


**KAPITAŁ LUDZKI**  
 NARODOWA STRATEGIA SPÓJNOŚCI

 Projekt współfinansowany przez  
 Unię Europejską w ramach  
 Europejskiego Funduszu  
 Społecznego

**UNIA EUROPEJSKA**  
 EUROPEJSKI  
 FUNDUSZ SPOŁECZNY


<b>Course title</b>		<b>ECTS code</b>	
Chemical technology		13.3.0416	
<b>Name of unit administrating study</b>			
null			
<b>Studies</b>			
<b>faculty</b>	<b>field of study</b>	<b>type</b>	pierwszego stopnia
Wydział Chemii	Chemia	<b>form</b>	stacjonarne
		<b>specjalty</b>	chemia biomedyczna, chemia kosmetyków, analityka i diagnostyka chemiczna, chemia żywności
		<b>specialization</b>	wszystkie
<b>Teaching staff</b>			
prof. dr hab. inż. Adriana Zaleska-Medynska; dr hab. inż. Ewelina Grabowska-Musiał; dr inż. Anna Gołąbiewska; dr inż. Joanna Nadolna			
<b>Forms of classes, the realization and number of hours</b>		<b>ECTS credits</b>	
<b>Forms of classes</b>		5	
Laboratory classes, Lecture		classes - 60 h	
<b>The realization of activities</b>		tutorial classes – 30 h	
classroom instruction		student's own work – 35 h	
<b>Number of hours</b>		Total: 125 h - 5 ECTS	
Lecture: 30 hours, Laboratory classes: 30 hours			
<b>The academic cycle</b>			
2024/2025 summer semester			
<b>Type of course</b>		<b>Language of instruction</b>	
obligatory		polish	
<b>Teaching methods</b>		<b>Form and method of assessment and basic criteria for evaluation or examination requirements</b>	
<ul style="list-style-type: none"> <li>- conducting experiments</li> <li>- designing experiments</li> <li>- multimedia-based lecture</li> </ul>		<b>Final evaluation</b>	
		<ul style="list-style-type: none"> <li>- Graded credit</li> <li>- Examination</li> </ul>	
		<b>Assessment methods</b>	
		Lecture: written exam	
		Laboratory exercise: written tests, conducting experiments, report preparation	
		<b>The basic criteria for evaluation</b>	
		Lecture:	
		<ul style="list-style-type: none"> <li>• positive grade from the written exam covering the subjects mentioned in the lecture program; the grade scale according to the UG Study Regulatory;</li> </ul>	
		Laboratory exercises::	
		<ul style="list-style-type: none"> <li>• Presence in the laboratory classes and practical conducting of experiments in accordance with the instructions</li> </ul>	
		Positive evaluation of the written test (colloquium) covering the subjects mentioned in the laboratory class program; the grade scale according to the UG Study;	
		Positive evaluation of the report on laboratory experiments	
<b>Method of verifying required learning outcomes</b>			
<b>Required courses and introductory requirements</b>			
<b>A. Formal requirements</b>			
Knowledge of the principles of general chemistry , math,			

<b>B. Prerequisites</b>	
principles of the inorganic chemistry, organic chemistry and analytical chemistry	
<b>Aims of education</b>	
<p>To gain knowledge in the field of unit operations</p> <p>To gain knowledge in the field of technological principles</p> <p>To gain knowledge in the field of the criteria of chemical process concept design</p> <p>To develop ability to prepare a schematic diagram</p> <p>To gain the knowledge about selected apparatus and devices used in the chemical and food industry</p>	
<b>Course contents</b>	
<p>A. Lecture</p> <p>Chemical technology as applied science. New technological process – genesis. Chemical and technological concept of the processes. Process design and process scaling up. The principles of technological process. Process flow diagram. Basis unit operations. Crushing and milling. Screening and separation. Forming and extrusion. Distillation and rectification. Liquids homogenization. Mixing and agglomeration. Extraction. Heat exchange. Heating and cooling. Evaporation. Food freezing. Drying. Basic devices and apparatus in chemical and food industry. Examples of selected chemical process (case studies).</p> <p>B. Laboratory</p> <p>Energy balance. Fertilizers manufacturing. Heterogeneous catalysis in chemical industry. Distillation and rectification. Reactors in chemical industry.</p>	
<b>Bibliography of literature</b>	
<p>Literature required to pass the course</p> <p>Warych J., Aparatura chemiczna i procesowa, Oficyna wydawnicza Politechniki Warszawskiej, Warszawa 1996</p> <p>J. Szarawara, J. Piotrowski, Podstawy teoretyczne technologii chemicznej, WNT, Warszawa, 2010</p> <p>P. Lewicki, Inżynieria procesowa i aparatura przemysłu spożywczego, WNT, 2005</p> <p>L. Synoradzki, J. Wisiański, red., Projektowanie procesów technologicznych</p> <p>Extracurricular readings</p> <p>Schmidt-Szałowski K., Sentek J., Podstawy technologii chemicznej. Organizacja procesów produkcyjnych, WPW 2001</p> <p>S.Kucharski, J.Głowiński, red., Przykłady i zadania do przedmiotu: podstawy technologii chemicznej, Politechnika Wrocławska, Wrocław, 2005</p>	
<b>The learning outcomes (for the field of study and specialization)</b>	<b>Knowledge</b>
	<b>Skills</b>
	<b>Social competence</b>
<b>Contact</b>	
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