

Subject card

Subject name and code	Physical methods of investigating traces of crimes - laboratory classes, PG_00132813						
Field of study	Criminology						
Date of commencement of studies	October 2026	Academic year of realisation of subject				2027/2028	
Education level	Master's 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	2	Language of instruction				Polish	
Semester of study	3	ECTS credits				2.0	
Learning profile	academic	Assessment form				credit	
Conducting unit	Faculty of Law and Administration -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Aneta Lewkowicz				
	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		0.0		20.0	50
Subject objectives	<p>Presentation of common forensic trace examination methods. Presentation of the whole range of scientific methods for the detection of criminal offences serving as scientific evidence in areas of forensic identification such as: dactyloscopy, chemical ballistics, handwriting and document examination, micro-trace examination, DNA analysis. Learning to interpret the results obtained and to draw conclusions from them in terms of their usefulness in commissioning forensic expertise and in analysing the results of the conclusions therein. Preparing future judges, prosecutors, police services to make much wider use of modern achievements and applications of physics and related sciences in legal forensic procedures.</p>						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[KRYMMU2_UW01] I am able to apply theoretical knowledge of criminology and related disciplines to analyse and interpret problems in criminology in a broad sense	The student is able to use theoretical knowledge in the field of criminology and related scientific disciplines (in particular physics, chemistry and biology) to analyse and interpret problems related to the identification, examination and evaluation of forensic evidence using physical and physicochemical methods in forensic laboratories and at crime scenes.	[SU1] oral statement/conversation/discussion [SU2] presentation/project/paper/report [SU5] implementation of a problem task [SU8] observation of student's independent or team work
	[KRYMMU2_K05] Is able to independently and critically complement knowledge and skills, extended by the interdisciplinary dimension	The student is able to independently and critically supplement their knowledge and improve their skills in the field of physical and physicochemical methods used for forensic analysis, taking into account interdisciplinary links with natural and legal sciences.	[SK1] oral statement/conversation/discussion [SK2] presentation/project/paper/report
	[KRYMMU2_UW05] Has the ability to independently propose solutions to a specific problem and carry out a procedure to reach a decision on it	The student has the ability to independently propose solutions to specific problems related to the analysis of forensic evidence and the evaluation of evidence. They are able to carry out the procedure of identification, preservation and interpretation of evidence at the scene of the incident and provide a proposal for a forensic expert opinion, as well as formulate precise and substantive questions to the procedural authority, taking into account the applicable methodological standards and legal regulations.	[SU1] oral statement/conversation/discussion [SU2] presentation/project/paper/report [SU5] implementation of a problem task [SU8] observation of student's independent or team work
Subject contents	Analysis of evidence by molecular spectroscopy and optical and electron microscopy research methods:UV/VIS spectrophotometrySpectrofluorimetryRaman spectroscopyScanning electron microscopyStereo microscope with fluorescenceStereoscopic microscopeThe apparatus is dedicated to the analysis of, among other things, gunshot residues (GSR), document, glass, fibres, drugs...		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	raport/sprawozdanie	51.0%	100.0%
Recommended reading	Basic literature	1. D. Halliday, R. Resnick, J. Walker, "Podstawy Fizyki", Wydawnictwo Naukowe PWN, Warszawa 2008; 2. P.W. Atkins, Chemia fizyczna, Wydawnictwo Naukowe PWN, Warszawa 2007; 3. A. Barbacki - Mikroskopia elektronowa", Wydawnictwo Politechniki Poznańskiej, Poznań 2007; 4. J. Sadlej - Spektroskopia molekularna", Wydawnictwo Naukowo - Techniczne, Warszawa 2002; 5. Józef Wójcikiewicz (redakcja), Ekspertyza Sądowa, Kantor Wydawniczy ZAKAMYCZE 2002.	

	Supplementary literature	<p>1. M. Kulicki, V. Kwiatkowska - Wójcikiewicz, L. Stępa - Kryminalistyka. Wybrane zagadnienia teorii praktyki śledczo - sądowej", Wydawnictwo Uniwersytetu Mikołaja Kopernika, 2009;</p> <p>2. J. Widacki - Kryminalistyka" , Wydawnictwo C.H. Beck, 2012;</p> <p>3. W. Szczepaniak - Metody instrumentalne w analizie chemicznej", PWN, Warszawa 1994;</p> <p>4. J. Zięba - Palus - Ekspertyza fizykochemiczna. Ekspertyza sądowa, Zagadnienia wybrane" pod redakcją J. Wójcikiewicza,Wolters Kluwer, Warszawa 2007;</p>
	eResources addresses	
Example issues/ example questions/ tasks being completed	Presentation of test methods and test procedures for the analysis of evidence, e.g. in the form of sent aluminium plates with carbon adhesives on the surface of which there are micro traces. Giving an opinion on the question sent by the trial authority: Does the submitted evidence contain gunshot residues?	
Work placement	Not applicable	

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