Uniwersytet Gdański

KAPITAŁ LUDZKI
NARODOWA STRATEGIA SPÓJNOŚCI

Projekt współfinansowany przez
Unię Europejską w ramach
Europejskiego Funduszu
Społecznego

UNIA EUROPEJSKA
EUROPEJSKI
FUNDUSZ SPOŁECZNY

Course title	ECTS code
Basics of AutoCAD	13.3.0759

Name of unit administrating study

null

Studies

faculty	field of study	type	all
Faculty of Chemistry	Chemical Business	form	all
		specialty	all
		specialization	all

Teaching staff

dr inż. Paweł Mazierski; dr inż. Joanna Nadolna

Forms of classes, the realization and number of hours	ECTS credits
Forms of classes	2
Laboratory classes	classes - 45 h
The realization of activities	tutorial classes – 5 h
classroom instruction	student's own work – 10 h
Number of hours	
Laboratory classes: 45 hours	Total: 60 h - 2 ECTS

The academic cycle

2024/2025 summer semester

Type of course	Language of instruction
obligatory	polish

Teaching methods	Form and method of assessment and basic criteria for eveluation or examination requirements
- critical incident (case) analysis	**Final evaluation**
- discussion	Graded credit
- problem solving	**Assessment methods**
- project-based method (research, implementation, practical project)	- assignment work – project or presentation
	- assignment work – completing a specific practical assignment

The basic criteria for evaluation

The grading scale is in line with the UG Study Regulations
The final grade will include the following components: assessment of the tasks performed during the classes (the assessment will include commitment to the task, the degree of achievement of the assumed goal of the task and, in the case of some tasks, the ability to work in a group) - for each task there is an appropriate number of points. The student collects points throughout the course of the course, then the number of points obtained is converted into a grade, which will constitute 70% of the weight of the final grade for the course.
Evaluation of the final project performed during the last few meetings during the classes (the evaluation will include involvement in the project, the degree of implementation / completion of the entrusted project task and compliance of the design drawings with the rules of the technical drawing) - the evaluation of the project will constitute 30% of the weight of the final evaluation of the subject.

Method of verifying required learning outcomes

The method of verifying the acquisition of knowledge:

Assessment of the correctness of answers to questions concerning the principles of preparing a technical drawing and technical documentation with the use of AutoCAD software.

(K_BCh_W03, K_ BCh_W04).

The method of verifying the acquisition of skills:

Assessment of the correct use of engineering terminology, the correct application of the principle of technical drawing during the implementation of design tasks with the use of AutoCAD software. Assess your ability to use an appropriate AutoCAD software tool to accelerate your design work. Assessment of the ability to indicate the tools contained in the software, with the help of which the student is able to achieve the set goal.

(K_ BCh_U01, K_ BCh_U02, K_ BCh_U04, K_ BCh_U08).

The method of verifying the acquisition of social competences:

Assessment of the independence of looking for a path as soon as possible and the least energy-consuming solution of an engineering task, independence in planning the sequence of execution of individual elements of the project. Assessment of the ability to cooperate with other group members during the implementation of group tasks. Assessment of the student's compliance with the rules of work at a computer station.

(K_ BCh_K02, K_ BCh_K03).

Required courses and introductory requirements

A. Formal requirements

Information technology, Technical drawing, Chemical apparatus

B. Prerequisites

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

Aims of education

Aims of education

to familiarize students with issues related to the use of engineering software (AutoCAD) in design work covering the broadly defined chemical industry

to develop skills in solving problems related to project work, including group work

Course contents

Course 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

Bibliography of literature

A. Literature required for the final completion of the course (passing the exam):

A.1. used during classes

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

A.2. studied independently by the student

Pikoń A., AutoCAD 2014 PL, Wydawnictwo Helion, Gliwice 2015

B. Supplementary literature

Warych J., Aparatura chemiczna i procesowa, Oficyna wydawnicza Politechniki Warszawskiej, Warszawa 1996

Dobrzański T. Rysunek techniczny maszynowy, Wydawnictwa Naukowo-Techniczne, Warszawa 2015

The learning outcomes (for the field of study and specialization)	Knowledge
K_BCh_W03 describes at an advanced level the techniques	Knowledge

of higher mathematics and IT tools necessary to describe and model chemical phenomena and technological processes K_BCh_W04 describes the role of experiment and computer simulation in the design process of engineering issues K_BCh_U01 uses methods, techniques and tools in formulating and solving engineering tasks in the field of chemistry K_BCh_U02 plans, selects the appropriate research and measuring equipment and performs chemical experiments; analyses the results and draws conclusions based on them K_BCh_U04 in the course of carrying out engineering tasks, s/he uses statistical methods, IT techniques and uses application software packages to describe chemical processes and experimental data K_BCh_U08 uses the chemical nomenclature and engineering terminology properly K_BCh_K02 works individually demonstrating initiative and independence in actions, and effectively cooperates in a team, performing various roles in it K_BCh_K03 independently sets or implements a set action plan specifying priorities for its implementation	Student: 1. knows the principles of technical drawing and the way of preparing technical documentation using AutoCAD software 2. 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

Skills

Skills
Student:
1. uses engineering terminology to present the content of the subject
2. uses engineering software (AutoCAD) to design equipment and devices related to the chemical industry
3. uses the computer aided design technique to speed up the work related to the preparation of technical documentation
4. analyzes drawn drawings and 3D models in terms of the ability to produce designed objects

Social competence

Social competence
Student:
1. understands the need to constantly learn and improve their skills
2. can adjust the way of work to the requirements of group work
3. demonstrates responsibility for the timely implementation of tasks
4. adheres to the principles of ergonomics during long-term work at the computer

Contact

pawel.mazierski@o2.pl