

FACULTY OF CHEMISTRY					
SUBJECT CARD					
Name of subject in Polish	Fizyczna chemia organiczna				
Name of subject in English	Physical organic chemistry				
Main field of study (if applicable):	Chemistry				
Specialization (if applicable):	Medicinal Chemistry				
Profile:	academic				
Level and form of studies:	2nd level, full-time				
Kind of subject:	obligatory				
Subject code	CHC024013				
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. Knowledge of organic chemistry, theoretical and practical					
SUBJECT OBJECTIVES					
C1 Learning the type of bonds and molecular interactions					
C2 Learning the basic kinetic and thermodynamic phenomena					
C3 Learning acid base interaction					
C4 Learning basics of reaction mechanism in organic chemistry					
C5 Learning the symmetry relation within molecule					
SUBJECT LEARNING OUTCOMES					
relating to knowledge:					
PEK_W01 – He understands the basic thermodynamics.					
PEK_W02 – He is able to write and predict reaction mechanism					
PEK_W03 – He is able to define the symmetry of the molecule					
PEK_W04 – He is able to define the type of intra and inter molecular interactions					
PROGRAMME CONTENT					
Lectures					
Lec 1-2	Bonds in organic chemistry				2
Lec 3-4	Inter and intramolecular forces				2
Lec 5-6	Acid base equilibria				2
Lec 7-8	Introduction to reaction mechanisms. Reactive intermediates				2

Lec 9-10	Reaction mechanism: electrophilic addition and substitution, radical mechanism	2
Lec 11-12	Reaction mechanism: nucleophilic addition and substitution, elimination mechanism	2
Lec 13-14	Symmetry of molecules	2
Lec 15	Evaluation test	1
	Total hours	15
TEACHING TOOLS USED		
N1. Lecture with multimedia presentation N2. Own work N3.		
EVALUATION OF SUBJECT LEARNING OUTCOMES ACHIEVEMENT		
Evaluation (F – forming (during semester), P – concluding (at semester end))	Learning outcomes number	Way of evaluating learning outcomes achievement
P (lecture)	PEK_W01, PEK_W02, PEK_W03, PEK_W04,	test
PRIMARY AND SECONDARY LITERATURE		
<u>PRIMARY LITERATURE:</u> 1. Bruckner Bernard Organic mechanisms, reactions, stereochemistry and synthesis 2. Jones Richard, Physical and mechanistic organic chemistry 3. Carter Robert, Molecular symmetry and group theory 4. John McMurry, Organic chemistry		
<u>SECONDARY LITERATURE:</u> 1. Ilich, Predrag Peter, Selected problems in physical chemistry 2. Deslongchamps, Stereoelectronic effects in organic chemistry 3. Jaffe, Hans Symmetry in chemistry		
SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)		
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