



Subject card

Subject name and code	Basic biotechnology, PG_00038535						
Field of study	Chemical Technology						
Date of commencement of studies	February 2023	Academic year of realisation of subject			2023/2024		
Education level	second-cycle studies	Subject group			Obligatory subject group in the field of study		
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	1	Language of instruction			Polish		
Semester of study	2	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Pharmaceutical Technology and Biochemistry -> Faculty of Chemistry						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Piotr Szweda					
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	15.0	0.0	0.0	45
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	45		5.0		25.0	75
Subject objectives	Presenting students the possibilities of application and achievements of biotechnology in medicine, environment protection and agriculture.						
Learning outcomes	Course outcome		Subject outcome			Method of verification	
Subject contents	Historical view Subject and scope of biotechnology Basic knowledge in the field of cell biology and the genetics of microorganisms The use of biotechnology in environmental protection Receiving biofuels GM crops Biometalurgy and bioremediation obtaining selected bioproducts: organic acids, enzymes, biopolymers, biopesticides, medicines						
Prerequisites and co-requisites	Basic knowledge in the field of microbiology, biochemistry and organic chemistry.						
Assessment methods and criteria	Subject passing criteria		Passing threshold			Percentage of the final grade	
	lecture		60.0%			80.0%	
	labs		60.0%			20.0%	
Recommended reading	Basic literature			Podstawy biotechnologii przemysłowej, (Bednarski W., Fiedurko J., red.) WNT Warszawa 2007. Chmiel A., Biotechnologia, PWN Warszawa, 1991.			
	Supplementary literature			Biotechnologia żywności, (Bednarski W., Rejs A. red.) WNT Warszawa, 2001; Podstawy biologii komórki, PWN Warszawa, 2005			
	eResources addresses						

Example issues/ example questions/ tasks being completed	Differences in cell structure of eukaryotes and prokaryotes Explain the concept of BZT5 Benefits and risks of growing GMOs Preparation, construction and advantages and disadvantages of biopolymers / biopesticides
Work placement	Not applicable