

COURSE SYLLABUS

Chemistry

Degree of higher education first (bachelor)

Specialty – 182 Consumer industry technologies.

Course status – compulsory.

Instructor: Department of Electrochemical Power Engineering & Chemistry Kislova O.V., Ph.D., Associate Professor.

1. Course description

Semesters: 3.

Scope: total number of hours – 90, including: lectures – 12 hours, practical – 12 hours, independent work – 42 hours; number of ECTS credits – 3.

Course objectives – mastering competencies – Ability to abstract thinking, analysis and synthesis. Mastering competencies, the ability to use knowledge and understanding of the basic laws of chemistry, the properties of modern chemical materials used for technological processes; ability to abstract thinking, analysis and synthesis.

Learning outcomes of the course:

know: basic chemical concepts and laws at the level necessary to achieve other results of the educational program; structure of matter, nature and types of chemical bonds; basics of energy of chemical and phase transformations, conditions of unauthorized course of chemical processes, factors influencing the rate of chemical reaction and the shift of chemical equilibrium for reversible processes; general regularities of dissolution processes, their influence on the course of various technological processes, application of inorganic and organic compounds of different classes for carrying out technological processes; features of polymeric compounds;

be able: basic chemical concepts and laws at the level necessary to achieve other results of the educational program; structure of matter, nature and types of chemical bonds; basics of energy of chemical and phase transformations, conditions of unauthorized course of chemical processes, factors influencing the rate of chemical reaction and the shift of chemical equilibrium for reversible processes; general regularities of dissolution processes, their influence on the course of various technological processes, application of inorganic and organic compounds of different classes for carrying out technological processes; features of polymeric compounds;

able to demonstrate: knowledge of fundamental chemical laws that underlie modern technological processes to solve specific production problems;

have the skills: rational use of chemicals and materials to improve modern technologies. Independently calculate the direction and conditions of chemical processes according to the laws of thermodynamics;

solve independently: the question of the choice of chemical materials of different composition for the optimization of technological processes.

Required educational components (prerequisites, co-requisites, post-requisites): higher mathematics, life safety and civil defense, physics, materials science.

Course content: Topic 1. Basic concepts and laws of chemistry. The structure of the atom and matter. Topic 2. Regularities of chemical processes. Topic 3. Characteristics of chemical elements and their compounds. Topic 4. Special issues of chemistry.

Form of final control: exam (semester 3).

Tools for diagnosing learning success: individual tasks, namely: presentations, essays, calculation works, exercises, tasks, tests, etc., questions for thematic and final control.

Language of instruction: Ukrainian.

2. Assessment

Distribution of points received by applicants for higher education

Credit

Example 1

Ongoing assessment and independent work				Thematic control	Exam	Total
T1	T2	T3	T4			
15	20	25	20	10	10	100

Distribution of points in the course

Example 2

Activities evaluated in points	T1	T2	T3	T4	Total
Speech at the laboratory work	10	15	20	5	50
Solving independent problems	5	5	5	5	20
Preparation of presentations, critical review work	-			10	10
Thematic control	10				10
Exam	10				10
Total in the course					100

Compliance with the scales for assessing the quality of learning material

Score on the national scale	Points	Assessment on the ECTS scale	Definition
excellent	90-100	A	Excellent (outstanding performance without errors)
good	82-89	B	Very good (above the average standard but with minor errors)
	74-81	C	Good (generally sound work with some errors)
satisfactory	64-73	D	Satisfactory (fair but with significant shortcomings)
	60-63	E	Fair (performance meets the minimum criteria)
unsatisfactory	35-59	FX	Fail (some more work required before the credit can be awarded)
	0-34	F	Fail (considerable further work is required)

3. Course policy:

3.1 Mandatory observance of academic integrity by higher education students, namely:

- **independent performance of all activities, tasks, forms of control provided by the working program of this course;**
- **references to the sources of information if ideas, developments, statements, information are used;**
- **compliance with the legislation on copyright and related rights;**
- **providing reliable information about the results of their own educational (scientific, creative) activities, used research methods and sources of information.**

3.2 Recognition of learning outcomes obtained in non-formal education is allowed.

3.3 To obtain a positive grade in the course, it is necessary to obtain the minimum number of points for each type of work, which is evaluated in points.

3.4 To obtain a positive assessment of the discipline it is necessary to obtain a minimum number of points for each laboratory work and individual tasks if they are provided in the guidelines for laboratory work.

3.5 In case of untimely performance of works the estimation for such works can be reduced.

3.6 Postponement of delivery / re-submission:

for good reasons (hospital, academic mobility), the work is processed independently and handed over during the semester;

without good reason, the work is processed independently and handed in during the semester but the grade decreases (75% of the possible maximum number of points).

3.7 Missed classes are processed independently with the obligatory registration of the protocol of laboratory work and the abstract on the topic of the missed lecture.

3.8 Missed classes are processed independently with the obligatory registration of the protocol of laboratory work and the abstract on the topic of the missed lecture.

In case of disagreement with the assessment, the student has the right to appeal the assessment to the head of the department.