University of Gdańsk

Subject card

Subject name and code	Chemical methods of investigating traces of crimes - lectre, PG_00132637						
Field of study	Criminology						
Date of commencement of studies	October 2024		Academic year of realisation of subject	2025/2026			
Education level	Master's studies		Subject group	Optional subject group			
Mode of study	part-time studies		Mode of delivery	at the university			
Year of study	2		Language of instruction	Polish			
Semester of study	3		ECTS credits	3.0			
Learning profile	academic		Assessment form	exam			
Conducting unit	Faculty of Law and Administration -> 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	15.0	0.0	0.0	0.0	0.0	15
	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	15		0.0	60.0	75	
Subject objectives	Introduction to basic chromatographic methods used in the investigation of substances with a biological activity.A practical understanding of basic analytical techniques used in forensic investigations.Familiarization with the chemical analysis of substances with explosive, and flammable properties.Introduction to the chemical analysis of substances with narcotic properties.Introduction and acquaintance with practical chemical techniques for revealing dactyloscopic and traseological traces.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[KRYMMU2_KR08] He/ she is aware of the level of own knowledge and skills, and understands the need for lifelong learning	Understands the need for further education in forensic chemical and instrumental analysis. Understands the need for continuous knowledge update on modern forensic testing methods.	[SK4] test/exam - oral or written
	[KRYMMU2_WG02] He/she demonstrates deepened knowledge about the character of natural sciences connected with the field of stud, their place in the system of sciences and mutual relations	Knows the basic knowledge of the instrumental and physicochemical analysis. Knows basic methods of trace analysis; Knows the theoretical basis of chromatographic techniques. Possesses basic knowledge of physicochemical properties of chemicals that are used in criminology.	[SW4] test/exam - oral or written
	[KRYMMU2_UK02] He/she is prepared for active participation in groups, organizations and institutions connected with the problem of crime and other related phenomena. He/she is also able to communicate with specialists and non-specialists in criminology	He is competent to work in a team, in theoretical studies and laboratory knowledge in a forensic laboratory. Has competence in the subject under discussion to transfer knowledge to others.	[SK4] test/exam - oral or written
	[KRYMMU2_KR05] The graduate is ready to prepare and participate in the preparation of social projects taking into consideration legal, economic and political aspects, including the preparation and implementation of projects co-financed by the European Union's funds	He knows the rules and observes the regulations of the physicochemical laboratory, and is responsible for the safety of his work and that of others. Is aware of the risks to health, life and the environment from dealing with hazardous chemicals.	[SK4] test/exam - oral or written
	[KRYMMU2_UW02] He/she acquires knowledge independently and develops his/her professional skills using various sources (in native and foreign language) and modern technologies	Has the ability to independently acquire knowledge in the field of research and methods used in forensic analysis in native and foreign languages. Has the ability to independently use sources and modern technologies to acquire knowledge in the field of research and methods used in forensic analysis.	[SU4] test/exam - oral or written
	[KRYMMU2_UW06] He/she is able to propose solutions of concrete problems and carry out procedures connected with solutions in this respect	He is able to propose chemical and physicochemical methods for the study of selected hazardous substances. Can independently search and process scientific data on a given topic in Polish or in other languages.	[SU4] test/exam - oral or written
	[KRYMMU2_UU03] The graduate demonstrates deepened skills of observing, diagnosing, sensible assessing of complex psychological situations and analyzing motives and patterns of human behaviours	Has the ability to prevent hazards associated with chemical analysis and work in a group. Has the ability to operate basic laboratory equipment	[SU4] test/exam - oral or written
	[KRYMMU2_UW04] He/she can apply legal and professional principles and norms in taking up the activity of criminologist	Has the basic skills necessary to perform experiments in chromatographic analysis of dactyloscopy, dermatoscopy and traseology. Able to use computer techniques for forensic analysis and data storage.	[SU4] test/exam - oral or written
	[KRYMMU2_UW07] He/she has skills in understanding and analyzing social phenomena and utilizing the analysis in professional work	Has the ability to work in a group.	[SU4] test/exam - oral or written
	[KRYMMU2_KK01] The graduate is aware of the level of his/her knowledge and skills, and also understands the need of lifelong learning	Understands the need for further education in forensic chemical and instrumental analysis. Understands the need for continuous knowledge update on modern forensic testing methods.	[SK4] test/exam - oral or written

<table>
<tr><td>Subject contents</td><td colspan="3">Research applied in forensic science - basic concepts, scope of research. Forensic physicochemistry - general concepts. Research methodology used in forensic science, classical qualitative analysis, chromatographic methods (TLC, GC, HPLC), spectrophotometry (IR, UV VIS, MAS, NMR, and others), microscopic studies. Range of chemical testing in forensic science, alcohol testing, psychoactive agent testing, drug testing, determination of the cause of fires, explosions, micro-trace testing, testing of gunshot residues, testing of household chemicals. Dactyloscopic and dermatoscopic traces. Methods of protecting traces. Properties, chemistry, structure and analysis of explosives. Mechanoscopic and traseological traces. Regulations, routines and legal aspects in forensic science vs. analytical practice.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td colspan="3"></td></tr>
<tr><td>Assessment methods and criteria</td><td colspan="3"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>test/exam</td><td>51.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td colspan="2">1. Z. Ruszkowski, Fizykochemia kryminalistyczna, CLK KGP, Warszawa 1992.
2. J. Moszczyński, Ślady w kryminalistyce, Difin, Warszawa 2007.
3. Stepnowski P., Synak E., Szafranek B., Kaczyński Z. Techniki separacyjne. Wydawnictwo UG 2010.</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">1. L. Rodowicz, Kryminalistyczne badanie śladów obuwia, CLK KGP, Warszawa 2000.
2. J. Mazepa, Vademecum techniki kryminalistyki, Oficyna, Warszawa 2009.</td></tr>
<tr><td>eResources addresses</td><td colspan="2"></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="3">1. What type of fingerprint is shown in the figure.
2. The figure opposite shows the formula of what narcotic compound.</td></tr>
<tr><td>Work placement</td><td colspan="3">Not applicable</td></tr>
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