


KAPITAŁ LUDZKI
 NARODOWA STRATEGIA SPÓJNOŚCI

 Projekt współfinansowany przez
 Unię Europejską w ramach
 Europejskiego Funduszu
 Społecznego

UNIA EUROPEJSKA
 EUROPEJSKI
 FUNDUSZ SPOŁECZNY


Course title		ECTS code	
Monographic lecture - Modern technologies in industry		13.3.1154	
Name of unit administrating study			
null			
Studies			
faculty	field of study	type	drugiego stopnia
Wydział Chemii	Chemia	form	stacjonarne
		specjalty	chemia biomedyczna, chemia i technologia środowiska, analityka i diagnostyka chemiczna, chemia obliczeniowa
		specialization	wszystkie
Teaching staff			
prof. dr hab. inż. Adriana Zaleska-Medynska; dr inż. Anna Malankowska; dr hab. inż. Ewelina Grabowska-Musiał; dr inż. Anna Gołębiewska; dr inż. Paweł Mazierski; dr inż. Aleksandra Pieczyńska; dr inż. Joanna Nadolna			
Forms of classes, the realization and number of hours		ECTS credits	
Forms of classes		3	
Lecture		classes - 30 h	
The realization of activities		tutorial classes – 10 h	
classroom instruction		student's own work – 35 h	
Number of hours		Total: 75 h - 3 ECTS	
Lecture: 30 hours			
The academic cycle			
2023/2024 winter semester			
Type of course		Language of instruction	
obligatory		polish	
Teaching methods		Form and method of assessment and basic criteria for evaluation or examination requirements	
multimedia-based lecture		Final evaluation	
		Graded credit	
		Assessment methods	
		written exam: open questions (short written answer)	
		The basic criteria for evaluation	
		<ul style="list-style-type: none"> positive mark from the written exam covering the issues listed in the program content of the lecture, the scale according to the UG Study Regulations oral exam - supplement of the written exam, but only for those students who obtained from the written test > 40% of the points possible to receive 	
Method of verifying required learning outcomes			
Required courses and introductory requirements			
A. Formal requirements			
basics of general chemistry			
B. Prerequisites			
Aims of education			
Familiarize students with the issues listed in the program content of the lecture			
Course contents			
Subjects of the lecture:			
1. Pharmaceutical industry			
2. Production of pesticides (crop protection chemicals)			

3. Application of the stopped-flow technique in industry
4. Production of hydrogen, including biohydrogen
5. Hydrogen storage and transport
6. Gas separation techniques and porous materials for gas separation
7. Techniques of separation, conversion and storage of CO₂
8. Production of photovoltaic cells
9. Production and recycling of lithium-ion batteries
10. New generation batteries
11. Paints and varnishes
12. Other protective layers
13. Glass production technologies
14. Porcelain production technologies
15. Wood and paper industry

Bibliography of literature

Literature required to pass the course

Scientific publications / books on the discussed issues - a list updated and given during lectures

Extracurricular readings

Selected individually by the student depending on the selected issues

The learning outcomes (for the field of study and specialization)

Knowledge

defines and presents modern technologies.
describes, illustrates and explains functioning of modern technologies.
characterizes the basic parameters of modern technologies work.
uses the basic technological and chemical concepts describing the process of obtaining catalysts, radioactive isotopes, biohydrogen, photovoltaic cells, API and lithium-ion batteries.
discusses the advantages and disadvantages of the production and use of energy from renewable sources.

Skills

In a clear way, both in speech and in writing, present correct technological reasoning

Social competence

understands the functioning of modern technologies
understands the importance of further education
is aware of the dangerous caused by degradation of the natural environment and understand the importance of the improving technology.
Student demonstrates creativity in individual and teamwork and keeps open to the suggestions of the teacher and other team members.

Contact

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