Forensic Science (3+2 leading to master's degree)

at Arcadia University

Global Perspectives…Personal Attention…Real-World Integrative Learning Experiences

Faculty

Heather Mazzanti, M.S.F.S, Assistant Professor and Interim Director of the Forensic Science Program
Lauretta Bushar, Ph.D., Associate Professor and Chair of the Department of Biology
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Degrees

Bachelor of Arts in Biology or Bachelor of Arts or **Bachelor of Science in Chemistry**
Master of Science in Forensic Science

About the 3+2 Accelerated Forensic Science Program

- Highly selective program for academically talented students
- Bachelor's and master's degrees in five years
- The necessary scientific foundation needed for a career in forensic science
- FEPAC-accredited program in Forensic Science
- Curriculum aligned with guidelines from the DNA Advisory Board (DAB), Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG) and the American Board of Forensic Toxicology (ABFT)
- Guaranteed internship with nation's premier forensic scientists
- Arcadia University-sponsored student participation in professional meetings
- State-of-the-art laboratory facilities
- Personal attention from faculty advisers
- Active research programs in various forensic science disciplines
- Opportunity to attend autopsies and consult on cold case investigations
- Opportunity to become recognized by the American Board of Criminalistics (ABC) by taking the Forensic Science Assessment Test (FSAT) prior to graduation

This program provides an accelerated pathway through the Undergraduate Curriculum into Arcadia's master's degree program in Forensic Science.

During the first three years of study, a student takes prerequisite coursework and Undergraduate Curriculum requirements. In the fourth year of study, the student completes the senior seminar and Capstone requirements for the undergraduate degree and begins graduate coursework, which is completed in the fifth year.

In addition to courses in chemistry and biology, graduate courses concern both general and specific topics in forensic science. The fifth year of the accelerated program includes certain common courses as well as specialization in chemical, biological, and toxicological coursework. Students also complete an internship and independent research project. The University sponsors student participation in professional meetings in the final year of the program.

This pathway allows a student to fulfill all of the Undergraduate Curriculum and major requirements (including completing 128 undergraduate credits) and the requirements of the Master of Science in Forensic Science (38 to 70 credits) in five years. The 3+2 program provides a pathway to ensure that the undergraduate coursework taken by the student meets the expected prerequisites and required background knowledge for the master's program in Forensic Science.

Arcadia's FEPAC-Accredited Master's Program in Forensic Science

Forensic science is the application of science to the purposes of law. It is highly interdisciplinary by nature and has become a vital part of the judicial and regulatory system in America. Practicing forensic scientists, law enforcement personnel, and criminal justice

professionals all recognize the growing need for highly qualified specialists who can execute established and appropriate techniques in the collection, preservation, analysis, and presentation of forensic evidence.

The Arcadia University Master of Science in Forensic Science (M.S.F.S.) program is nationally accredited by the Forensic Science Education Programs Accreditation Commission (FEPAC) of the American Academy of Forensic Sciences. Arcadia University is one of only a select few institutions in the country to hold this accreditation which recognizes the high quality graduate forensic science curriculum offered through this program.

The Master of Science in Forensic Science (M.S.F.S.) degree is offered by Arcadia University in partnership with the Center for Forensic Science Research & Education and in collaboration with NMS Labs, one of the nation's premier ASCLD-LAB and ISO 17025 accredited forensic science laboratories. This alliance provides a source of adjunct instructors, a forensic library, invaluable links to the forensic science community and guaranteed internships with some of the nation's premier forensic scientists. State-of-the-art laboratory equipment and facilities are provided in nearby Willow Grove, Pa.

Advising: Each student admitted into the program is assigned a faculty adviser in either the Biology or Chemistry department. The adviser is involved in helping the student to take the prescribed coursework for admission into the master's program while completing the Undergraduate Curriculum and major requirements necessary for completion of the bachelor's degree. The Director of the Forensic Science program also assists each student with questions and advises him or her.

Expert graduate seminars: The fourth year features 1-credit seminars in which forensic experts address key issues in their fields.

Summer project/internship: After the fourth year, students may engage in a summer external internship opportunity or research project mentored by a faculty member affiliated with the University or its partners.

Admission to the 3+2 Accelerated Program

Students must apply for admission into the 3+2 program directly from high school. Highly selective admissions criteria are used to select academically talented students capable of handling the accelerated schedule.

