FORENSIC SCIENCE M.S.

Degree: Master of Science
https://www.towson.edu/fcsm/departments/chemistry/grad/forensic/

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Mission Statement

The mission of the Master of Science in Forensic Science Program is to provide students with a comprehensive and in-depth study of major areas of forensic science that will allow them to compete for positions in forensic science beyond the entry level.

The program is based on an application-focused curriculum that provides the student an advanced educational background and the development of laboratory skills. The program's mission is further enhanced through active forensic research, internships and collaborative learning experiences with accredited forensic laboratories.

Program Goals and Objectives

The goals and objectives of the Towson University Master of Science in Forensic Science Program is to prepare students for positions as working forensic scientists in business, industry and government careers. To meet these goals, the program combines chemistry, biology and specialized forensic science course work to provide students with advanced scientific and laboratory training in major areas of forensic science including crime scene analysis, forensic DNA analysis and trace evidence/toxicology analysis.

General Information

The Master of Science in Forensic Science program is a FEPAC-accredited program that is both molecular biology-based, focusing on forensic DNA analysis, or chemistry-based, focusing on toxicology, drug and trace evidence analysis. This program benefits from its talented forensic faculty members and forensic professionals serving as adjunct faculty. The program is rich with laboratory experience, capped with a capstone or research project, internship in a forensic science laboratory or a thesis.

The program provides advanced education in the scientific and laboratory problem-solving skills necessary for success in a modern forensic science laboratory. The program combines this rigorous training with exposure to the breadth of forensic science disciplines, including forensic science practice, law and ethics. The program is primarily intended for students who are interested in working as forensic scientists. The flexible degree program is designed to meet the professional development needs of forensic scientists now employed in Maryland and across the nation, as well as preparing those students interested in pursuing a Ph.D. degree in science.

The curriculum ensures that each student:

- Develops an understanding of the areas of knowledge that are essential to forensic science, including crime scene investigation, physical evidence concepts, law/science interface, ethics and professional responsibilities, quality assurance, analytical chemistry and instrumental methods of analysis, microscopy, molecular biology, toxicology, forensic biology, DNA technologies and biostatistics.
- Acquires skills and experiences in the application of basic forensic science concepts, analytical chemistry and forensic DNA knowledge to problem solving.
- Is oriented in professional values, concepts and ethics.
- Demonstrates integration of knowledge and skills through a capstone experience, such as a seminar, a research project, an internship or thesis.

Qualifications for a career and/or internship in forensic science

Prospective students should be aware that background checks, driving records, drug tests, polygraph, and medical or physical examinations similar to those required of law enforcement officers are likely to be a condition of employment and/or internships. Please refer to: NIJ Report NCJ 203099, pp. 7-10 for additional information.

Requirements

Admission Requirements

Application deadlines and a full listing of materials required for admission can be found on the website.

Degree Requirements

All students complete 37 units of graduate work with 9 units being chosen from either the Forensic DNA track or the Forensic Chemistry track. No more than three courses may be taken at the 500 level.

Code	Title	Units
Required Courses		
FRSC 600	FORENSIC SCIENCE AND LAW	3
FRSC 601	FORENSIC MOLECULAR BIOCHEMISTRY	3
FRSC 602	FORENSIC CHEMISTRY	3
FRSC 604	CRIME SCENE AND IMPRESSION EVIDENCE	3
FRSC 797	GRADUATE SEMINAR FOR FORENSIC SCIENCE	1
Track Specific Coursework (see below)		**9**
Elective Courses [1]		**12**
Select 12 additional units from the following:		
FRSC 605	FORENSIC FIREARMS ANALYSIS	
FRSC 607	FORENSIC FIREARMS ANALYSIS II	
FRSC 680	INDEPENDENT STUDY IN FORENSIC SCIENCE	
FRSC 695	SPECIAL TOPICS IN FORENSIC SCIENCE	
FRSC 610	FORENSIC SEROLOGY	
FRSC 620	DNA TECHNOLOGIES	
FRSC 621	ADVANCED DNA TECHNOLOGIES	
FRSC 622	ADVANCED SEQUENCING METHODS	
FRSC 640	CHEMISTRY OF DANGEROUS DRUGS	
FRSC 650	FORENSIC MICROSCOPY	
FRSC 660	DEATH ANALYSIS IN FORENSIC SCIENCE	
FRSC 670	FORENSIC ANALYTICAL METHODS	
FRSC 690	FORENSIC TOXICOLOGY	
FRSC 787	GRADUATE INTERNSHIP IN FORENSIC SCIENCE	
BIOL 602	MOLECULAR BIOLOGY	

BIOL 614	APPLIED BIOTECHNOLOGY	
Up to 6 elective units from other disciplines may be taken with permission from the FRSC director.		
Capstone Courses		**3**
A total of 3 units from the following:		
FRSC 800	CAPSTONE IN FORENSIC SCIENCE	
FRSC 880	RESEARCH PROJECT IN FORENSIC SCIENCE	
FRSC 897	FRSC THESIS [2]	
or FRSC 898	FRSC THESIS	
Total Units		**37**

[1] Students must consult with the program director prior to selecting their electives. Students in either track may select courses from the alternate track toward electives.

[2] If student chooses to complete a thesis (FRSC 897 or two completions of FRSC 898) for a total of 6 units, 3 units will apply to the elective requirement and 3 units will apply to the capstone requirement.

Forensic DNA Track

Code	Title	Units
FRSC 610	FORENSIC SEROLOGY	3
FRSC 620	DNA TECHNOLOGIES	3
FRSC 621	ADVANCED DNA TECHNOLOGIES	3
Total Units		**9**

Forensic Chemistry Track

Code	Title	Units
FRSC 640	CHEMISTRY OF DANGEROUS DRUGS	3
FRSC 650	FORENSIC MICROSCOPY	3
or FRSC 690	FORENSIC TOXICOLOGY	
FRSC 670	FORENSIC ANALYTICAL METHODS	3
Total Units		**9**

Learning Outcomes

1. Students will learn to apply their knowledge of analytical chemistry, molecular biology, population genetics, forensic biology, forensic DNA technology and statistics in a forensic setting.
2. Students will gain advanced skills in instrumental methods, microscopy, serology, DNA analysis, quality assurance and the ethical and legal requirements applicable to the examination of physical evidence and courtroom testimony.
3. Students will develop written and oral communication skills for presentation of analytical findings and courtroom testimony.
4. Students will be able to make a professional presentation of their research findings in a symposium/seminar format.