University of Gdańsk

Subject card

Subject name and code	Chemistry of polymers, PG_00082045		
Field of study	Chemistry		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2026/2027
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	3	Language of instruction	Polish Polish
Semester of study	5	ECTS credits	1.0
Learning profile	academic	Assessment form	credit
Conducting unit			
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. Piotr Rekowski	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	15.0	0.0	0.0	15

E-learning hours included: 0.0

Additional information:

laboratory classes are conducted by: dr hab. Jarosław Ruczyński, prof. UG and dr hab. Piotr Mucha, prog. UG

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	15	2.0	8.0	25

Subject objectives

1. Polystyrene (PS) synthesis

2. Synthesis of styrene-divinylbenzene copolymer (PS-DVB)

3.Obtaining nylon thread (nylon 6.10)

4. Identification of plastics

<table>
<tr><td>Learning outcomes</td><td>
<table>
<tr><th>Course outcome</th><th>Subject outcome</th><th>Method of verification</th></tr>
<tr><td>[CHEML3_W03] Explains the relationship between the structure of matter and its observed properties.</td><td>1. defines the basic principles of polymer chemistry
2. analyzes and evaluates the influence of some polymers on the natural environment</td><td>[SW1] oral statement/ conversation/discussion
[SW3] text preparation/written work</td></tr>
<tr><td>[CHEML3_U01] Identifies, analyses and solves problems in the field of broadly understood chemistry on the basis of the acquired knowledge.</td><td>1. shows the structure of the commonly used synthetic polymers
2. uses basic descriptions of polymer microstructures
3. provides for some physicochemical properties (eg glass transition temperature) of polymers depending on their chemical structure and microstructure</td><td>[SU1] oral statement/conversation/ discussion
[SU3] text preparation/written work</td></tr>
<tr><td>[CHEML3_U08] Presents in an understandable way the basic facts about chemistry using a scientific language typical of chemical sciences.</td><td>1. illustrates polymerization stages by chemical reactions,
2. characterizes methods of radical, ionic and coordination polymerizations
3. describes the polyaddition and polycondensation</td><td>[SU1] oral statement/conversation/ discussion
[SU3] text preparation/written work</td></tr>
<tr><td>[CHEML3_U09] Is able to learn independently.</td><td>1. uses chemical terminology to the extent necessary to present(both in oral and written form) the content presented in the course;</td><td>[SU1] oral statement/conversation/ discussion
[SU8] observation of student's independent or team work</td></tr>
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<tr><td>Subject contents</td><td>Issues related to the synthesis of polymers (polystyrene and nylon 6.10) and physicochemical identification of polymers</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Passed organic chemistry exam</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>Activity and commitment during laboratory exercises</td><td>0.0%</td><td>20.0%</td></tr>
<tr><td>Synthesis and analysis reports</td><td>51.0%</td><td>80.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>Literature required to pass the course: Rabek J.F., Współczesna wiedza o polimerach, PWN 2008 Pieluchowski J., Puszyński A., Chemia Polimerow Wydawnictwo AGH, Kraków 1998 Walton D., Lorimer P., Polymers, Oxford University Press 2001 Stevens M.P., Polymer Chemistry, Oxford University Press, 1999 Monographic works provided by assistants leading classes</td></tr>
<tr><td>Supplementary literature</td><td>Various academic handbooks concerning polymer chemistry</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>Issues related to the synthesis of polymers (polystyrene and nylon 6.10) and physicochemical identification of polymers</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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