



Information technology

Educational subject description sheet

Basic information

Study programme Chemia (General Chemistry)	Didactic cycle 2023/24
Speciality -	Subject code 02CENS.11N.01810.23
Organizational unit Faculty of Chemistry	Lecture languages English
Study level First-cycle programme	Course type Obligatory
Study form Full-time	Block Subjects not assigned
Education profile General academic	
Subject coordinator	Iwona Gulaczyk
Lecturer	Iwona Gulaczyk, Jerzy Stanek
Period Semester 1	Activities and hours • Laboratories: 30, Graded credit
	Number of ECTS points 2

Goals

Code	Goal
C1	Developing the ability to use consciously and efficiently a tool such as a computer with appropriate software.
C2	Developing the ability to analyze and solve problems using appropriately selected methods and IT means.
C3	Improvement of IT skills acquired at previous educational stages.
C4	Getting familiar with the principles of health and safety in the computer laboratory.

Entry requirements

No prerequisites required.

Subject learning outcomes

Code	Outcomes in terms of	Learning outcomes	Examination methods
Knowledge - Student:			
W1	performs calculations using user formulas and standard functions, as well as displays data using a spreadsheet.	CEN_K1_W03	Written colloquium, Oral colloquium, Test, Report
W2	creates two- and three-dimensional structures of chemical compounds and processes using the ChemSketch software.	CEN_K1_W01, CEN_K1_W07	Written colloquium, Oral colloquium, Test, Report
Skills - Student:			
U1	uses the MS-Windows and its resources.	CEN_K1_U20, CEN_K1_U23	Written colloquium, Oral colloquium, Test, Report
U2	edits and formats simple and complex documents.	CEN_K1_U02, CEN_K1_U19	Written colloquium, Oral colloquium, Test, Report
U3	performs calculations using user formulas and standard functions, as well as displays data using a spreadsheet.	CEN_K1_U08	Written colloquium, Oral colloquium, Test, Report
U4	creates a multimedia presentation and poster.	CEN_K1_U02	Written colloquium, Oral colloquium, Test, Report
U5	creates two- and three-dimensional structures of chemical compounds and processes using the ChemSketch software.	CEN_K1_U11	Written colloquium, Oral colloquium, Test, Report
U6	uses resources and services available on the network.	CEN_K1_U20	Written colloquium, Oral colloquium, Test, Report
U7	applies health and safety rules in a computer lab.	CEN_K1_U15	Written colloquium, Oral colloquium, Test, Report
U8	applies the principles of legal protection of licensed software and copyrights of Internet resources.	CEN_K1_U23	Written colloquium, Oral colloquium, Test, Report
Social competences - Student:			
K1	creates a multimedia presentation and poster.	CEN_K1_K02	Written colloquium, Oral colloquium, Test, Report
K2	applies the principles of legal protection of licensed software and copyrights of Internet resources.	CEN_K1_K05	Written colloquium, Oral colloquium, Test, Report

Study content

No.	Course content	Subject learning outcomes	Activities
1.	Health and safety in a computer lab, legal protection of computer software and copyrights of Internet resources.	U7, U8, K2	Laboratories

No.	Course content	Subject learning outcomes	Activities
2.	MS-Windows and management of its resources, user accounts, their profiles, utility software and file systems in the MS-Windows environment, number systems: binary and hexadecimal, units used in computer science.	U1, U6	Laboratories
3.	MS Word text editor - editing and formatting simple and complex documents.	U2, U6	Laboratories
4.	MS-Excel spreadsheet - data types; user formulas; standard functions; charts; regression.	W1, U3	Laboratories
5.	MS Power Point - slide types, templates, transitions between slides, custom animations, slide template.	U4, K1	Laboratories
6.	ChemSketch software for editing chemical formulas, two- and three-dimensional imaging of chemical structures and processes.	W1, W2, U5	Laboratories
7.	Working in a computer network.	U6	Laboratories
8.	Basic network services: websites, e-mail, discussion groups, social networks.	U6	Laboratories

Additional information

Activities	Teaching and learning methods and activities
Laboratories	Lecture with a multimedia presentation of selected issues, Discussion, Work with text, Solving tasks (e.g. computational, artistic, practical), Classes method, Laboratory method, Demonstration and observation, Work in groups

Activities	Credit conditions
Laboratories	<p>Credit condition includes a written colloquium (open and test questions), oral responses, and reports from classes.</p> <p>Grading scale with applied percentage distribution:</p> <ul style="list-style-type: none"> • excellent (A; 5,0): achievement by the student of the assumed learning outcomes of at least 95% • very good (B; 4,5): achievement by the student of the assumed learning outcomes of at least 85% • good (C; 4,0): achievement by the student of the assumed learning outcomes of at least 75% • satisfactory (D; 3,5): achievement by the student of the assumed learning outcomes of at least 65% • sufficient (E; 3,0): achievement by the student of the assumed learning outcomes of at least 55% • fail (F; 2,0): failure to achieve the assumed learning outcomes by the student

Literature

Obligatory

1. Materials provided by the teacher
2. ACD/ChemSketch. User's Guide

Calculation of ECTS points

Activities	Activity hours*
Laboratories	30
Preparation for classes	10
Reading the indicated literature	5
Preparation for the exam	10
Student workload	Hours 55
Number of ECTS points	ECTS 2

* academic hour = 45 minutes

Efekty uczenia się dla kierunku

Kod	Treść
CEN_K1_K02	The graduate is ready to understand the importance of presenting selected developments in chemistry in an accessible manner
CEN_K1_K05	The graduate is ready to understand and appreciate the importance of professional ethics in his/her own actions and those of others
CEN_K1_U02	The graduate can present the knowledge acquired in an accessible manner
CEN_K1_U08	The graduate can apply mathematical methods in chemical and physicochemical calculations
CEN_K1_U11	The graduate can use specialised computer software to visualise and describe chemical processes
CEN_K1_U15	The graduate can work in a group in a variety of roles including group leader
CEN_K1_U19	The graduate can analyse and develop test results and prepare a final report on the chemical and physico-chemical experiments carried out
CEN_K1_U20	The graduate can use databases to retrieve information needed in the chemist's work
CEN_K1_U23	The graduate can use information technology
CEN_K1_W01	The graduate knows and understands basic chemical laws and issues
CEN_K1_W03	The graduate knows and understands techniques of higher mathematics for the formal description of basic physical and chemical processes
CEN_K1_W07	The graduate knows and understands basic concepts of crystallochemistry