University of Gdańsk

Subject card

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| Subject name and code | Basics of AutoCAD, PG_00080736 | | | | | | |
| Field of study | Chemical Business | | | | | | |
| Date of commencement of studies | October 2024 | | Academic year of realisation of subject | | 2026/2027 | | |
| 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 | 3 | | Language of instruction | | Polish | | |
| Semester of study | 6 | | ECTS credits | | 2.0 | | |
| Learning profile | academic | | Assessment form | | credit | | |
| Conducting unit | Department of Environmental Technology -> Faculty of Chemistry -> Rector | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | | dr inż. Beata Bajorowicz | | | | |
| | Teachers | | | | | | |
| Lesson types | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 0.0 | 0.0 | 45.0 | 0.0 | 0.0 | 45 |
| | 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 | 45 | | 1.0 | | 4.0 | 50 |
| Subject objectives | - to familiarize students with issues related to the use of engineering software (AutoCAD) in design work covering the broadly defined chemical industry<br>- to develop skills in solving problems related to project work, including group work | | | | | | |

## Learning outcomes

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [BCHINŻ_U08] Uses the chemical nomenclature and engineering terminology properly. | - uses engineering terminology to present the content of the subject | [SU1] oral statement/conversation/ discussion<br>[SU2] presentation/project/paper/ report |
| [BCHINŻ_W03] Describes the techniques of higher mathematics and IT tools necessary to describe and model chemical phenomena and technological processes. | - knows the principles of technical drawing and the way of preparing technical documentation using AutoCAD software | [SW1] oral statement/ conversation/discussion<br>[SW2] presentation/project/paper/ report |
| [BCHINŻ_U04] In the course of carrying out engineering tasks, s/ he uses basic statistical methods, IT techniques and uses application software packages to describe chemical processes and experimental data. | - uses the computer aided design technique to speed up the work related to the preparation of technical documentation | [SU2] presentation/project/paper/ report |
| [BCHINŻ_U02] Uses basic methods, techniques and tools in formulating and solving engineering tasks in the field of chemistry. | - uses engineering software (AutoCAD) to design equipment and devices related to the chemical industry | [SU2] presentation/project/paper/ report |
| [BCHINŻ_K03] Independently sets or implements a set action plan specifying priorities for its implementation; critically assesses its progress. | - understands the need to constantly learn and improve their skills<br>- adheres to the principles of ergonomics during long-term work at the computer | [SK1] oral statement/conversation/ discussion<br>[SK8] observation of student's independent or team work |
| [BCHINŻ_U01] On the basis of the acquired knowledge, identifies, analyses and solves engineering tasks and problems in broadly understood chemistry. | - uses the computer aided design technique to speed up the work related to the preparation of technical documentation | [SU2] presentation/project/paper/ report |
| [BCHINŻ_W04] Describes the role of experiment and computer simulation in the design process of engineering issues. | - has a wide knowledge about the possibility of using engineering software (AutoCAD) in the design and modeling of apparatus and devices related to the chemical industry | [SW2] presentation/project/paper/ report |
| [BCHINŻ_K02] Works individually demonstrating initiative and independence in actions, and effectively cooperates in a team, performing various roles in it. | - can adjust the way of work to the requirements of group work<br>- demonstrates responsibility for the timely implementation of tasks | [SK1] oral statement/conversation/ discussion<br>[SK2] presentation/project/paper/ report<br>[SK8] observation of student's independent or team work |

## Subject contents

Familiarization with the work environment in AutoCAD, discussion of individual interface elements, adaptation of the work screen to the needs of the project task, coordinate systems, basic commands and function keys
Drawing creation: basic tools for drawing two-dimensional objects, working with templates, determining the area, units (e.g. meters, millimeters), scale and other properties of the drawing
Working with layers: creating new and modifying existing layers
Drawing elements with complex shapes
Editing a drawing: copying, moving, deleting, rotating, cropping objects, chamfering and rounding corners, creating a pattern of objects, etc.
Drawing description: a reminder of the basic rules for dimensioning and description of a technical drawing and the application of these rules during working with AutoCAD
Block creation, block operations
Preparation of the drawing for printing: work in model space and worksheet, creation of a drawing table, selection of the printing device, selection of printing parameters
Cooperation of many people on one project: unification of drawing rules, copying, import and export of individual objects and entire drawings
3D modeling
Creating complex 3D objects
Creating technical drawings based on 3D models

## Prerequisites and co-requisites

- Information technology, Technical drawing, Chemical apparatus
- Basic knowledge of English, computer skills, basic knowledge of the principles of technical drawing, knowledge of basic devices and apparatus used in the chemical industry

## Assessment methods and criteria

| Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|
| Student's own work | 51.0% | 70.0% |
| Project | 51.0% | 30.0% |

## Recommended reading

Basic literature

- Pikoń A., AutoCAD 2014 PL. Pierwsze kroki, Wydawnictwo Helion, Gliwice 2014
- Kłosowski P. Ćwiczenia w kreśleniu rysunków w systemie AutoCAD 2010PL 2011PL, Wydawnictwo Politechniki Gdańskiej, Gdańsk 2011
- Studies made available by the teacher
- Pikoń A., AutoCAD 2014 PL, Wydawnictwo Helion, Gliwice 2015

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| | Supplementary literature | - Warych J., Aparatura chemiczna i procesowa, Oficyna wydawnicza Politechniki Warszawskiej, Warszawa 1996<br>- Dobrzański T. Rysunek techniczny maszynowy, Wydawnictwa Naukowo-Techniczne, Warszawa 2015 |
| | eResources addresses | |
| Example issues/ example questions/ tasks being completed | | |
| Work placement | Not applicable | |

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