

Subject card

Subject name and code	Application of selected instrumental techniques to study interactions with DNA, PG_00170601						
Field of study	Chemical Business						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2027/2028		
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	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		2.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Laboratory of Intermolecular Interactions -> Department of Bioinorganic Chemistry -> Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		mgr inż. Paulina Truszkowska				
	Teachers						
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		10.0		15.0	55
Subject objectives	To familiarize students with modern instrumental techniques used to study the interactions of small-molecule chemical compounds with DNA. To develop practical skills in designing experiments, analyzing and interpreting the results of performed experiments. To acquire the ability to describe quantitatively and qualitatively the obtained results.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[BCHINŻ_W07] Describes the construction and operating principles of basic scientific, technological and control-measuring apparatus.		Describes the construction, principle of operation and application of selected instrumental techniques used to study interactions with DNA.		[SW3] text preparation/written work		
	[BCHINŻ_K02] Works individually demonstrating initiative and independence in actions, and effectively cooperates in a team, performing various roles in it.		Works individually showing initiative and self-reliance in activities, interacts effectively in a team performing various roles in it.		[SK8] observation of student's independent or team work		
	[BCHINŻ_U03] Plans, selects the appropriate research and measuring equipment and performs simple chemical experiments; analyses the results and draws conclusions based on them.		Plans, selects appropriate equipment and research and measurement apparatus, performs physical and chemical measurements and experiments; analyzes the results and on their basis formulates conclusions.		[SU3] text preparation/written work		
Subject contents	Practical application of selected instrumental techniques for studying interactions of compounds with DNA. Development and interpretation of results of instrumental measurements, including determination of quantitative parameters of interactions and qualitative interpretation. Discussion of the determined mechanisms of binding of compounds to DNA.						
Prerequisites and co-requisites							

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Output report evaluated on points. Maximum number of points possible to obtain 10 points.	51.0%	100.0%
Recommended reading	Basic literature	Instructions and a list of papers given by the instructor during class.	
	Supplementary literature	N/A	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Based on the obtained graphs of changes in fluorescence intensity over time, characterize the processes of association and dissociation of interaction.		
Work placement	Not applicable		

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