Applicants must submit an essay of approximately 500 words that answers the following two questions:

1. What interests you in the field of forensic science?
2. Why do you want to be a forensic practitioner?

Before writing the essay, students are strongly encouraged to familiarize themselves with the field of forensic science by exploring the American Academy of Forensic Sciences Web site (www.aafs.org).

Matriculated students will not be accepted into the 3 + 2 program. (Note: Matriculated students can follow the 4+2 Forensic Science program, which prepares students for admission into Arcadia's master's program and offers assured admission for select qualified students.)

The profile of the typical successful candidate includes the following:

- High school laboratory science courses in biology, chemistry and physics; Advanced Placement courses if available
- A college-prep math course in each year of high school
- Combined SAT scores of at least 1800, with no individual score below 450
- Students need a 3.0 cumulative GPA or better to be considered.

At the completion of each semester of undergraduate study, students will be evaluated to ensure that they meet the qualifications to continue on in the accelerated degree program. These criteria include:

- Maintained a cumulative GPA of 3.25 or better and a GPA of 3.0 in the major.
- Have received no less than a "B" in any of the science or math courses in the prerequisite major.

At the completion of the third year of undergraduate study, students will be evaluated to ensure that they meet the qualifications to begin graduate coursework. At this point the students must have met the following additional criteria:

- Completed all major and Undergraduate Curriculum requirements (with the exception of the following courses: BI 340, CH 404, BI 333, BI 490 and CH 490).
- Earned at least 112 semester hours by the end of the third year.

Students who meet these requirements are permitted to begin graduate coursework in their fourth year of study and enter into the Master of Science in Forensic Science program without having to take the GRE exam.

Students who do not meet these requirements can continue on with their undergraduate education in their fourth year and then apply to the M.S.F.S. program upon completion of their undergraduate degree following standard application requirements.

4+2 Program: Since the 3+2 program is highly accelerated, students who choose to participate at the traditional pace may transfer to the 4+2 program, completing the undergraduate degree in four years while completing requirements for admission in the master's program. Assured admission into the master's program is available for select qualified 4+2 students.

Advanced Placement, International Baccalaureate, Honors

Each student meets with an adviser after enrolling to review how his or her Advanced Placement credits, International Baccalaureate credits, and/or other college-level credits may apply to the program requirements.

Advanced Placement: Students who have earned scores of 3 or higher on Advanced Placement examinations of the College Board will be awarded credit toward the bachelor's degree for courses comparable to those offered at Arcadia University. Those interested in learning more about Advanced Placement courses or examinations should obtain information from their high school guidance office or by contacting the College Board by phone at 609-771-7300 or online at www.collegeboard.org.

Another means by which incoming students can earn advanced credit is through the College Level Examination Program (CLEP) or Excelsior College Examinations (formerly known as ACT PEP and Regents Examinations). Inquiries about advanced placement and credit should be addressed to the Arcadia University Registrar at 215-572-2100.

International Baccalaureate: Arcadia University reviews and evaluates International Baccalaureate (IB) Higher Level courses on an individual basis. Normally, University course credit is granted for scores of 5 or higher in courses that are applicable to the degree program. Full IB diploma holders also are evaluated on an individual basis. No credit is given for subsidiary-level courses.

Honors Program: Incoming freshmen are evaluated for possible acceptance into the Honors Program based upon the strength of their admissions applications. To be considered for the program, freshman applicants must score 1870 or better on the SAT or 28 or better on the ACT and graduate in the top 10 percent of their class (if their high schools rank students).

Requirements for the B.A. in Biology and the M.S. in Forensic Science

The First Year

Fall Semester (16 credits)

BI	101	General Biology I (4 credits)
CH	111	Conceptual Chemistry I (4 credits)
EN	101	English Composition (4 credits)

A First-Year Seminar (4 credits)

Spring Semester (16 credits)

BI	102	General Biology II (4 credits)
CH	112	Conceptual Chemistry II (4 credits)
MA	141	Statistics (4 credits)

A Global Connections (Intellectual Practices requirement) course (4 credits)

The Second Year

Fall Semester (20 credits)

