UNIWERSYTET GDAŃSKI

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

A. Forms of classes, in accordance with the UG Rector's regulations
lecture

B. The realization of activities
in-class learning

C. Number of hours
30 h lecture

ECTS credits 2

classes - 30 h
tutorial classes – 10 h
student's own work – 20 h

Total: 60 h - 2 ECTS

The academic cycle
2022/23 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 compunds
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