Level: Master academic studies of chemistry; Master academic studies of biochemistry; Master academic studies of molecular biology

Course title: Forensic Chemistry (IHA-510)

Status: Elective

ECTS: 6

Requirements: None

Learning objectives

- Gaining knowledge on applications of analytical chemistry in contemporary forensic research within legal regulations.
- Enabling students to apply analytical methods and techniques during forensic analyses.
- Gaining knowledge on methods and procedures for collecting and analysis of evidence.
- Developing critical and ethical attitude to reliability and quality of forensic analyses.

Learning outcomes

Students should be able to:

- demonstrate knowledge on forensic evidence;
- list and explain analytical methods, which are used in forensic analysis of drugs, alcohol, DNA, blood, fingerprints, glass, fibres, ink, explosives and flammable substances;
- independently choose, modify and apply analytical methods in forensic investigations;
- precisely analyse, interpreted and present results in the form of the official report (expertise);
- competently communicate with experts from legal institutions (police, criminology centres, court of justice, medical institutions etc.).

Syllabus

Theoretical instructions

Topics include: evidence and the crime scene; the presentation of forensic evidence; document examination; fires, explosions and firearms; illicit drugs, alcohol and forensic toxicology; body fluids; DNA analysis; forensic pathology; inorganic forensic materials – glass, soil, gunshot residues. Fibers. Colours. Fingerprints and footprints. Project work, which is undertaken by all students, focuses on the solution of real world problems.

Practical instructions

Chemical and instrumental analysis of the drugs (HPLC, GC, IR-FTIR). Ink analysis (TLC). Fiber and textile analysis. Fingerprints and footprints. Explosives and arson analysis. DNA analysis.

Weekly teaching load				Other:
Lectures: 2	Exercises: 2	Other forms of teaching: 1	Student research: /	/