BI	201	Evolution and Population Biology (4 credits)
BI	242	Research Methods (4 credits)
CH	203	Equilibrium and Analysis (4 credits)

A University Seminar course (4 credits)
An Elective or an Undergraduate Curriculum requirement course such as Self and Society (4 credits)

Spring Semester (18 credits)

BI	204	Genetics (4 credits)
BI	211	Comparative Anatomy and Physiology (4 credits)

A Modern Language course (4 credits)
A Global Connections Experience (4 credits)
A Global Connections Reflection course (2 credits)

The Third Year

Fall Semester (18-20 credits)

BI	325	Cell Biology (4 credits)
BI	222	Plant Biology
	or BI 329	Ecology (4 credits)
CH	201	Organic Chemistry (4 credits)

An Elective or an Undergraduate Curriculum requirement (2-4 credits)

Spring Semester (18 credits)

BI	333	Molecular Biology (4 credits)
CH	202	Organic Chemistry II (4 credits)
BI	290	Junior Seminar (2 credits)

A Creative Expressions (Area of Inquiry) course (4 credits)
A University Seminar (4 credits)

The Fourth Year

Fall Semester (8 undergraduate credits; 8 graduate credits)

BI	340	Biochemistry (4 credits)
CH	404	Instrumental Methods of Analysis I (4 credits)
FS	518	Crime Scene Investigation and Reconstruction (2 credits)
FS	519	Pattern Evidence Analysis (2 credits)
FS	570	Criminal Law and Ethics (3 credits)
FS	561a	Forensic Science Symposium (1 credit)

Spring Semester (8 undergraduate credits, 10 graduate credits)

An Undergraduate Curriculum requirement course, such as a Research Writing-designated course (4 credits)

BI	490	Senior Seminar (4 credits)
FS	504	General Principles of Pharmacology (3 credits)
FS	530	Forensic Biology I (3 credits)
FS	535	Forensic Chemistry (3 credits)
FS	515	Research Methods (1 credit)

The Fifth Year

Fall Semester (20 graduate credits)

FS	525/526	Forensic Toxicology I and II (3 credits each)
FS	531	Forensic Biology II (3 credits)
FS	536	Advanced Forensic Chemistry (3 credits)
FS	512	Trace Analysis (3 credits)
FS	533	Quality Management in Forensic Science (1 credit)
FS	596	Research Project in Forensic Science (4 credits)
or FS 597		Research Project in Forensic Chemistry (4 credits)
or FS 598		Research Project in Forensic Biology (4 credits)

Spring Semester (17 graduate credits)

FS	596	Research Project in Forensic Science (4 credits)
or FS 597		Research Project in Forensic Chemistry (4 credits)

or FS 598		Research Project in Forensic Biology (4 credits)
FS	520	Moot Court (1 credit)
FS	586	Graduate Practicum in Forensic Biology (4 credits)
FS	587	Graduate Practicum in Forensic Chemistry (4 credits)
FS	588	Graduate Practicum in Forensic Toxicology (4 credits)
or FS 583		Graduate Internship in Forensic Science (12 credits)

Requirements for the B.S. in Chemistry and the M.S. in Forensic Science

The First Year

Fall Semester (16 credits)

CH	111	Conceptual Chemistry I (4 credits)
EN	101	English Composition (4 credits)
BI	101	General Biology I (4 credits)

A First-Year Seminar course (4 credits)

Spring Semester (16 credits)

BI	102	General Biology II (4 credits)
CH	112	Conceptual Chemistry II (4 credits)
MA	201	Calculus I (4 credits)

A University Seminar (4 credits)

The Second Year

Fall Semester (19 credits)

PH	211	Conceptual Physics I (4 credits)
CH	201	Organic Chemistry I (4 credits)
CH	203	Equilibrium and Analysis (4 credits)
MA	202	Calculus II (4 credits)

A Creative Expressions (Area of Inquiry) course (3 credits)

Spring Semester (20 credits)

PH	212	Conceptual Physics II (4 credits)
CH	202	Organic Chemistry II (4 credits)
BI	204	Genetics (4 credits)

A Global Connections (Intellectual Practices requirement) course (4 credits)

A Writing for Physical Sciences course (4 credits)

The Third Year

Fall Semester (20 credits)

CH	407	Polymers and Biopolymers (4 credits)
CH	301	Physical Chemistry I (4 credits)
BI	325	Cell Biology (4 credits)

