

表 GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Drug Design, PG_00058244							
Field of study	Biotechnology							
Date of commencement of studies	February 2023		Academic year of realisation of subject		2023/2024			
Education level	second-cycle studies		Subject group			Optional subject group Subject group related to scientific research 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			2.0		
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 inż. Paweł Szczeblewski					
	Teachers		dr hab. inż. Marek Wojciechowski					
		dr inż. Paweł Szczeblewski						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Projec	:t	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0		0.0	30
	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	30		5.0		15.0		50
Subject objectives	The aim of this cours properties, and espe at the molecular leve determination.	se is to acquain ccially with the c el, the basic me	It students with desired biologic chanisms of so	modern metho cal activity. Stud called selectiv	ods of de dents lea ve toxicit	esigning arn the ay as we	molecules w mechanisms all as the met	vith the desired of drug activity hods of its

Learning outcomes	Course outcome	Subject outcome	Method of verification				
	[K7_K02] is aware of the limitations and the necessity of continuous development of knowledge and technology; understands the need for education and constant training	The student keeps up to date with the latest achievements in the field of designing new chemotherapeutics.	[SK3] Assessment of ability to organize work				
	[K7_U04] is able to predict potential properties of biomolecules and biologically active compounds on the basis of knowledge of their chemical structure and apply methods of molecular modelling of biomolecules	The student understands the structure-activity relationship for biologically active compounds and is able to initially design new molecules with desired properties using computational methods.	[SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject				
	[K7_W10] has knowledge in the field of bioprocess technology and engineering and knowledge in the field of engineering design of technical objects and processes including engineering graphics with the use of computer-aided design and databases	The student is able to use spreadsheets and other computational tools to find the most optimal structure in terms of biological activity. Is able to use the Hansch and Free-Wilson Method in practice.	[SW3] Assessment of knowledge contained in written work and projects				
	[K7_K03] is conscious and able to explain the importance of the development of science and technology for the economy	The student is aware of the problems of the modern world and the high mortality resulting from the limited number of chemotherapeutics used and sees the need to constantly search for new ones.	[SK2] Assessment of progress of work				
	[K7_W02] has advanced knowledge of structure and activity of enzymes and biologically active compounds also in pharmacological context, knows basic instrumental methods of qualitative and quantitative analysis and activity studies of biomolecules	The student knows the basic classes of natural compounds and theirs structural elements determining biological activity. Student is able to indicate the basis of selective toxicity in the host-pathogen system.	[SW1] Assessment of factual knowledge				
Subject contents	Chemotherapy and selective toxicity						
	Testing of potential chemotherapeutic agents Structure - activity relationships						
	Quantitative Structure Activity Relationships (QSARs)						
Prerequisites and co-requisites							
Assessment methods	Subject passing criteria	Passing threshold	Percentage of the final grade				
and criteria	Theory test	60.0%	50.0%				
	Assessment of laboratory reports	60.0%	0.0%				
Recommended reading	Basic literature Supplementary literature	e Organic Chemistry of Drug					
	eResources addresses Address and Address na national and Drug Action , Academic Press, 2014						
Example issues/ example questions/ tasks being completed	Find the relationship between the antimicrobial activity of a specific group of compounds and their physicochemical properties						
	Find the structure-activity relationshi	-activity relationships within the particular set of compounds					
	Find the optimal doses of a given preparation for a specific strain of mice						
Work placement	Not applicable						