University of Gdańsk

Subject card

Subject name and code	Fibres under the microscope - the significance of trace evidence in event reconstruction, PG_00211802		
Field of study	Forensic Analytics		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2027/2028
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Optional subject group
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	4	ECTS credits	1.0
Learning profile	academic	Assessment form	credit
Conducting unit	Division of Didactics and Popular Science -> Faculty of Chemistry -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. Jolanta Kumirska	
	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

Additional information:

Lecture with PowerPoint presentation. Application of the case study method.

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	2.0	8.0	25

Subject objectives

The aim of the course is to provide students with knowledge and develop skills in the recovery, identification, and interpretation of fibres as forensic trace evidence, as well as in the application of fibre examination results to event reconstruction and the assessment of the evidential value of trace materials.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[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.	The student is prepared to formulate conclusions responsibly and objectively based on the results of fibre examinations and to critically evaluate their significance for the evidential process and the reconstruction of events.	[SK4] test/exam - oral or written
[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.	The student knows and understands the procedures for documenting and recovering fibre trace evidence, as well as the principles governing the selection and interpretation of examination results obtained using microscopic and spectroscopic methods.	[SW4] test/exam - oral or written
[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 and understands contemporary instrumental methods used in the examination of fibre trace evidence and their significance for the identification of evidential material and the reconstruction of events.	[SW4] test/exam - oral or written
[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 fibre examinations obtained using selected analytical techniques and apply them to the reconstruction of events and the assessment of the evidential value of fibre trace evidence.	[SU4] test/exam - oral or written

Subject contents

The lecture course covers the fundamentals of the identification, recovery, analysis, and interpretation of fibre evidence using contemporary analytical methods, as well as the evaluation of its evidential value in criminal proceedings.

Fibres as forensic trace evidence. Detection, recovery, and documentation of fibre trace evidence. Basic microscopic methods for fibre examination. Selected instrumental methods used for fibre identification. Comparative analysis of fibres. Interpretation of fibre examination results. The significance of fibre trace evidence in event reconstruction. Analysis of selected forensic case studies (real or simulated).

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Total points from the written examination covering the material covered during lectures, including an assessment of the student's activity during classes (max. 10%)	51.0%	100.0%

Recommended reading

Basic literature	1. Hołyst B., *Kryminalistyka (Criminalistics)*, Wolters Kluwer, Warsaw, 2023 (selected chapters on physical evidence, trace evidence, and laboratory examinations). 2. Robertson, J.; Roux, C.; Wiggins, K.G. (Eds.) *Forensic Examination of Fibres*, 3rd ed.; CRC Press: Boca Raton, Florida, USA, 2018.
Supplementary literature	1. Scientific articles published in Polish-language journals, such as *Problemy Kryminalistyki* and *Archiwum Medycyny Sądowej i Kryminologii*, as well as in English-language journals (e.g., *Forensic Science International*, *Science & Justice*, *Journal of Forensic Sciences*), concerning the examination of fibres as forensic trace evidence
eResources addresses	

Example issues/ example questions/ tasks being completed

1. Classification of fibres used in textile products and their basic properties.
2. Fibres as forensic trace evidence – their significance in the evidential process.
3. Principles of detecting, recovering, and documenting fibre trace evidence at a crime scene.
4. Identification of the basic morphological characteristics of fibres using microscopy.
5. Characteristics and applications of selected instrumental methods used for fibre identification (e.g., FTIR spectroscopy, microspectrophotometry, and Raman spectroscopy).
6. Comparison of fibres based on their morphological, optical, and chemical characteristics.
7. Analysis of a simple forensic case study involving fibre trace evidence and formulation of conclusions.

Work placement

Not applicable

Document generated electronically. Does not require a seal or signature.