A Modern Language course (4 credits)

A University Seminar (4 credits)

Spring Semester (18 credits)

CH	305	Inorganic Chemistry (4 credits)
CH	302	Physical Chemistry II (4 credits)

A Global Connections Experience (4 credits)

A Global Connections Reflection course (2 credits)

A Modern Language course (4 credits)

The Fourth Year

Fall Semester (8 undergraduate credits; 8 graduate credits)

CH	403	Biochemistry (4 credits)
CH	404	Instrumental Methods of Analysis I (4 credits)
FS	518	Crime Scene Investigation and Reconstruction (2 credits)
FS	519	Pattern Evidence Analysis (2 credits)
FS	570	Criminal Law and Ethics (3 credits)
FS	561a	Forensic Science Symposium (1 credit)

Spring Semester (8 undergraduate credits, 10 graduate credits)

BI	333	Molecular Biology (4 credits)
CH	490	Senior Seminar (4 credits)
FS	504	General Principles of Pharmacology (3 credits)

FS	530	Forensic Biology I (3 credits)
FS	535	Forensic Chemistry (3 credits)
FS	515	Research Methods (1 credit)

The Fifth Year

Fall Semester (20 graduate credits)

FS	525/526	Forensic Toxicology I and II (3 credits each)
FS	531	Forensic Biology II (3 credits)
FS	536	Advanced Forensic Chemistry (3 credits)
FS	512	Trace Analysis (3 credits)
FS	533	Quality Management in Forensic Science (1 credit)
FS	596	Research Project in Forensic Science (4 credits)
or FS 597		Research Project in Forensic Chemistry (4 credits)
or FS 598		Research Project in Forensic Biology (4 credits)

Spring Semester (17 graduate credits)

FS	596	Research Project in Forensic Science (4 credits)
or FS 597		Research Project in Forensic Chemistry (4 credits)
or FS 598		Research Project in Forensic Biology (4 credits)
FS	520	Moot Court (1 credit)
FS	586	Graduate Practicum in Forensic Biology (4 credits)
FS	587	Graduate Practicum in Forensic Chemistry (4 credits)
FS	588	Graduate Practicum in Forensic Toxicology (4 credits)
or FS 583		Graduate Internship in Forensic Science (12 credits)

Requirements for the B.A. in Chemistry and the M.S. in Forensic Science

The First Year

Fall Semester (16 credits)

CH	111	Conceptual Chemistry I (4 credits)
EN	101	English Composition (4 credits)
BI	101	General Biology I (4 credits)

A First-Year Seminar course (4 credits)

Spring Semester (18 credits)

BI	102	General Biology II (4 credits)
CH	112	Conceptual Chemistry II (4 credits)
MA	141	Statistics (4 credits)

Writing for Physical Sciences course (4 credits)

An elective (2 credits)

The Second Year

Fall Semester (19 credits)

PH	201	Fundamental Concepts of Physics I (4 credits)
CH	201	Organic Chemistry I (4 credits)
CH	203	Equilibrium and Analysis (4 credits)

A University Seminar (4 credits)

A Creative Expressions (Area of Inquiry) course (3 credits)

Spring Semester (18 credits)

PH	202	Fundamental Concepts of Physics II (4 credits)
CH	202	Organic Chemistry II (4 credits)
BI	204	Genetics (4 credits)

A Global Connections Experience (4 credits)

A Global Connections Reflection course (2 credits)

The Third Year

Fall Semester (20 credits)

CH	407	Polymers and Biopolymers (4 credits)

CH	301	Physical Chemistry I (4 credits)
BI	325	Cell Biology (4 credits)

A Modern Language course (4 credits)
A University Seminar (4 credits)

Spring Semester (16 credits)

CH	305	Inorganic Chemistry (4 credits)
CH	302	Physical Chemistry II (4 credits)

A Global Connections (Intellectual Practices requirement) course (4 credits)
A Modern Language course (4 credits)

The Fourth Year

Fall Semester (8 undergraduate credits; 8 graduate credits)

CH	403	Biochemistry (4 credits)
CH	404	Instrumental Methods of Analysis I (4 credits)
FS	518	Crime Scene Investigation and Reconstruction (2 credits)
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