DOCTORAL SCHOOL OF WROCŁAW UNIVERSITY OF SCIENCE AND TECHNOLOGY

SUPERVISOR DECLARING/CONDUCTING COURSE: Joanna Wolska
DEPARTMENT:
SCIENTIFIC DISCIPLINE: chemical engineering

COURSE CARD

Course name in Polish: Innowacyjne materiały polimerowe
Course name in English: Innovative polymer materials
Course language: polish/ ~~english~~
The course is intended for all PhD students: YES / ~~NO~~
1) ~~BASIC COURSE~~
2) SPECIALIST COURSE
3) ~~SEMINAR~~
~~4) HUMANISTIC COURSE~~
~~5) LANGUAGE~~
~~6) RESEARCH SKILLS~~

Subject code: CIQ100253W

* delete as applicable

	Lecture	Foreign language course	Seminar	Mixed forms
Number of hours of organized classes in university (ZZU)	30			
Grading	Exam	Exam	Oral presentation	Exam, inspection, evaluation classes

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. organic chemistry

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COURSE OBJECTIVES

C1 Learning about the latest achievements in the field of polymer materials
C2 Understanding the influence of polymeric materials on the development of other areas of life and technology

PROGRAM CONTENTS

	Form of classes	Number of hours
Le1	Introduction to polymer materials (tutor J. Wolska)	2
Le2	Polymers - materials connecting fields (tutor Dr. K. Smolińska-Kempisty)	2

Le3	Molecularly imprinted polymers - characteristics, application (tutor J. Wolska)	2
Le4	Polymer-based sensors (tutor J. Wolska)	2
Le5	Smart polymers - characteristics and application (tutor Dr. K. Smolińska-Kempisty)	2
Le6	Hydrogels - properties, characteristics and application (tutor Dr. A. Lipowczan)	2
Le7	Polymers used in medicine (tutor Dr. K. Smolińska-Kempisty)	2
Le8	Polymer materials used in processes using potential differences (tutor Dr. A. Siekierka)	2
Le9	Polymer membranes - the latest applications (Prof. M. Bryjak)	2
Le10	Polymer materials used in membrane systems to generate energy (tutor Dr. A. Siekierka)	2
Le11	Sorbents and polymer resins for the so-called "Special" tasks (tutor prof. D. Jermakowicz-Bartkowiak)	2
Le12	Polymer nanocomposites (tutor Dr. P. Cyganowski)	2
Le13	Polymer nanocatalysts with metal nanoparticles (tutor Dr. P. Cyganowski)	2
Le14	New directions of using recycled polymers (tutor J. Wolska)	2
Le15	Summary, new directions and prospects for the use of polymeric materials, exam (tutors J. Wolska, K. Smolińska-Kempisty)	2
	Total hours	30

TEACHING TOOLS USED
N1. Lectures N2. Mulitmedia presentations N3. Consultation

ACHIEVED SUBJECT LEARNING OUTCOMES		
Type of learning outcome	Code of learning outcome	Assessment of learning outcome
SzD_W6	P8S-WK	exam
SzD-U3	P8S_UK	exam

PRIMARY AND SECONDARY LITERATURE
PRIMARY LITERATURE: [1] Chemia polimerów praca zbiorowa pod redakcja Z. Folriańczyka, S. Penczka Tom I-III [2] Polimery i ich zastosowania interdyscyplinarne J. F. Rabek tom I i II **SECONDARY LITERATURE:** [1] The latest literature reports in the field of polymer chemistry
SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)
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