

Subject card

Subject name and code	DNA Analyses in Forensics, PG_00188348						
Field of study	Analizy DNA w kryminalistyce (Wykład)						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2028/2029		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study 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	3		Language of instruction		Polish		
Semester of study	5		ECTS credits		2.0		
Learning profile	academic		Assessment form		exam		
Conducting unit	Laboratory of Biological Sensitizers -> Department of Physical Chemistry -> Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Magdalena Zdrowowicz-Żamojć				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	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 the course is to familiarize students with DNA examination techniques used in forensics and the legal aspects of their application.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[AKRL3_U02] The graduate can plan and organize individual and team work and collaborate with others in team projects (including interdisciplinary teams).		Is able to interpret the results of DNA analyses while collaborating with others as part of teamwork.		[SU1] wypowiedź ustna/rozmowa/ dyskusja		
	[AKRL3_K01] The graduate is ready to critically evaluate their own knowledge, understand its importance for solving cognitive and practical problems, and to seek expert opinions when necessary.		Is able to choose the appropriate DNA analysis technique to solve a specific problem and, in case of difficulties, to seek the opinion of experts in the field of forensics.		[SK1] wypowiedź ustna/rozmowa/ dyskusja [SK4] test/egzamin - ustny lub pisemny		
	[AKRL3_W04] The graduate knows and understands the basics of biological analysis of evidence material, including principles of DNA identification, proteins and other biological traces.		Knows the theoretical foundations of DNA analysis methods. Is familiar with the legal aspects concerning the use of DNA analysis in forensics.		[SW4] test/egzamin - ustny lub pisemny		

Subject contents	- Nucleic acids - DNA in prokaryotic and eukaryotic cells - Methods of DNA analysis: • restriction fragment length polymorphism analysis, • electrophoretic techniques, • polymerase chain reaction and its modifications, • DNA sequencing, • chromatographic and mass spectrometric analysis. - DNA analysis in forensics and legal medicine: • legal aspects of using DNA analysis in court cases, • preparation of evidence material, • DNA profiling, • DNA analysis in forensic determination of kinship, • DNA analysis in sex identification, • DNA analysis in the identification of bodies and human remains.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		51.0%	100.0%
Recommended reading	Basic literature	1. Forensic DNA Analysis. Methods and Protocols, Catherine Connon, Springer, 2023	
	Supplementary literature	Fundamental Molecular Biology, Allison Lizabeth, Wyd. A&B, 2021	
	eResources addresses		
Example issues/ example questions/ tasks being completed	e.g., DNA structure, electrophoretic separations and their visualization, the essence of the PCR reaction, real-time PCR, DNA extraction, DNA profile databases, forensic paternity testing		
Work placement	Not applicable		

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