


KAPITAŁ LUDZKI
 NARODOWA STRATEGIA SPÓJNOŚCI

 Projekt współfinansowany przez
 Unię Europejską w ramach
 Europejskiego Funduszu
 Społecznego

UNIA EUROPEJSKA
 EUROPEJSKI
 FUNDUSZ SPOŁECZNY


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

B. Prerequisites	
principles of the inorganic chemistry, organic chemistry and analytical chemistry	
Aims of education	
<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>	
Course contents	
<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>	
Bibliography of literature	
<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>	
The learning outcomes (for the field of study and specialization)	Knowledge
	Skills
	Social competence
Contact	
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