University of Gdańsk

Subject card

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|---|---|---|---|
| Subject name and code | Chemical technology, PG_00080728 | | |
| Field of study | Chemical Business | | |
| Date of commencement of studies | October 2024 | Academic year of realisation of subject | 2025/2026 |
| Education level | Bachelor's studies | Subject group | Obligatory subject group in the field of study |
| Mode of study | full-time studies | Mode of delivery | at the university |
| Year of study | 2 | Language of instruction | Polish<br>Polish |
| Semester of study | 4 | ECTS credits | 2.0 |
| Learning profile | academic | Assessment form | credit |
| Conducting unit | Laboratory of Photocatalysis -> Department of Environmental Technology -> Faculty of Chemistry -> Rector | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | prof. dr hab. inż. Adriana Zaleska-Medynska | |
| | Teachers | dr Magdalena Miodyńska-Melzer | |

**Lesson types**

| Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|
| Number of study hours | 0.0 | 0.0 | 30.0 | 0.0 | 0.0 | 30 |

E-learning hours included: 0.0

**Learning activity and number of study hours**

| Learning activity | Participation in didactic classes included in study plan | Participation in consultation hours | Self-study | SUM |
|---|---|---|---|---|
| Number of study hours | 30 | 5.0 | 15.0 | 50 |

**Subject objectives**

- To gain knowledge in the field of unit operations
- To gain knowledge in the field of technological principles
- To gain knowledge in the field of the criteria of chemical process concept design
- To develop ability to prepare a schematic diagram
- To gain the knowledge about selected apparatus and devises used in the chemical and food industry
- To gain knowledge with selected technological processes in industry

## Learning outcomes

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [BCHINŻ_K02] Works individually demonstrating initiative and independence in actions, and effectively cooperates in a team, performing various roles in it. | demonstrates creativity in individual and teamwork and keeps open to the suggestions of the teacher and other team members | [SK8] observation of student's independent or team work |
| [BCHINŻ_K04] Demonstrates responsibility for the safety of her/ his own and others' work. | Student is aware of the value and responsibility for his/her own work results | [SK8] observation of student's independent or team work |
| [BCHINŻ_W07] Describes the construction and operating principles of basic scientific, technological and control-measuring apparatus. | Design the selection of basic devices and apparatus used in chemical and food industry | [SW4] test/exam - oral or written<br>[SW5] implementation of a problem task |
| [BCHINŻ_W05] Describes the life cycle of devices, facilities and technical systems as well as modern environment-friendly technical solutions. | understands the concept of modern technological process design | [SW5] implementation of a problem task |
| [BCHINŻ_W06] Enumerates basic unit processes and describes issues in the field of technology and chemical engineering. | Classify operation units | [SW4] test/exam - oral or written<br>[SW5] implementation of a problem task |
| [BCHINŻ_W10] Applies safety and hygiene principles when working on a test and measurement stand or in the field. | Student is aware of the value and responsibility for health and safety rules | [SW5] implementation of a problem task |
| [BCHINŻ_U02] Uses basic methods, techniques and tools in formulating and solving engineering tasks in the field of chemistry. | Determine the criteria of chemical and technological concept design<br>Construct of process flow diagram<br>Classify operation units<br>Analyze mass and energy balance<br>Design the selection of basic devices and apparatus used in chemical and food industry | [SU4] test/exam - oral or written<br>[SU5] implementation of a problem task |
| [BCHINŻ_U06] Proposes and makes simple devices, operations or unit processes related to the implementation of the technological process used in the chemical industry, taking into account material and energy balances. | Determine the criteria of chemical and technological concept design<br>Construct of process flow diagram<br>Classify operation units<br>Analyze mass and energy balance<br>Design the selection of basic devices and apparatus used in chemical and food industry | [SU5] implementation of a problem task |

## Subject contents

Wybrane procesy i operacje jednostkowe w technologii chemicznej.

## Prerequisites and co-requisites

Prerequisites:

Knowledge of the principles of general chemistry , math,

Additional requirements:

principles of the inorganic chemistry, organic chemistry and analytical chemistry

## Assessment methods and criteria

| Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|
| Written assessment for each exercise | 51.0% | 50.0% |
| Activity during classes - conducting experiments | 51.0% | 10.0% |
| Report | 51.0% | 40.0% |

## Recommended reading

Basic literature


- Warych J., Aparatura chemiczna i procesowa, Oficyna wydawnicza Politechniki Warszawskiej, Warszawa 1996 J. Szarawara, J. Piotrowski, Podstawy teoretyczne technologii chemicznej, WNT, Warszawa, 2010
- P. Lewicki, Inzynieria procesowa i aparatura przemysłu spozywczego, WNT, 2005
- L. Synoradzki, J. Wisialski, red., Projektowanie procesow technologicznych

| | | |
|---|---|---|
| | Supplementary literature | • Schmidt-Szałowski K., Sentek J., Podstawy technologii chemicznej. Organizacja procesow produkcyjnych, WPW 2001<br>• S.Kucharski, J.Głowinski, red., Przykłady i zadania do przedmiotu: podstawy technologii chemicznej, Politechnika Wro-cławska, Wrocław, 2005 |
| | eResources addresses | |
| Example issues/ example questions/ tasks being completed | 1. Calculation task with selected processes and unit operations<br>2. List the steps for removing print.<br>3. Draw and label the components for rectification. | |
| Work placement | Not applicable | |

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