

FORENSIC SCIENCE MINOR

Forensic Science is an interdisciplinary academic area of study that draws from a wide range of disciplines including Biology, Biotechnology, Chemistry, Computer Science and Criminal Justice. The mission of the Forensic Science minor is to provide a quality educational experience that will enable students to reach the highest standards of academic excellence through a generalist perspective on the forensic sciences. The program will provide opportunities for the analysis and application of knowledge through exposure to a wide variety of scientific disciplines and professional skill sets.

Requirements for a Forensic Science Minor: 19 credits

Code	Title	Credits
Core Requirements		10
BT-101	Introduction to Forensic Sciences	
CJ-103	Evidence Collection and Crime Scene Preservation	
CJ-401	Forensic Science Senior Seminar	
Electives from Biotechnology, Chemistry, Computer Science, Criminal Justice or selection approved by the FS Director		9
CJ-211	Victimology	
CJ-305	Principles of Evidence and Proof	
PS-315	Physical and Sexual Abuse	
PS-330	Theories of Personality	
PS-335	Abnormal Psychology	
Total Credits		19

The Forensic Science Minor is an interdisciplinary program drawing from the faculty of multiple departments at Worcester State University.

- Nada AlSallami, Assistant Professor (2019), B.Sc., M.Sc., Ph.D., University of Technology, Iraq
- Mark H. Beaudry, Assistant Professor and Director of Forensic Science (2018), A.S. Mount Wachusett Community College; B.S., M.S. Northeastern University; Ph.D., Capella University
- Roger S. Greenwell, Co-Coordinator of the Biotechnology Program, Associate Professor (2014), B.S. Western Kentucky University; Ph.D. University of Wisconsin-Madison
- Jennifer Hood-DeGrenier, Department Chair, Professor (2012), B.A. Williams College; Ph.D. Harvard University
- Eihab Jaber, Professor (2006), B.A. Hunter College; M.S., Ph.D. State University of New York Stony Brook
- Maura Pavao, Professor (2001), B.S. Worcester Polytechnic Institute; M.S., Ph.D. Rutgers University

BT-101 Introduction to Forensic Sciences

LASC Categories: NSP, HBS, LAB

Prerequisites: Math placement code of 3 or higher.

Survey of forensic case studies and the laboratory techniques used to solve crimes including microscopy, chromatography, ballistics and DNA analysis.

Every year. 4 Credits

BT-240 Research Experience for Undergraduates

Lab and/or field based research on a specific research topic under the supervision of a faculty member. Permission of instructor and department chair required.

Fall and Spring. 1-6 Credits

BT-408 Directed Study: Biotechnology

Directed study offers students, who because of unusual circumstances may be unable to register for a course when offered, the opportunity to complete an existing course with an established syllabus under the direction and with agreement from a faculty member.

Other or on demand. 3 Credits

BT-440 Advanced Research Experience

Prerequisites: BI-205. Instructor permission required. Junior/Senior standing required.

Advanced lab and/or field based research on a specific research topic under the supervision of a faculty member. Permission of instructor and department chair required.

Fall and Spring. 1-6 Credits

BT-450 Internship in Biotechnology

Qualified upper-level biotechnology majors can learn experimental techniques by working in a company laboratory or a professional manufacturing environment. Permission of faculty sponsor and department chair required.

Fall and Spring. 3-6 Credits

CH-250 Instrumental Technology for Forensic Analysis

LASC Categories: NSP, QAC, NLL

Prerequisites: CH-120 and CH-121, minimum grade C- or take CH-112, minimum grade C-.

Introduction to instrumental techniques used to analyze crime scene evidence. Includes HPLC, IR spectrometry, Atomic spectroscopy, and GC-MS. Three lecture hours and three lab hours per week.

Other or on demand. 4 Credits

CH-408 Directed Study: Chemistry

Directed study offers students, who because of unusual circumstances may be unable to register for a course when offered, the opportunity to complete an existing course with an established syllabus under the direction and with agreement from a faculty member.

