

Course title Wykład inżynierski - Nowoczesne technologie / Engineering lecture - Modern technologies		ECTS code 4.2.0047	
Name of unit administrating study Faculty of Chemistry			
Studies			
Field of study	Type	Form	
Chemical Business	Bachelor / Engineer	Full-time studies	
Teaching staff Prof. dr hab. inż. Adriana Zaleska-Medynska			
Forms of classes, the realization and number of hours		ECTS credits 2	
A. Forms of classes, in accordance with the UG Rector’s regulations lecture		classes - 30 h tutorial classes – 10 h student’s own work – 20 h	
B. The realization of activities in-class learning			
C. Number of hours 30 h lecture		Total: 60 h - 2 ECTS	
The academic cycle Fourth year, winter semester			
Type of course obligatory		Language of instruction Polish	
Teaching methods Lecture with multimedia presentations		Form and method of assessment and basic criteria for evaluation or examination requirements	
		A. Final evaluation, in accordance with the UG study regulations course completion (with a grade)	
		B. Assessment methods Lecture: written exam with open questions and individually prepared essay on selected technology	
		C. The basic criteria for evaluation or exam requirements positive grade from the written exam covering the subjects mentioned in the lecture program; the grade scale according to the UG Study Regulatory;	
Required courses and introductory requirements Knowledge of the principles of general chemistry, math, physics, principles of the inorganic chemistry, organic chemistry and chemical technology			
Aims of education Acquainting students with all topics mentioned in the subject program To develop the skills of critical evaluation and interpretation of the work parameters of the discussed devices and critical analysis of the literature			
Course contents A. Lecture program: 1. Shadows and brilliance of gene editing technology 2. Radiosensitization of tumors – advanced anticancer therapy 3. Corrosions as a technological and economical chemical process. Chemistry in construction. 4. Electrochemical processes and their applications 5. Sensors in chemical and environmental analysis 6. The role and review of analytical techniques in production / industry: types, structure and principle in operation, application 7. Analytical techniques in production / industry: selected aspects related to the process quality control			

8. Catalysts production and large scale –catalytic process
9. Technologies of obtaining and recovery of rare earth elements
10. Radioactive isotope extraction technologies and selected technologies for the production of radioactive isotopes containing products
11. Large scale production of selected olefins
12. Application of olefins in polymers productions
13. Large scale production and industrial applications of selected aromatic compounds
14. Peptide synthesis on a laboratory and industrial scale
15. Risk assessment of chemical substances

Bibliography of literature

A. Literature required to pass the course

Scientific publications / books on the issues discussed - a summary updated and served during lectures

B. Extracurricular readings

Adapted individually by the student depending on the chosen issues

Knowledge

1. Defines and presents modern technologies
2. Describes, illustrates and explains functioning of modern technologies
3. Characterizes the basic parameters of modern technologies

Skills

Uses terminology necessary to present (in written and oral form) the content of the subject

Social competence

1. understands the needs of long life learning
2. Is aware of the needs of the honest