COURSE DESCRIPTION CARD - SYLLABUS

Course name
Professional training 4 weeks [S2TOZ1>PD]

Course

Field of study
Circular System Technologies

Year/Semester
1/1

Area of study (specialization)
Material recycling and chemical recovery

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
0

Laboratory classes
0

Other
160

Tutorials
0

Projects/seminars
0

Number of credit points

5,00

Coordinators

dr hab. Justyna Werner
justyna.werner@put.poznan.pl

Lecturers

Prerequisites

The student has advanced, structured, theoretically founded knowledge covering key issues in the field of circular system technologies. Is able to obtain information from the indicated sources, correctly interprets them and draws conclusions.

Course objective

The student deepens knowledge in the field of circular system technologies that are used in various industries such as the chemical industry, energy, construction, mining, pharmaceutical industry, municipal economy, plastics processing, manufacturing industry, as well as in design offices and scientific institutions.

Course-related learning outcomes

Knowledge:
1. The student has advanced, structured and theoretically based knowledge of the principles of the circular system and the reasons for its implementation [K_W02]
2. The student has advanced, detailed knowledge covering issues in the field of sustainable production, principles of conduct and development trends in the circular system [K_W03]
3. The student has in-depth and theoretically based knowledge of modern environmentally friendly

technologies [K_W05]
4. The student has extended knowledge allowing to recognize and differentiate factors hazardous to the environment and knows the principles of waste neutralization and recovery taking into account the requirements of the circular system [K_W06]
5. The student has in-depth knowledge allowing to design technological processes based on the principles of the circular system [K_W07]
6. The student has skills in the classification of selected waste materials and the use of appropriate recycling and recovery techniques, in accordance with applicable law [K_W11]
7. The student has in-depth knowledge of recycling methods material, raw material and energy recovery from waste materials necessary for designing, optimizing and implementing innovative technological processes [K_W12]
8. The student knows and understands the basic processes in the life cycle of devices and apparatuses, objects and technical systems used in circular technologies [K_W14]

Skills:
1. The student has the ability to communicate verbally with specialists in the area of circular system and related fields [K_U01]
2. The student is able to determine and critically evaluate technical solutions for waste recycling in accordance with the principles of circular system [K_U04]
3. The student has the ability to selectively adapt knowledge in the field of chemistry and related fields in planning and implementing research and technological tasks in the area of technologies based on circular system and analyze their impact on the natural environment [K_U08]
4. The student is able to cooperate with other people and take a leading role in a team in order to solve engineering problems related to methods and devices used in technologies, including those related to circular system [K_U09]
5. The student has the ability to select methods of recycling, chemical recovery and disposal of various wastes and formulate assumptions necessary for designing innovative solutions based on the principles of circular system [K_U10]
6. The student is able to plan and conduct experiments related to circular technologies and is able to interpret the obtained results and draw conclusions [K_U12]

Social competences:
1. The student is aware of personal responsibility resulting from the professional role performed and the emergence of moral and ethical problems in the context of professional activities [K_K01]
2. The student critically evaluates his/her knowledge, understands the need for further education and improving his/her professional, personal and social competences [K_K03]
3. The student is able to think and act in an entrepreneurial manner, while being aware of his/her social role and public interest [K_K04]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Credit based on a tripartite agreement or referral to an internship and a certificate of completion of the internship and a report on the course of the internship.

Programme content

Practical familiarisation with circular system technologies and related technologies in accordance with the framework internship programme and course topics.

Course topics

Circular System Technologies - workplaces
The workplace as a place of future professional activity.
Understanding the circular system technologies used in the plant.
Detailed familiarization with the technology chosen by the plant.
The methods used to control process efficiency and product quality.
Buisness practice and information acquired during education.
Independent task in the position indicated by the workplace.
The plant's activities in the field of environmental protection.

Teaching methods

Practical classes at the workplace, design office, scientific institution.

Bibliography

Basic:
Information materials provided by the company.

Additional:
Documents, instructions in force in the workplace - the place of the internship

Breakdown of average student's workload

	Hours	ECTS
Total workload	150	5,00
Classes requiring direct contact with the teacher	0	0,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	150	5,00