

Nazwa zajęć/ <i>Course title:</i>	Chemia organiczna	ECTS	6
Nazwa zajęć w j. angielskim/ <i>Course title in English:</i>	Organic chemistry		
Zajęcia dla kierunku studiów/ <i>Degree program name:</i>	Biotechnology		

Język kursu/ <i>Course language:</i> English		Poziom studiów/ <i>Study level:</i> I	
Typ studiów/ <i>Form of studies:</i>	x intramural .. extramural	Status zajęć/ <i>Course status</i>	x podstawowe/ <i>Basic</i> kierunkowe/ <i>major</i>
		X obowiązkowe/ <i>mandatory</i> do wyboru/ <i>elective</i>	Semestr/ <i>Semester:</i> 2 semestr zimowy/ <i>winter semester</i> X semestr letni/ <i>summer semester</i>
Rok akademicki/ <i>Academic year:</i>		2022/2023	Numer katalogowy/ <i>Catalogue number:</i> BBT_BTa-1S-2L-14

Koordinator zajęć/ <i>Course coordinator:</i>	dr Ewa Majewska			
Prowadzący zajęcia/ <i>Teachers responsible for the course:</i>	Employees of the Department of Organic Chemistry, Department of Chemistry			
Założenia, cele i opis zajęć/ <i>Aims, objectives and description of the course:</i>	<p>Basic course in organic chemistry with particular emphasis on the relationship between the structure of the compound and its properties, as well as the reactions significant for changes in living organisms. Relation of intermolecular interactions and chemical reactions with biochemistry and physiology. Topics of the lecture: Structure of organic compounds including stereochemistry; basic principles of organic nomenclature. Overview of the properties and reactions of the main groups of organic compounds: hydrocarbons (saturated, unsaturated, aromatic), alcohols, halogen derivatives, carbonyl and carboxylic compounds, amines and multifunctional compounds, with particular emphasis on the relationship between the structure and properties of organic substances. Biomolecules - fats, saccharides, peptides. Topics of laboratory classes: methods of separation and purification of organic compounds (distillation, crystallization, extraction, chromatography), synthesis of typical organic preparations</p>			
Formy dydaktyczne, liczba godzin/ <i>Teaching forms, number of hours:</i>	<p>a) Lecture number of hours ... 30 b) Laboratory classes number of hours 30</p>			
Metody dydaktyczne/ <i>Teaching methods:</i>	Multimedia lecture, discussion, experiment, problem solving, the possibility of using distance learning in the case of necessary			
Wymagania formalne i założenia wstępne/ <i>Formal requirements and prerequisites</i>	Inorganic chemistry and laboratory techniques used in inorganic chemistry The student should know the material of chemistry applicable in general secondary school at the elementary level			
Efekty uczenia się/ <i>Learning outcomes:</i>	treść efektu przypisanego do zajęć/ <i>the content of the effect assigned to the course:</i>		<p>Odniesienie do efektu kierunkowego <i>/Relation to the course outcomes</i></p> <p>Siła dla ef. kier* <i>/Impact on the course outcomes*</i></p>	
Wiedza (absolwent zna i rozumie) <i>/Knowledge:</i> (the graduate knows and understands)	W1	knows the basic functional groups occurring in organic compounds and is able to determine their reactivity	K_W07	2
	W2	knows the basic types of biomolecules, their general formulas and their ability to react	K_W05	1
	W3	knows and understands the essence of intermolecular interactions and is able to interpret the structure of proteins, sugars and nucleic acids on their basis	K_W05 K_W10	1 2
Umiejętności (absolwent potrafi) <i>/Skills:</i> (the graduate is able to)	U1	is able to apply laboratory techniques that are the basis for further scientific work	K_U06 K_U04 K_U16	2 2 2
		knows the basic functional groups occurring in organic compounds and is able to determine their reactivity		
Kompetencje (absolwent jest gotów do) <i>/Competences:</i> (The graduate is ready to)	K1	knows the basic types of biomolecules, their general formulas and their ability to react	K_K02	1

<i>Treści programowe zapewniające uzyskanie efektów uczenia się: /Program contents ensuring the achievement of the learning outcomes:</i>	Relationships between the structure of a relationship and its properties, and reactions important from the point of view of changes in living organisms. Relation of intermolecular interactions and chemical reactions with biochemistry and physiology. Issues such as: Structure of organic compounds including stereochemistry; rules of organic nomenclature. Discussion of the properties and reactions of the main groups of organic compounds, alcohols, halogen derivatives, carbonyl and carboxylic compounds, amines and multifunctional compounds, with particular emphasis on the relationship between the structure and properties of organic substances. Biomolecules - fats, saccharides, peptides.			
<i>Sposób weryfikacji efektów uczenia się/ Methods of the verification of the learning outcomes:</i>	colloquia, written final exam,			
<i>Szczegóły dotyczące sposobów weryfikacji i form dokumentacji osiągniętych efektów uczenia się /Details on the verification methods and of the ways of documenting the learning outcomes:</i>	The content of the examination questions and answers with the grade, the possibility of using distance learning when necessary			
<i>Elementy i wagi mające wpływ na ocenę końcową/Elements and weights influencing the final grade:</i>	Laboratory exercises: the assessment is determined by the sum of the points obtained from the tests and the submission of the laboratory journal. Exam: the sum of points obtained from the final examination is decisive The final grade is determined by the sum of points from the exercises (50%) and the exam (50%) Completing an item is possible after obtaining 51% of the possible points from each of the elements			
<i>Miejsce realizacji zajęć/ Teaching place:</i>	Laboratory of the Department of Chemistry; Lecture halls of the Warsaw University of Life Sciences - SGGW, if necessary, online classes (Teams)			
<i>Literatura/Literature:</i> 1. E. Białecka-Florjańczyk, J. Włostowska - Podstawy chemii organicznej, Wydawnictwo SGGW, 1999; 2. E. Białecka-Florjańczyk, J. Włostowska Chemia organiczna. WNT 2003 ,2005, 2007 3. P. Mastalerz - Podręcznik chemii organicznej. Wydawnictwo Chemiczne, 1996. 4. R. T. Morrison, R.N.Boyd - Chemia organiczna. PWN, 1995 5. J. McMurry- Chemia organiczna – PWN, 2000,2005 6. J. Fisher, J.R.P.Arnold – Chemia dla biologów – PWN, 2008.				
UWAGI/ANNOTATIONS				

*) 3 – zaawansowany i szczegółowy, 2 – znaczący, 1 – podstawowy/ 3 – significant and detailed, 2 – considerable, 1 – basic,

Wskaźniki ilościowe charakteryzujące moduł/przedmiot/Quantitative summary of the course:

Szacunkowa sumaryczna liczba godzin pracy studenta (kontaktowych i pracy własnej) niezbędna dla osiągnięcia zakładanych dla zajęć efektów uczenia się - na tej podstawie należy wypełnić pole ECTS /Estimated number of work hours per student (contact and self-study) essential to achieve the presumed learning outcomes - basis for the calculation of ECTS credits:	157h
Łączna liczba punktów ECTS, którą student uzyskuje na zajęciach wymagających bezpośredniego udziału nauczycieli akademickich lub innych osób prowadzących zajęcia/ Total number of ECTS credits accumulated by the student during contact learning:	2.4 ECTS