

**DOCTORAL SCHOOL OF WROCLAW UNIVERSITY OF SCIENCE AND
TECHNOLOGY**

SUPERVISOR/TEAM/ DECLARING/CONDUCTING COURSE: Jolanta Warchol
DEPARTMENT: Chemical Department
SCIENTIFIC DISCIPLINE: Chemical Engineering

COURSE CARD

Course name in Polish: Technologie oczyszczania wód specjalnego przeznaczenia

Course name in English: Purification technology for special purpose water

Course language Polish / ~~English~~*

University-wide general course type*:

The course is intended for all PhD students: YES / NO

~~1) BASIC COURSE~~

~~2) SPECIALIST COURSE~~

3) SEMINAR

~~4) HUMANISTIC COURSE~~

~~5) LANGUAGE~~

Subject code: CIQ100105S

* delete as applicable

	Lecture	Foreign language course	Seminar	Mixed forms
Number of hours of organized classes in university (ZZU)			15	
Grading			Oral presentation	Exam, inspection, evaluation classes
Number of ECTS points			0	

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Basic knowledge about separation processes
2. Basic knowledge about diffusion processes

COURSE OBJECTIVES

- C1. To acquaint PhD students with water treatment technology aspects
 C2. Develop the ability to synthetic thinking in terms of selection of unit processes in water purification

PROGRAM CONTENTS

Form of classes – lecture (Lec)		Number of hours
Lec1	History of water treatment	2
Lec2	Standards, requirements and water quality monitoring methods	2
Lec3	Technology of underground water treatment	2

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Lec4	Technology of surface water treatment	2
Lec5	Purification of water for drinking purposes	3
Lec6	Purification of water for energy industry	2
Lec7	Purification of water for food industry	2
	Total hours:	15

Form of classes – foreign language course (Lng)		Number of hours
Lng1		
Lng2		
Lng3		
..		
	Total hours:	

Form of classes – seminar (Sem)		Number of hours
Sem1		
Sem2		
Sem3		
...		
	Total hours:	

Form of classes – mixed forms (mix)		Number of hours
Mix1		
Mix2		
Mix3		
...		
	Total hours	

TEACHING TOOLS USED
N1. Informative lecture with elements of a problem lecture. N2. Multimedia presentation

ACHIEVED SUBJECT LEARNING OUTCOMES		
Type of learning outcome	Code of learning outcome	Assessment of learning outcome
Knowledge	P8U-W	Knows how to present contributions of other authors, knows literature
Knowledge	P8S-WG	Has knowledge on sorption processes and their modelling
...		
Skills	P8U-U	Knows how to use bases WoS and Scopus for a search of sorption-based processes usage
Skills		
...		

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Social competence	P8S-KO	Knows what means collaboration in conducting the common research and analyses
Social competence		
...		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] A. Kowal, M. Świdorska-Bróż, Oczyszczanie Wody, PWN, 2007.
- [2] Z.Z. Noor, N. Sabli, The Science and Technology of Industrial Water Treatment, CRC Press, 2010.
- [3] M.J. Slater, Sustainable Water Treatment: Innovative Technologies, CRC Press, 2017.

SECONDARY LITERATURE:

- [4] E. Worch, Adsorption Technology in Water Treatment, Walter de Gruyter, 2012

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

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