3-4 Credits

CH-480 Internship: Chemistry

Project completed at an institution other than Worcester State by a student with a non-Worcester State sponsor and Worcester State liaison. Every year. 1-6 Credits

CJ-103 Evidence Collection and Crime Scene Preservation

Prerequisites: BT-101

This course provides students with a theoretical framework for the practice of evidence collection and crime scene preservation. Various techniques and protocols for investigation will be reviewed and linked to methods of collection of physical evidence, as well as the interpretation, accountability and preservation of data. Techniques of documentation and case preparation will also be explored.

Every 2-3 years. 3 Credits

CJ-211 Victimology

Prerequisites: CJ-101

Criminal-victim relationships, with emphasis on victim-precipitated crimes and compensation to the victims.

Every 2-3 years. 3 Credits

CJ-305 Principles of Evidence and Proof

Prerequisites: CJ-101 and CJ-205.

This course analyzes federal and state rules of evidence in criminal proceedings, focusing on the relationship between evidence and proof. The course also examines issues related to the collection and seizure of admissible physical evidence, the role of privileges, and the interrogation of the accused.

Spring only and every 2-3 years. 3 Credits

CJ-398 Criminal Justice Internship

Prerequisites: CJ-101 and CJ-102 and CJ-111 and CJ-203

Criminal Justice internship involves student field-based work experience within selected agencies of the criminal justice system or allied helping agencies. This course is designed to provide students with an opportunity to translate theoretically oriented classroom principles into practical application.

Fall and Spring and every year. 3-6 Credits

CJ-399 Independent Study in Criminal Justice

Individual research and independent study related to a particular aspect of criminal justice that is of special interest.

Every year. 3-6 Credits

CJ-401 Forensic Science Senior Seminar

Prerequisites: BT-101 and CJ-103

The senior seminar is designed to bring together the diverse areas of knowledge that the student has gained in the area of forensic science. It is a synthesis of classroom knowledge applied to real world forensic science issues. Topics covered emphasize the use of critical thinking skills to analyze, integrate and synthesize research and case studies relevant to the forensic sciences.

Spring only and every year. 3 Credits

CJ-408 Directed Study: Criminal Justice

Directed study offers students, who because of unusual circumstances may be unable to register for a course when offered, the opportunity to complete an existing course with an established syllabus under the direction and with agreement from a faculty member.

Other or on demand. 3 Credits

CS-165 Digital Forensics

Prerequisites: CS-155

Digital forensics investigation; data acquisition; processing crime and incident scenes; multiple operating systems and file formats; digital forensics tools, analysis and validation.

Every year. 3 Credits

CS-497 Selected Topics: Computer Science

Prerequisites: CS-282

Selection of topics of mutual interest to student and faculty.

Other or on demand. 1-6 Credits

CS-498 Internship: Computer Science

Prerequisites: 21 credit hours in Computer Science courses including CS-282

Working in and for an organization where skills can be tested in real situations in order to gain experience, increase knowledge in various functional areas, and establish important contacts with an organization.

Every year. 3 Credits

CS-499 Independent Study: Computer Science

Prerequisites: 18 credit hours in Computer Science including CS-282.

An opportunity for advanced students to examine topics not normally taught in other mathematics or computer courses. Geared to the interests of both the student and the instructor.

Every year. 1-6 Credits

PS-315 Physical and Sexual Abuse

Prerequisites: PS-101 with a C- or above.

Etiology, characteristics, consequence, treatment and prevention of various forms of physical, sexual and emotional abuse in children, adolescents and adults.

Other or on demand and every 2-3 years. 3 Credits

PS-330 Theories of Personality

Prerequisites: PS-101 with a grade of C- or above.

A survey of major theories of personality. Why people behave as they do is explored through the different theories.

Other or on demand and every year. 3 Credits

PS-335 Abnormal Psychology

Prerequisites: PS-101 with a grade of C- or above.

Etiology, dynamics and treatment of psychopathology and their relation to normal personality are considered from traditional and contemporary perspectives.

Fall and Spring and every year. 3 Credits