

Subject card

Subject name and code	Contemporary aspects of laboratory diagnostics in forensic medicine, PG_00153617						
Field of study	Biotechnology						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
Education level	Master's studies		Subject group		Optional subject group		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		Polish		
Semester of study	1		ECTS credits		2.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Intercollegiate Faculty of Biotechnology UG-MUG -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Andrea Lipińska				
	Teachers		dr hab. Andrea Lipińska				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	0.0	30.0	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	In the course of the course the student will: will learn and understand biochemical and genetic phenomena with practical applications in laboratory diagnostics in forensic medicine, learn their significance in toxicological and genetic research for the needs of justice and law enforcement agencies; will acquire in-depth knowledge of methods of detection and quantification of psychoactive substances and drugs in biological material, identification of biological traces and genetic identification of individuals and determination of parentage, including paternity.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BIOTECHMU2_W03] The graduate knows and understands concepts of therapy and diagnostic methods of human diseases, including the mechanisms of action of selected drugs, immunotherapy and gene therapy.	Is familiar with general concepts of therapy and diagnostic methods for human diseases, including mechanisms of action of selected drugs, immunotherapy and gene therapy	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion
	[BIOTECHMU2_W01] The graduate has in-depth knowledge of complex biological phenomena at the molecular level and knows their importance for biotechnology.	Understands complex biological phenomena at the molecular level, knows their relevance to biotechnology	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion
	[BIOTECHMU2_U04] The graduate possesses the ability to proficiently use scientific information, including English, regarding biotechnology; critically analyses and selects information; uses electronic sources; has the ability to use appropriate databases.	Is proficient in the use of scientific information, including English-language information on biotechnology; critically analyses and selects information; uses electronic sources; has the ability to use appropriate databases	[SU1] oral statement/conversation/discussion [SU4] test/exam - oral or written
	[BIOTECHMU2_K01] The graduate consciously combines knowledge acquired in previous stages of education with knowledge acquired on an ongoing basis to solve problems in the field of biotechnology; consciously deepens and updates knowledge and improves qualifications related to biotechnology in the field of exact and natural sciences and medical and health sciences.	Consciously combines knowledge acquired in previous stages of education with knowledge obtained on an ongoing basis to solve problems in the field of biotechnology; consciously deepens and updates knowledge and improves qualifications related to biotechnology in the fields of science and life sciences and medical and health sciences.	[SK1] oral statement/conversation/discussion [SK4] test/exam - oral or written
Subject contents	The syllabus includes topics in contemporary laboratory methods in forensic medicine, in particular: - basic issues in forensic toxicology - basic techniques of toxicological analysis - knowledge of the most common accidental, suicidal and criminal poisonings - past and present issues of psychoactive substances - legal conditions concerning drug use - issues related to ethanol alternatives - retrospective and prospective calculation of blood alcohol concentrations - workflows for the identification of biological traces - genetic identification of gender and human appearance markers - steps in DNA testing in personal identification and establishment of paternity - biostatistical calculations in forensic genetics and their relevance to forensic medical opinions - examples of the use of DNA testing in forensic genetics		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Programme content	0.0%	80.0%
	Attendance	0.0%	20.0%
Recommended reading	Basic literature	1. K. Rębała (red.), Contemporary aspects of laboratory diagnostics in forensic medicine, NCBIr, Gdańsk 2015. 2. S. Raszeja, W. Nasiłowski, J. Makarewicz, Medycyna sądowa, Podręcznik dla studentów, PZWL, Warszawa 1990. 3. Z. Szczerkowska, Badania biologiczne w sądowym ustalaniu ojcostwa, Instytut Ekspertyz Sądowych, Kraków 1998. 4. Z. Szczerkowska, R. Pawłowski, Podstawy genetyki sądowej, Akademia Medyczna w Gdańsku, Gdańsk 2002. Kraków 2002. Warszawa 2011. Warszawa 2011. 7. Z. Marek, M. Kłys, Opiniowanie sądowo-lekarskie i toksykologiczne, Kantor Wydawniczy Zakamycze, Kraków 1998. 8. W. Seńczuk (red.), Toksykologia współczesna, PZWL, Warszawa 2006. 9. J. K. Piotrowski (red.), Podstawy toksykologii, WNT, Warszawa 2008.	
	Supplementary literature	None	
	eResources addresses		

Example issues/ example questions/ tasks being completed	
Work placement	Not applicable

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