

Course code								
Type and description	CC - Core Course							
ECTS credits	2							
Course name	Advanced Inorganic and Organic Chemistry							
Course name in Polish	Zaawansowana Chemia Nieorganiczna i Organiczna							
Language of instruction	English							
Course level	8 PRK							
Course coordinator	prof. dr hab. Łukasz Albrecht, dr hab.inż. Agnieszka Ruppert, prof. PŁ							
Course instructors	prof. dr hab. Łukasz Albrecht, dr hab. inż. Agnieszka Ruppert, prof. PŁ							
Delivery methods and course duration		Lecture	Tutorials	Laboratory	Project	Seminar	Other	Total of teaching hours during semester
	Contact hours	15	0	0	0	0	0	15
	E-learning	No	No	No	No	No	No	
	Assessment criteria (weightage)	1.0	0.00	0.00	0.00	0.00	0.00	
Course objective	The aim of the course is to enable students to acquire knowledge in the field of inorganic and organic chemistry							
Learning outcomes	A PhD student after completing the course can: 1. At the end of the course the student is able to describe the principles and concepts of contemporary inorganic chemistry – effect W1 2. At the end of the course the student is able to identify the applications of inorganic compounds – effects W1 3. At the end of the course the student is able to design a synthesis method of an inorganic compound with demanded structure and properties – effects U1, U3, 4. A PhD student after completing the course can recognize and knows selected examples and can write using curved-arrows notation, various types of organic reaction mechanisms effect W1,U1 5. A PhD student after completing the course has the ability to apply the knowledge of previously encountered reaction mechanisms and reaction conditions to write feasible reaction mechanism for new reactions 6. A PhD student after completing the course has extended knowledge on the structure, properties and chemical behaviour of selected reactive intermediates effect W1							
Assessment methods	Verification methods of learning outcomes effects W1,W2,U1,U3 – written project/essay, oral presentation on a given topic and the ability to participate in the scientific discussion The final grade consists of: Result from the project/essay evaluation from inorganic chemistry – 50% Result from the project/essay evaluation from organic chemistry – 50%							
Prerequisites	none							
Course content with delivery methods	1. principles and concepts of advanced inorganic chemistry 2. intricate inorganic and coordination compounds and advanced inorganic materials 3. synthesis methods in inorganic chemistry 4. solid state chemistry of inorganic compounds 5. general considerations on mechanisms of organic reactions and principles governing organic transformations 6. review of organic reaction mechanisms: a) polar reactions under acidic or basic conditions; b) free radical reactions; c) pericyclic reactions (electrocyclic reactions, cycloadditions, sigmatropic rearrangements); d) transition metal-mediated and –catalyzed reactions 7. Important aspects governing the reactivity, structure and chemical behaviour of selected reactive intermediates commonly encountered in organic transformations							
Basic reference materials	1. Tutor's materials. 2. Clayden, J.; Greeves, N.; Warren, S. "Organic Chemistry", Second Edition, Oxford University Press, Oxford, 2012. 3. Carey, F. A.; Sundberg, R. J. "Advanced Organic Chemistry Part A: Structure and Mechanism", 5th ed. Springer, 2007.							
Other reference materials	current scientific articles, given by the lecturer							
Average student workload outside classroom	20 hrs							

Comments	-
Last update	2022-01-25