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 2026	Academic year of realisation of subject	2027/2028
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_WG05] Has an in-depth knowledge of methods and tools, including data and information extraction techniques, specific to criminology and forensic science	Can 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.	[SW4] test/exam - oral or written
[KRYMMU2_K05] Is able to independently and critically complement knowledge and skills, extended by the interdisciplinary dimension	Possesses 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.	[SK4] test/exam - oral or written
[KRYMMU2_WG02] Has an in-depth knowledge of the nature of natural sciences related to the studied major, their place in the system of sciences and their mutual relations	Possesses basic knowledge of instrumental and physicochemical analysis. Knows the basic methods of trace analysis; Knows the theoretical basis of chromatographic techniques; Has basic knowledge of the physicochemical properties of chemicals applicable to criminology.	[SW4] 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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