

Subject card

Subject name and code	Principles of Forensic Laboratory Operations, PG_00188353						
Field of study	Forensic Analytics						
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	6		ECTS credits			3.0	
Learning profile	academic		Assessment form			exam	
Conducting unit	Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Joanna Makowska				
	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	Information about the structure and functioning of laboratories providing analyses for forensic purposes, cooperation with law enforcement agencies and the justice system, principles of preparing forensic expertise, including multidisciplinary expertise						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[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.	Student knows advanced analytical methods used in forensic laboratories and understands their application in the identification and analysis of evidence material.	[SW5] implementation of a problem task
	[AKRL3_W03] The graduate knows and understands the structure and chemical properties of compounds relevant in forensic examinations.	The student knows the chemical properties of substances important in forensic investigations and understands their significance in the identification of evidence material and interpretation of analytical results.	[SW1] oral statement/conversation/discussion [SW5] implementation of a problem task
	[AKRL3_W09] The graduate knows and understands the principles of documentation, securing, and interpreting evidence material, as well as the use of microscopic and spectroscopic methods.	Student has a knowledge about the principles of securing, documenting, and interpreting evidence material and understands the importance of instrumental and microscopic methods in forensic analysis.	[SW3] text preparation/written work [SW5] implementation of a problem task
	[AKRL3_U11] The graduate is able to work effectively in a laboratory team while adhering to professional ethics and organisational rules.	Student is able to cooperate with laboratory team members as well as law enforcement agencies and the justice system during the performance of analyses and preparation of forensic opinions	[SU1] oral statement/conversation/discussion [SU5] implementation of a problem task
	[AKRL3_K08] The graduate is prepared to think and act in an entrepreneurial manner, seeking innovative solutions, improving analytical processes, and initiating activities that support the modernization of forensic practice	Student is prepared to seek modern and effective solutions in the organization and implementation of forensic analyses, taking into account the need for continuous improvement of laboratory procedures.	[SK2] presentation/project/paper/report [SK6] demonstration of practical skills
	[AKRL3_K02] The graduate is prepared to make reliable, objective, and socially responsible decisions and to assume responsibility for the interpretation of research results, being aware of their impact on evidentiary procedures and the functioning of the justice system.	Student is prepared for responsible and objective interpretation of forensic analysis results and for formulating conclusions while considering their significance for evidentiary proceedings.	[SK1] oral statement/conversation/discussion [SK2] presentation/project/paper/report [SK3] text preparation/written work [SK6] demonstration of practical skills
	[AKRL3_W12] The graduate knows and understands, at an advanced level, the latest trends and achievements in analytical chemistry, toxicology, molecular biology and instrumental methods used in forensic science.	The student knows current trends in the development of analytical and instrumental methods used in forensic laboratories and understands their importance in forensic expert opinions.	[SW1] oral statement/conversation/discussion [SW3] text preparation/written work [SW5] implementation of a problem task
	[AKRL3_U10] The graduate is able to interpret data from different analytical techniques to reconstruct events or identify evidence material.	The student is able to interpret the results of forensic analyses and integrate data obtained from various examinations in order to formulate conclusions regarding evidence material.	[SU2] presentation/project/paper/report [SU6] demonstration of practical skills
Subject contents	1. The Structure and Operation of Forensic Laboratories in Poland 2h 2. Police Forensic Laboratory Experts and Court Experts 2 hours 3. Cooperation of Forensic Experts with Law Enforcement and the Judiciary 2h 4. Securing evidence material at the scene of the crime 4h 5. Forensic expertise 6h 6. Comprehensive Forensic Expertise 6h 7. Case Study: Scope of Analysis, Research Algorithm, Interpretation of Test Results 4h 8. Drawing Conclusions Based on Analyses 2h 9. Defending the Constructed Conclusions Regarding Forensic Analyses 2h		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	The lecture grade will be based on a written examination consisting of test questions.	51.0%	100.0%
Recommended reading	Basic literature	1. ACT of 6 June 1997 - Code of Criminal Procedure 2. Good Practices of Forensic Technicians / edited by Adam Frankowski and Piotr Trojanowski. 3. Act of 29 July 2005 on counteracting drug addiction	
	Supplementary literature	n/a	
	eResources addresses		

Example issues/ example questions/ tasks being completed	• Describe the structure and organization of forensic laboratories and their cooperation with law enforcement agencies and the justice system. • Present the principles of securing and documenting evidence material. • Explain the role of an expert witness and the main principles of preparing forensic opinions. • Selection of analytical methods and interpretation of forensic examination results. • Case study analysis of evidence material and formulation of conclusions.
Work placement	Not applicable

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