**Level:** Specialist academic studies of chemistry

**Course title:** Forensic Chemistry (Advanced course) (SH-604)

**Status:** Elective

**ECTS:** 5

**Requirements:** None

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

**Learning outcomes**
*After successful completion of the course, a student is able to:*
- Demonstrate extended knowledge on forensic evidence.
- List and explain advanced 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, interpret and present results in the form of the official report (expertise).
- Competently communicate with experts from legal institutions (police, criminology centers, court of justice, medical institutions etc.).

**Syllabus**

*Theoretical instructions*
Topics include: evidence and the scene of the crime; 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. Forensic profiling. Chemometric techniques in forensic science. 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**

| Lectures: 2 | Exercises: | Other forms of teaching: 2 | Student research: / | Other: / |