



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Process Equipment

		Course
Field of study		Year/Semester
Environmental Protection Technologies		II/3
Area of study (specialization)		Profile of study
-		general academic
Level of study		Course offered in
First-cycle studies		Polish
Form of study		Requirements
full-time		compulsory

		Number of hours
Lecture	Laboratory classes	Other (e.g. online)
30	0	0
Tutorials	Projects/seminars	
0	0	
Number of credit points		
2		

		Lecturers
Responsible for the course/lecturer:		Responsible for the course/lecturer:
Piotr Wesołowski, Ph.D		Faculty of Chemical Technology
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Prerequisites

Knowledge: The student has a basic knowledge of: mathematics, physics, chemistry, information technologies and engineering graphics, obtained during other courses in semesters 1 and 2 in the field of Environmental Protection Technologies, enabling understanding of the principles of designing process apparatus and preparing of technical documentation.

Skills: The student is able to acquire and supplement knowledge about the construction and operation of process equipment from academic textbooks, scientific studies and the internet sources. Has the ability to self-education, can work individually and in a team. Student is able to prepare technical drawings of apparatus and their elements and knows the basic principles of preparing technical documentation.

Social competencies: The student understands the need to constant improvement of the skills and the need to enrich the knowledge acquired during the course. He/she is aware of the responsibility for the tasks carried out in a team.



Course objective

Obtaining knowledge of the apparatus used in various unit processes carried out in the chemical industry and other related industries.

Course-related learning outcomes

Knowledge

1. Has basic knowledge related to the selection of materials used in the construction of equipment and installations applied in environmental technologies [K_W03]
2. Can point out and characterize basic terms of chemical engineering, machinery and equipment of the chemical and related industries [K_W10]
3. Has basic knowledge about the life cycle of products, equipment and installations in environmental technologies [K_W13]

Skills

1. Works individually and cooperates effectively in a team [K_U02]
2. Has the ability to self-education [K_U06]
3. Uses communication and information techniques for solutions typical for engineering activities, e.g. scale-up [K_U09].

Social competences

1. Understands the need to learn and improve professional skills [K_K01]
2. Understands the importance of non-technical aspects and effects of engineering activities, including the impact on the environment and associated with it responsibility for decisions [K_K02].
3. Is aware of the responsibility for shared tasks, connected with teamwork [K_K03].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Current activity control. Written exam.

Programme content

The lecture conducted in parallel with the design classes aimed at acquiring the ability to prepare technical documentation of the designed process equipment. Students have the option of choosing an alternative project. During the lecture, a wide review of various design solutions of the apparatus enabling the exchange processes: momentum, heat and mass is performed.

Teaching methods

1. Participation in the lecture
2. Participation in consultations
3. Written exam



Bibliography

Basic

1. Wesołowski P., Borowski J.: Aparatura chemiczna i procesowa. I. Wymienniki ciepła i masy, Wydawnictwo Politechniki Poznańskiej, Skrypty, Poznań 2002.
2. Wesołowski P., Szaferki W., Borowski J.: Aparatura chemiczna i procesowa. II. Mieszalniki i separatory, Wydawnictwo Politechniki Poznańskiej, Skrypty, Poznań 2003.

Additional

1. Błasiński H., Młodziński B.: Aparatura przemysłu chemicznego, WNT, Warszawa 1976.
2. Pikoń J.: Aparatura chemiczna, t. I, II, III. SUPŚ w Gliwicach. Gliwice 1972/73.
3. Pikoń J.: Podstawy konstrukcji aparatury chemicznej, t. I i II, PWN, Warszawa 1979.
4. Stręka F.: Mieszanie i mieszalniki, WNT, Warszawa 1981.

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,0
Classes requiring direct contact with the teacher	35	1,4
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) ¹	15	0,6

¹ delete or add other activities as appropriate