



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Pro-ecological solutions in production processes [S2IChiP1>RPwPP]

### Course

Field of study	Year/Semester
Chemical and Process Engineering	1/2
Area of study (specialization)	Profile of study
Bioprocesses and Biomaterials Engineering	general academic
Level of study	Course offered in
second-cycle	polish
Form of study	Requirements
full-time	elective

### Number of hours

Lecture	Laboratory classes	Other (e.g. online)
15	0	0
Tutorials	Projects/seminars	
0	0	

### Number of credit points

1,00

### Coordinators

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### Lecturers

### Prerequisites

Basic, ordered, theoretically founded, systematic knowledge in the field of chemical technology, also covering key issues regarding natural and synthetic raw materials, products and processes used in chemical technology, as well as methods for assessing product quality. The ability to assess the technological suitability of raw materials and the selection of the technological process in relation to the product quality requirements, the ability to obtain information from literature, databases and other sources also in English, as well as interpret the obtained data, draw conclusions, and formulate and justify opinions.

### Course objective

Expanding knowledge in the field of chemical technology and related fields and product quality assessment, the basics of production management enabling students to link their theoretical knowledge with the experience of practitioners passed on during lectures. Deepening students' knowledge of how to conduct real technological processes, problems arising during the implementation of such processes, how to respond and solve them.

## Course-related learning outcomes

### Knowledge:

1. expanded and in-depth knowledge in the field of chemical technology and other related areas of science, allowing to formulate and solve complex problems related to chemical technology. [k\_w03]
2. knowledge of complex chemical processes, including the appropriate selection of materials, raw materials, methods, techniques, apparatus and equipment for carrying out chemical processes and characterizing the products obtained. [k\_w04]

### Skills:

the ability to obtain and critically evaluate information from literature, databases and other sources, and formulate opinions and reports on this basis. [k\_u01]

### Social competences:

1. awareness of the need for lifelong learning and professional development. [k\_k01]
2. awareness of the limitations of science and technology related to chemical technology, including environmental protection. [k\_k02]

## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:

Test on a e-learning platform (3 questions to each lecture).

Points scored Grade

> 10 insufficient 2.0

10 ÷ 11 sufficient 3.0

12 ÷ 13 sufficient plus 3.5

14 ÷ 15 good 4.0

16 ÷ 17 good plus 4.5

18 very good 5.0

## Programme content

Lectures cover a variety of topics related to chemical technology in various industries (food, pharmaceutical, fertilizers), product quality assessment, production management, environmental protection regulations. Each lecture is conducted by various practitioners, representatives of companies from Poznań and Greater Poland.

Lectures are conducted as part of two thematic paths Technological processes in practical aspects and Proecological solutions in production processes (each of them has a separate syllabus):

- Path 2: Proecological solutions in production processes - the lectures cover the subject of soft skills - production process management, project management and technological problems, for example, in the pharmaceutical and food industry, validation of methodologies and quality control of results, principles of transport of hazardous substances.

## Teaching methods

Lecture, discussion

## Bibliography

Basic

Determined directly by the lecturer.

Additional

Determined directly by the lecturer.

## Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,00
Classes requiring direct contact with the teacher	15	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	10	0,50