



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Chemistry [N1|Zarz1>Che]

Course

Field of study

Engineering Management

Year/Semester

1/2

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

Polish

Form of study

part-time

Requirements

elective

Number of hours

Lecture

16

Laboratory classes

0

Other

0

Tutorials

14

Projects/seminars

0

Number of credit points

4,00

Coordinators

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Lecturers

Prerequisites

A student starting this subject should possess basic knowledge regarding chemistry. It is also necessary to possess the skills necessary to obtain information from the indicated sources.

Course objective

Improving the knowledge regarding general and inorganic chemistry and expanding it with knowledge and practical skills in order to enhance the understanding of selected aspects of modern life.

Course-related learning outcomes

Knowledge:

The student names and describes the structure of an atom and the periodic table of chemical elements [P6S_WG_16].

The student names and describes various types of chemical bonds and the systematics of inorganic compounds [P6S_WG_17].

Skills:

The student uses analytical, simulation, and experimental methods to formulate and solve tasks in the

field of chemistry [P6S_UW_10].

The student applies typical methods to solve simple problems in the field of chemistry, such as stoichiometry, chemical reactions, electrochemistry, and corrosion of metals [P6S_UW_15].

Social competences:

The student is aware of and understands the importance of non-technical aspects and consequences of activities related to chemistry, including their impact on the environment, and the associated responsibility for the decisions made [P6S_KR_01].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Knowledge acquired in the framework of lectures and exercises is verified on the basis of discussion and activity during classes, and the preparation of short presentations on a topic selected by the student.

For the lecture:

- formative assessment - active participation in classes, the possibility of scoring points for problem questions, checking knowledge through direct discussion, and the ability to defend one's point of view.
- summary rating - results from the above partial assessments.

For exercises:

- formative assessment - active participation in classes, ability to solve tasks given by the teacher, making and demonstrating the presentation on a selected topic, ability to answer questions asked by the group and the teacher related to the presentation and lectures, or a pass test,
- summary rating - results from the above partial assessments.

In the case of remote classes, the final grade will result from activity in the classroom, giving a presentation containing chemical aspects or a test on the PP e-courses platform, where the pass will be from 50% correct answers.

Programme content

Lecture: nomenclature of organic and inorganic compounds. Basic chemical laws and concepts. Regularities of the periodic table. Different methods of presenting concentrations of substances. Basics of chemical calculations. Interesting oxidation-reduction reactions. Issues and problems associated with the modern world such as water treatment, methods to prevent corrosion, pollution and environmental protection, renewable and non-renewable energy sources, motor vehicle fuel.

Exercises: the ability to write chemical formulas and chemical reactions. Simple chemistry computational tasks with practical application. Presentation of a selected chemical topic in the aspect of modern life.

Course topics

Lecture: nomenclature of organic and inorganic compounds. Basic laws and concepts chemical. The regularities of the periodic table. Different ways of representing concentrations of substances. Basics of chemical calculations. Interesting oxidation-reduction reactions. Issues and problems of the modern world such as: water treatment, ways to combat corrosion, pollution and protection of the environment, renewable and non-renewable sources of energy, fuels for the propulsion of motor vehicles.

Exercises: ability to write chemical formulas and chemical reactions. Simple calculation tasks in chemistry with practical application. Elements of the characteristics sheet of a chemical compound or of a selected preparation. Presentation of a selected issue from the area of chemical topics in terms of modern life.

Teaching methods

Interactive lecture: the student has the opportunity to ask questions and participate in discussions during the lecture, simple experiments are included to remember the material presented.

Exercises: performance of tasks and exercises given by the teacher, presentation and discussion of the problem proposed by the student.

Bibliography

Basic:

1. J.D. Lee, Zwięzła chemia nieorganiczna, PWN, Warszawa 1999.
2. Popular science reports and publications related to aspects of modern life containing elements of chemistry.

Additional:

1. L. Pajdowski, Chemia ogólna, PWN, Warszawa 1992.

Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,00
Classes requiring direct contact with the teacher	35	1,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	65	2,50