczesne reakcje syntezy organicznej" PWN 1979</td></tr>
<tr><td>Supplementary literature</td><td>not applicable</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">Based on the provided starting materials develop the synthesis of target molecule.</td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
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