University of Gdańsk

Subject card

Subject name and code	Introduction to design of small molecular drugs, PG_00156417		
Field of study	Bioinformatics		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2026/2027
Education level	Bachelor's studies	Subject group	Optional subject group
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	Polish
Semester of study	6	ECTS credits	3.0
Learning profile	academic	Assessment form	credit
Conducting unit	Faculty of Mathematics, Physics and Informatics -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Karolina Jagiełło	
	Teachers	mgr inż. Kamila Jarzyńska	

Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	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	0.0	45.0	75

Subject objectives	To familiarise students with issues related to the mechanisms of action of chemotherapeutics To familiarise students with the current state of knowledge on strategies and methods for designing new chemotherapeutics

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BIOINL3_U02] Graduate is able to apply knowledge of natural sciences and science to formulate, analyze and solve problems related to bioinformatics	Upon completion of the course, each student: recognises the benefits of using computer methods in the context of social (improving the quality of life of society), ethical (reducing the number of animal testing) and economics (reduced costs of research); understands the need for further learning; demonstrates creativity in group work; shows responsibility for his/her work.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report
[BIOINL3_U05] Graduate has the ability to use scientific literature, including English-language sources on bioinformatics; has ability to use appropriate databases	Upon completion of the course, each student: can independently build a simple (Q)SAR model, correctly perform its validation, and make a prediction of the dependent variable based on the values of the structure descriptors; critically verifies the modelling results obtained and is able to relate them to the current legislation.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report
[BIOINL3_K03] Has an awareness and understanding of the risks and dilemmas, including ethical dilemmas, involved in conducting scientific research and introducing advanced technologies; understands and appreciates the importance of intellectual property; acts ethically	Upon completion of the course, each student: knows what the basic mechanisms of action of chemotherapeutics are knows what the design of new drugs is knows the basic computer-based methods used in drug design will list the main challenges facing (Q)SAR methods;	[SK1] oral statement/conversation/ discussion [SK2] presentation/project/paper/ report

Subject contents

Quantitative ways of expressing biological activityModelling structure-activity relationshipsBasic techniques in QSAR modelling

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
reports/prezentations	51.0%	100.0%

Recommended reading

Basic literature	A. Bąk, J. Polanski: Podstawy chemoinformatyki leków w.2 rozszerzone Scientific publications
Supplementary literature	Scientific publications
eResources addresses	

Example issues/ example questions/ tasks being completed

Work placement

Not applicable

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