

Subject card

Subject name and code	Examination of Traces and Evidence in Forensic Science, PG_00188311						
Field of study	Badania śladów i dowodów w kryminalistyce (Wykład)						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2027/2028		
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	2		Language of instruction		Polish Polish		
Semester of study	4		ECTS credits		3.0		
Learning profile	academic		Assessment form		exam		
Conducting unit	Laboratory of Electroanalysis and Biosensors -> Department of Analytical Chemistry -> Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Paweł Niedziałkowski				
	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		10.0		35.0	75
Subject objectives	Acquaintance with basic legal concepts and definitions used in forensic science. Getting acquainted with basic physicochemical tests used in forensic work. Learning basic chemical methods used in the analysis of traces and evidence. Getting to know the most important techniques for analyzing and revealing evidence. Methods of securing traces and evidence used in forensics. Developing the ability to independently perform basic activities related to finding, revealing, and securing forensic traces.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[AKRL3_K04] The graduate is ready to cooperate with representatives of other fields—law, medicine, biology—within forensic expertise.	Acquaints oneself with the basic methods used in forensic investigations. Gains the knowledge necessary to perform chemical analyses and is ready to cooperate with other laboratories.	[SK4] test/egzamin - ustny lub pisemny
	[AKRL3_K02] The graduate is ready to make reliable, objective decisions and take responsibility for the interpretation of research results.	Obtains knowledge in the field of performing analytical tasks, their statistical analysis, and analysis of obtained measurement data.	[SK4] test/egzamin - ustny lub pisemny
	[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.	Acquaints themselves with the recent analytical trends. Acquaints themselves with the problems occurring in the analysis of evidence and traces. Recalls the basic principles and procedures used in criminalistics.	[SK4] test/egzamin - ustny lub pisemny
	[AKRL3_W02] The graduate knows and understands, at an advanced level, the analytical methods used in forensic laboratories, in particular spectroscopic, chromatographic and electroanalytical methods.	Acquaints themselves with analytical methods used in forensic laboratories, knows their principles of operation, in particular spectroscopic, chromatographic, and electroanalytical methods.	[SW4] test/egzamin - ustny lub pisemny
	[AKRL3_W07] The graduate knows and understands the principles of quality assurance in analytical and forensic laboratories.	Knows the basic safety rules in a forensic laboratory. Knows the basic equipment used in forensic analysis. Knows how chemical equipment for examining traces and evidence in forensics works.	[SW4] test/egzamin - ustny lub pisemny
Subject contents	The fundamental concepts and techniques used in the examination of traces and evidence in criminalistics. The examination of the scene of the crime and the analysis of evidence. Forensic physical chemistry, introduction to basic issues. Analytical techniques used in forensic investigations, including classical analysis, chromatographic methods (TLC, GC, HPLC), spectrophotometry (IR, UV-Vis, MAS, NMR, and others). Chemical analysis in the context of various substances, such as fuels, alcohols, as well as determining the causes of fires, explosions, and testing paint coatings. Additionally, testing microtraces, residues from firearm discharges, cosmetics, and chemicals used in households. Analysis of fingerprint evidence and introduction to osmology (smell analysis), including the preservation of such evidence. Analysis of the chemistry, structure, and properties of explosives, as well as examination of mechanoscopic and trace evidence. Discussion of legal standards, procedures, and rules applicable in forensic practice and their impact on forensic analysis.		
Prerequisites and co-requisites	Prerequisites: compliance with safety rules applicable in a chemical laboratory, ability to use basic laboratory glassware, and knowledge of chemical reactions, their consequences, and effects. Knowledge of the basics of analytical, inorganic, and organic chemistry. Completed courses in inorganic, analytical, organic, and biochemical chemistry, nomenclature of organic substances, and medicinal chemistry.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	test/exam	51.0%	100.0%
Recommended reading	Basic literature	1. 5. E.Gruza, M. Goc, J. Moszczyński, Kryminalistyka, czyli o współczesnych metodach dpwpdzenia przestępstw, Wolters Kluwer Polska, Warszawa, 2020. 2. Z. Ruszkowski, Fizykochemia kryminalistyczna, CLK KGP, Warszawa, 1992. 3. J. Moszczyński, Ślady w kryminalistyce, Difin, Warszawa 2007. 4. J. Mazepa, Vademecum techniki kryminalistyki, Oficyna, Warszawa, 2009. 5. B. Hołdys, Kryminalistyka, Lexis Nexis, Warszawa, 2006.	
	Supplementary literature	1. R. Zieliński, Badania instalacji elektrycznej na miejscu pożaru, CLK KGP, Warszawa, 1992. 2. L. Rodowicz, Kryminalistyczne badanie śladów obuwia, CLK KGP, Warszawa, 2000.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	1. Identify the type of fingerprint shown in the photo opposite. 2. Indicate the type of explosive used. 3. List the methods used to analyze trace evidence.		
Work placement	Not applicable		

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