

FACULTY OF CHEMISTRY					
SUBJECT CARD					
Name of subject in Polish	Polimery w medycynie				
Name of subject in English	Polymers in Medicine				
Main field of study (if applicable):					
Specialization (if applicable):	Medicinal Chemistry				
Profile:	academic				
Level and form of studies:	2nd level, full-time				
Kind of subject:	obligatory				
Subject code	CHC024055				
Group of courses	NO				
	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	15				
Number of hours of total student workload (CNPS)	60				
Form of crediting	crediting with grade				
For group of courses mark (X) final course					
Number of ECTS points	2				
including number of ECTS points for practical (P) classes					
including number of ECTS points for direct teacher-student contact (BK) classes	0.5				
PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES					
1. Completed course of organic chemistry					
SUBJECT OBJECTIVES					
C1 To show what polymers can be used in medicine					
C2 To describe specificity of polymers					
C3 To allow designing of new medical appliances from polymers					
SUBJECT EDUCATIONAL EFFECTS					
relating to knowledge:					
PEK_W04 Knows methods for chemical, physico-chemical and biochemical analyses of matter					
relating to skills:					
PEK_U03 knows what methods and tools can be used for practical evaluation of matter					
relating to social competences:					
PEK_K01 can collaborate within the group					
PROGRAMME CONTENT					
Lectures					
Lec 1	History of polymers, definitions, preparation, properties,				2
Lec 2	Polymers and copolymers in condensed phase, blends, phase transitions, characteristic temperatures, surfaces				2
Lec 3	Transport phenomena in polymers, Fickian and abnormal diffusions, swelling of polymers				2
Lec 4	Artificial organs: kidney, liver, skin, lung.				2
Lec 5	Drug delivery systems, scaffolds				2
Lec 6	Polymers in manufacturing of drugs: sorbents and membranes,				2

Lec 7	Polymers used as auxiliaries in medical treatment	2
Lec 8	Written examination	1
	Total hours	15
TEACHING TOOLS USED		
N1. Lectures N2. Consultation		
EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT		
Evaluation (P – concluding (at semester end)	Educational effect number W04, U03, K01	Way of evaluating educational effect achievement - written examination
C Examination		
PRIMARY AND SECONDARY LITERATURE		
PRIMARY LITERATURE: [1] M.Bryjak, I.Gancarz, Polymers in medicine, wyd PWr 2010		
SECONDARY LITERATURE: [1] L.H.Sperling, Introduction to physical polymer science [2] F.Billmayer, Textbook of polymer science		
SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)		
Prof. Marek Bryjak (marek.bryjak@pwr.edu.pl) Dr. Piotr Cyganowski (Piotr.cygnowski@pwr.edu.pl)		