



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Organic Chemistry

### Course

Field of study

Chemical Technology

Area of study (specialization)

-

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

II/3

Profile of study

general academic

Course offered in

English

Requirements

compulsory

### Number of hours

Lecture

Laboratory classes

Other (e.g. online)

30

0

Tutorials

Projects/seminars

0

### Number of credit points

3

### Lecturers

Responsible for the course/lecturer:

dr hab. inż. Łukasz Chrzanowski

Responsible for the course/lecturer:

### Prerequisites

At the beginning of the course, the student should have a basic knowledge of general chemistry. The student should know the symbols of the elements and the principles of chemical bonds creation, and should comprehend and discuss selected issues of inorganic chemistry at ease - catalytic properties of metals, complexes formation. The student should have the ability to associate facts and to obtain information from indicated sources.

### Course objective

The aim of the course is to become familiar with the apparatus and equipment used in organic synthesis and the basic techniques used for the separation and purification of organic compounds - distillation, extraction, sublimation and crystallization.

### Course-related learning outcomes

Knowledge

K\_W03 has the knowledge of chemistry necessary to understand chemical phenomena and processes

P6S\_WG



K\_W08 has a structured, theoretically underpinned general knowledge of general and inorganic, organic, physical and analytical chemistry P6S\_WG

K\_W09 has the necessary knowledge of both natural and synthetic raw materials, products and processes used in chemical technology, and the directions in chemical industry development (in the country and worldwide) P6S\_WG P6SI\_WG

#### Skills

K\_U01 is able to obtain the necessary information from literature, databases and other sources related to chemical sciences, to properly interpret them, draw conclusions, formulate and justify opinions P6S\_UW

K\_U24 predicts the reactivity of chemical compounds based on their structure, estimates the thermodynamic and kinetic effects of chemical processes P6S\_UW

K\_U20 uses basic laboratory techniques for the synthesis, secretion and purification of chemicals P6S\_UW P6SI\_UW

#### Social competences

K\_K06 can think and act in an entrepreneurial way P6S\_KO

K\_K01 understands the need for further education and improvement of professional, personal and social competences P6S\_KKK

K\_K04 is able to properly define priorities for the implementation of the designated task P6S\_KR

#### **Methods for verifying learning outcomes and assessment criteria**

Learning outcomes presented above are verified as follows:

Short tests of the theoretical knowledge necessary for the safe performance of the laboratory exercise. Execution of planned experiments with further description of observations and correct execution of necessary preparative calculations. Crediting on the basis of the performance of the planned experiments and passing all tests from the theoretical knowledge.

#### **Programme content**

Within the course the student performs practical exercises such as simple distillation, steam distillation, distillation of flammable solvents, crystallization, sublimation and extraction.

#### **Teaching methods**

Laboratories with practical acquaintance with the chemical apparatus and equipment used in the synthesis and separation of organic compounds, with oral questioning of the course of the exercises and keeping laboratory notebooks.



## Bibliography

### Basic

1. Robert Morrison, Robert Boyd, Organic Chemistry, Prentice Hall
2. John McMurry, Organic Chemistry, Cengage Learning

### Additional

1. Arthur Vogel, Practical Organic Chemistry, Longmans
2. Susan McMurry, Organic Chemistry, Brooks

## Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3,0
Classes requiring direct contact with the teacher	45	1,8
Student's own work (literature studies, preparation for laboratory classes, preparation for tests) <sup>1</sup>	30	1,2

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