University of Gdańsk

Subject card

Subject name and code	Chemical technology, PG_00081843						
Field of study	Chemistry						
Date of commencement of studies	October 2025		Academic year of realisation of subject	2027/2028			
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			
Semester of study	6		ECTS credits	2.0			
Learning profile	academic		Assessment form	credit			
Conducting unit	Laboratory of Photocatalysis -> Department of Environmental Technology -> Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Anna Gołąbiewska					
	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	15.0	50	
Subject objectives	• To gain knowledge in the field of unit operations • To gain knowledge in the field of technological principles • To gain knowledge in the field of the criteria of chemical process concept design • To develop ability to prepare a schematic diagram • To gain the knowledge about selected apparatus and devises used in the chemical and food industry • To gain knowledge with selected technologies in industry						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[CHEML3_W10] Enumerates and describes the basic aspects of the construction, operation and use of measuring apparatus and equipment used in experimental works in the field of chemistry and related sciences.	Design the selection of basic devices and apparatus used in chemical and food industry	[SW4] test/exam - oral or written [SW5] implementation of a problem task
[CHEML3_W02] Describes the properties of elements and the most important chemical compounds, enumerates the methods of their preparation and methods of analysis.	1. The student correctly names chemical compounds in accordance with the applicable IUPAC nomenclature	[SW4] test/exam - oral or written
[CHEML3_U02] Performs analyses using experimental methods and draws conclusions based on them.	Student understands the concept of modern technological process design Student is aware of the value and responsibility for his/her own work results Student understand the needs of future education Student demonstrates creativity in individual and teamwork and keeps open to the suggestions of the teacher and other team members	[SU4] test/exam - oral or written
[CHEML3_U03] Selects the appropriate equipment and laboratory apparatus for conducting uncomplicated chemical experiments.	Student understands the concept of modern technological process design Student is aware of the value and responsibility for his/her own work results Student understand the needs of future education Student demonstrates creativity in individual and teamwork and keeps open to the suggestions of the teacher and other team members	[SU4] test/exam - oral or written [SU5] implementation of a problem task
[CHEML3_W07] Understands and describes physicochemical patterns, phenomena and processes using the language of mathematics.	Determine the criteria of chemical and technological concept design Construct of process flow diagram Classify operation units Analyze mass and energy balance Design the selection of basic devices and apparatus used in chemical and food industry	[SW4] test/exam - oral or written
[CHEML3_K05] Observes established procedures in laboratory work and is responsible for the safety of her/his and others' work.	1. Student is aware of the value and responsibility for his/her own work results 2. Student demonstrates creativity in individual and teamwork and keeps open to the suggestions of the teacher and other team members	[SK8] observation of student's independent or team work
[CHEML3_U05] Uses basic statistical methods and IT techniques to describe chemical processes and analyse experimental data.	1.Explaining the criteria of chemical and technological concept design. 2. Explaining and characterizing basis operation units 3.Classifying operation units	[SU4] test/exam - oral or written
[CHEML3_K02] Works individually demonstrating initiative and independence of activity and cooperates in a team fulfilling various roles in it.	1.Student is aware of the value and responsibility for his/her own work results 1. 2. Student understand the needs of future education 3. Student demonstrates creativity in individual and teamwork and keeps open to the suggestions of the teacher and other team members	[SK5] implementation of a problem task

Subject contents

Selected processes and unit operations in chemical technology.

<table>
<tr><td>Prerequisites and co-requisites</td><td>Prerequisites:

Knowledge of the principles of general chemistry , math

additional requirements:

principles of the inorganic chemistry, organic chemistry and analytical chemistry</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>Written assessment for each exercise</td><td>51.0%</td><td>50.0%</td></tr>
<tr><td>Report</td><td>51.0%</td><td>40.0%</td></tr>
<tr><td>Activity during classes - conducting experiments</td><td>51.0%</td><td>10.0%</td></tr>
</table>
</td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>• Warych J., Aparatura chemiczna i procesowa, Oficyna wydawnicza Politechniki Warszawskiej, Warszawa 1996
• J. Szarawara, J. Piotrowski, Podstawy teoretyczne technologii chemicznej, WNT, Warszawa, 2010
• P. Lewicki, Inzynieria procesowa i aparatura przemysłu spozywczego, WNT, 2005
• L. Synoradzki, J. Wisialski, red., Projektowanie procesow technologic</td></tr>
<tr><td>Supplementary literature</td><td>• Schmidt-Szałowski K., Sentek J., Podstawy technologii chemicznej. Organizacja procesow produkcyjnych, WPW 2001
• S.Kucharski, J.Głowinski, red., Przykłady i zadania do przedmiotu: podstawy technologii chemicznej, Politechnika Wrocławska, Wrocław, 2005</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>1. Calculation task with selected processes and unit operations2. List the steps for removing print.3. Draw and label the components for rectification.</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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