



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Chemistry

### Course

Field of study

Engineering management

Area of study (specialization)

Level of study

First-cycle studies

Form of study

part-time

Year/Semester

1/2

Profile of study

general academic

Course offered in

Polish

Requirements

elective

### Number of hours

Lecture

16

Laboratory classes

Other (e.g. online)

Tutorials

14

Projects/seminars

### Number of credit points

4

### Lecturers

Responsible for the course/lecturer:

dr hab. inż. Bogdan Wyrwas

bogdan.wyrwas@put.poznan.pl

Faculty of Chemical Technology

ul. Berdychowo 4, 60-965 Poznań

Responsible for the course/lecturer:

### 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

Has extended knowledge regarding systems, facilities and technical devices, understands their role and importance in shaping economic organizations. P7S\_WG\_04



### Skills

Has the skills necessary to use the acquired knowledge in various areas and forms, extended by a critical analysis of the effectiveness and usefulness of applied knowledge. P7S\_UW\_03

### Social competences

Can notice the cause-and-effect relationships in achieving the goals and rank the importance of alternative or competitive tasks. P7S\_KK\_02

### 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:

- a) 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.
- b) summary rating - results from the above partial assessments.

For exercises:

- a) 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,
- b) summary rating - results from the above partial assessments.

### 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.

### 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  | 90    | 4,0  |
| Classes requiring direct contact with the teacher   | 30    | 1,5  |
| Student's own work (literature studies, preparation for tutorials, presentation) <sup>1</sup> | 60    | 2,5  |

<sup>1</sup> delete or add other activities as appropriate