

Subject card

Subject name and code	Forgery Detection, PG_00188351						
Field of study	Wykrywanie fałszerstw (Ćw.laboratoryjne)						
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		credit		
Conducting unit	Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Agnieszka Chylewska				
	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		5.0		15.0	50
Subject objectives	Students will be introduced to basic physicochemical and analytical methods for detecting and demonstrating the authenticity of evidence. The course will involve the use of instrumental techniques and classical procedures for detecting forgeries in forensic feeders. Learning about research results, preparation, results, and formulation of test results from standard forensic laboratories. Examining the role of analytical quality and the responsibility of the analytical chemist in audit procedures.						

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.	292 / 5 000 The student understands the interdisciplinary nature of counterfeit analysis and is able to indicate how the results of chemical tests integrate with the findings of specialists from other fields; is able to formulate conclusions and reports in a way that allows them to be used by experts from other fields.	[SK2] prezentacja/projekt/referat/raport [SK5] realizacja zadania problemowego [SK6] demonstracja umiejętności praktycznych
	[AKRL3_W13] The graduate knows basic provisions of criminal and evidentiary law and understands the role of an expert witness in the justice system.	The student presents the importance of the analytical procedure, documentation regarding the effects and consequences of the interpretation of results in the context of their use in criminal proceedings; understands the expert's responsibility for the correctness of the analysis, conclusions and the manner of reporting them.	[SW2] prezentacja/projekt/referat/raport [SW5] realizacja zadania problemowego
	[AKRL3_W03] The graduate knows and understands the structure and chemical properties of compounds relevant in forensic examinations.	The student explains the relationship between the structure and chemical properties of compounds present in materials subjected to forensic analysis; interprets test results in the context of the physicochemical properties of the analyzed materials.	[SW4] test/egzamin - ustny lub pisemny [SW2] prezentacja/projekt/referat/raport [SW5] realizacja zadania problemowego
	[AKRL3_K05] The graduate is ready to promote science and raise social awareness in the field of forensic analytics.	The student is able to explain the principles of operation of selected forgery analysis techniques in an accessible and substantive manner; is able to present research results and their interpretation in a way that is understandable to people outside the expert community.	[SK2] prezentacja/projekt/referat/raport [SK4] test/egzamin - ustny lub pisemny
	[AKRL3_K06] The graduate is ready to follow occupational health and safety regulations in the laboratory and care for the safety of themselves and others.	The student applies appropriate safety procedures when working with chemical reagents, laboratory equipment and instrumental apparatus used in the analysis of counterfeits; identifies hazards and responds appropriately to situations requiring special caution.	[SK6] demonstracja umiejętności praktycznych [SK8] obserwacja samodzielnej lub zespołowej pracy studenta
	[AKRL3_W08] The graduate knows and understands the application of information technologies in data analysis, interpretation of results, and reporting of forensic research.	The student uses IT tools to develop, analyze and interpret data obtained from instrumental methods used in detecting forgeries and is able to prepare a laboratory report in a form consistent with the requirements of forensic documentation.	[SW2] prezentacja/projekt/referat/raport
	[AKRL3_W07] The graduate knows and understands the principles of quality assurance in analytical and forensic laboratories.	The student applies the principles of good laboratory practice when preparing samples, performing instrumental analyses and processing results; is able to assess the reliability of obtained data and identify potential sources of error in falsification studies.	[SW2] prezentacja/projekt/referat/raport [SW5] realizacja zadania problemowego
Subject contents	Schedule (7 meetings total): • 5 laboratory meetings of 5 teaching hours each (5 × 45 min = 225 min = 3 hrs 45 min of real-world work) • 2 theoretical meetings of 45 min each (the first at the beginning of the course; the last as a summary) 1. Work organization, safety, principles of forgery analysis, evidence evaluation, report preparation (45 min.). 2. Document forgeries: analysis of paper, inks, signatures, and microtraces. 3. Detection of adulteration in consumer products: food and cosmetics. 4. Pharmaceutical adulteration: quality analysis and component identification. 5. Authenticity and purity of plant-based components. 6. Analysis of fibers and hair in the context of adulteration and comparative materials. 7. Summary (45 min.).		

Prerequisites and co-requisites	Basic knowledge of general and analytical chemistry (properties of chemical compounds), and physical chemistry (dilutions, concentrations, chemical equilibria). Basic laboratory skills (safe operation of laboratory apparatus and equipment, preparation of solutions, keeping laboratory notes). Basic instrumental analysis (knowledge of the principles of operation of selected analytical techniques: UV-Vis, TLC, microscopy). Awareness of occupational health and safety regulations (compliance with occupational health and safety procedures in a chemical laboratory).		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	10 pkt.	51.0%	50.0%
	10 pkt.	51.0%	50.0%
Recommended reading	Basic literature	1. A.R.W. Jackson, J.M. Jackson, H. Mountain, D. Brearley, Forensic Science , Pearson Education, Australia, 4, 2016. 1. J.A. Siegel, Forensic Chemistry: Fundamentals and Applications , John Wiley and Sons, Wiley-Blackwell; Wiley-Interscience, Forensic Science in Focus, 1, 2015. 1. E. Katz, J. Halámek, J. Halamek, Forensic Science: A Multidisciplinary Approach , John Wiley and Sons; Wiley-Blackwell; Wiley-Interscience, John Wiley & Sons, Inc., Weinheim, 2016	
	Supplementary literature	Scientific articles on analytical and instrumental methods used to detect forgeries.	
	eResources addresses	Basic https://bg.ug.edu.pl/e-biblioteka/zasoby-elektroniczne - A multidisciplinary collection containing over 240,000 e-books. Supplementary https://bg.ug.edu.pl/e-biblioteka/zasoby-elektroniczne - A multidisciplinary collection containing over 240,000 e-books.	
Example issues/ example questions/ tasks being completed	1. What criteria allow us to determine that two ink traces originate from different sources? 2. Which morphological features of fibers may indicate their common or different origin?		
Work placement	Not applicable		

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