



## ➤ Introduction

The Master's degree program in Forensic Engineering is implemented as part of the graduate program at the University of Criminal Investigation and Police Studies. Exceptional students who have successfully completed undergraduate (Bachelor degree) programs at faculties in the relevant scientific fields (natural, technical and technological and medicinal fields of science) are eligible to enroll this study program. Upon graduation, the highest levels of acquired knowledge in the field of technical and technological sciences enable students to conduct independent research and scientific work and qualify those students to enroll doctoral degree programs.

## ➤ The Purpose of the Study Program

The purpose of this study program is to acquire the academic title of Master of Science in Technology Engineering. This study program covers the contemporary technical and technological methods utilized for material characterization as well as identification of various items in criminal investigation, government and commercial sectors. It also covers the scientific disciplines such as: contemporary techniques of materials identification, technical and technological engineering, reliability of technical systems, instrumental analyses in forensic sciences, chemical engineering, electrochemical engineering, toxicological chemistry, forensic medicine, biotechnology, forensic genetics, forensic botany and zoology, traffic engineering, and forensic engineering expertise. These topics are in line with the highest scientific achievements and standards that enable a candidate that achieved Master of Science degree in Technology Engineering to deal with the most complex tasks of managing technical and technological projects and to conduct the forensic identifications, both within laboratory settings and during the processing of a crime scene.

After finishing the study program, the fresh graduate may participate in the educational process as well as join the scientific research teams within either the institutions of higher education, or research institutes that seek for the acquired knowledge/profile. This study program provides the opportunity to pursue further training, specifically to enroll the doctoral degree program.

## ➤ The Aims of the Study Program

The aims of Master's degree program in Forensic Engineering are as follows:

- Adoption of methods of fundamental and applied sciences that provide competence to the Master of Science in Technology Engineering profile;
- Proper implementation of scientific methods to perform and improve technological processes in addition to undertaking complex and specific tasks associated with obtaining/collecting evidence.
- The practical implementation of acquired knowledge in tasks requiring expertise in scientific methods as the basis for contemporary identification techniques (e.g., automated identification systems, methods used for characterizing building materials, machine components, polymer fibers, etc.);
- Application of acquired knowledge in the fields of technical and technological, traffic, and ballistic engineering for solving specific criminal events and their reconstructions;
- Application of acquired knowledge in the domain of human and material resource management;
- A comprehensive understanding of the legal framework and ethical standards required for carrying out particular criminal investigation and forensic, government, and commercial tasks.



## ➤ Competencies

A candidate that passes all the exams as specified in the Master's degree program in Forensic Engineering and defends the Final Master's Thesis, acquires higher education and the academic title of Master of Science in Technology Engineering.

The acquired academic title provides the following competencies:

- Independent application of the methods of fundamental and applied sciences for material characterization and identification of persons, objects, and traces;
- A comprehensive understanding of technological procedures required for materials identification;
- Evaluation of the viability of implementing technical and technological procedures to obtain reliable evidence;
- Adequate access to automatic identification systems, with prior proper selection of samples both for their identification and their adequate registration (database);
- Ability to work in development and scientific units within the Ministry of Interior and other state bodies, organizations, and non-governmental entities;
- Adequate level of practical application of relevant computerized systems;
- Participation in the development of strategic plans and analyses;
- Furthermore, a student will acquire the communication and social competences necessary for work in an engineering team and communication skills to clearly articulate and present a task, ways to solve it, and their work results.

## ➤ Curriculum

The Master Program lasts for 1 year (two semesters). All the courses are taken in the first semester, and the program consists of five elective courses, while the second semester includes Practicum, and the course entitled Final Thesis Preparation and the Final Thesis defense. Elective courses 1, 2, and 3 are selected from the group of the first 10 courses offered, while elective courses 4 and 5 are selected from the group of all (up to 20) courses offered. The number of hours of active teaching per semester is: 20 in the first semester, and 20 in the second semester. 20 hours per week are allocated for the Final Thesis Preparation (course), three hours per week are allocated for the Master Thesis, while 6 hours per week are allocated for Practicum. The ECTS credits are redistributed between semesters as follows: 30 for the first semester and 30 for the second

Application Forms for each phase of the Master's thesis application, along with the guidelines for the Final Thesis Preparation and Final Thesis defense have been prepared.