Forensic Science | Major

“My physical chemistry classes prepared me for my internship at the Bucks County Crime Lab. The faculty and staff at Alvernia helped me advance toward my goal of becoming a Forensic Chemist.”—Ashley Lippincott ’10, DrugScan, Doylestown, PA

PROGRAM HIGHLIGHTS IN BRIEF

Alvernia is a Franciscan university dedicated to academic achievement, community service and the professional and personal fulfillment of our students. Classes in forensic science are taught by dedicated faculty, committed to the ideal that science can bring tremendous power to the investigation and resolution of human events, activities and conflicts.

Science courses are taught in the O’Pake Science Center, a $9.3 million state-of-the-art teaching and research facility, which opened in 2006. The O’Pake Science Center added 31,582 square feet of classroom, laboratory and faculty office space to Alvernia’s campus. Two floors of laboratory/classroom space, all of which have the latest in educational technology, allow students to employ a variety of laboratory materials and equipment for use in examination of trace evidence like hairs & fibers, fingerprints, tire and shoe-print impressions, blood and DNA evidence, forensic pathology & anthropology, questioned documents, illicit drugs, gun-powder (GSR), explosive & arson components, ballistics & firearms examination as well as accident investigation. Chemical and toxicological analyses are facilitated by instrumentation including UV/Vis, Infrared and Fluorescence spectro-photometers, HPLC, GC, GC-Mass Spec. and Raman spectrometry, flame/graphite-furnace Atomic Analyzer, as well as a high energy LASER-coupled spectrometer.

ACADEMIC QUALITY

The Department of Science & Mathematics, together with the Department of Criminal Justice, provides a course of study that introduces students to the various applications of Biology, Chemistry and Physics to the investigation of events with legal and/or liability implications.

Students also take coursework where they learn basic investigative theory, including an understanding of the legal rules for handling and presenting evidence, as well as exploring the mind and motivation behind criminal behavior. Forensic Science majors are prepared to work with coroners and medical examiners, crime labs and in a variety of other public service and law enforcement careers.

The Forensic Science major provides qualified students an opportunity to integrate experiences in criminal justice and scientific disciplines through a practicum experience where students are encouraged to seek out internship opportunities in their area of interest. Recently, our students have successfully interned with various county coroner’s and medical examiner’s offices, state and local police departments and district attorney’s offices, as well as numerous academic and commercial analytical laboratories.

CAREER SUCCESS

Graduates of Alvernia University’s Forensic Science program will be highly qualified to work for law enforcement agencies such as the Drug Enforcement Administration (DEA), Food & Drug Administration (FDA), Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA). Forensic training also prepares the student to work for private industries in their analytical, environmental or toxicology laboratories. Students can also pursue graduate work or careers in medicine or law.
CAREER OPPORTUNITIES

Chemical Engineer
Chemistry Technology
Color Development Chemist
Consumer Protection Specialist
Crime Lab Analyst
Criminalist
Environmental Health Specialist
Fire Protection Engineer
Food Drug Analyst

Food Scientist
Forensic Chemist
Forensic Scientist
Forensic Toxicologist
Science Laboratory Assistant
Soil Scientist
System Analyst
Tissue Technologist

CURRICULUM OVERVIEW

Forensic Science Major (85-94 Credits)

CHE 104  General Chemistry I
CHE 105  General Chemistry II
CHE 107  Laboratory Safety
CHE 110  General Chemistry I Lab
CHE 111  General Chemistry II Lab
CHE 201  Organic Chemistry I
CHE 202  Organic Chemistry II
CHE 210  Organic Chemistry I Lab
CHE 211  Organic Chemistry II Lab
CHE 212  Analytical Chemistry w/Lab
CHE 221  Instrumental Analysis
CHE 301  Physical Chemistry I
CHE 402/CJ 403 Senior Seminar in Criminal Justice
CHE 405  Forensic Chemistry w/Lab
CHE 316  Introduction to Chemistry Research -OR-
CHE 317  Experimentation in Chemistry Research -OR-
CHE 407  Data Analysis in Math/Science Research -OR-

CJ 101  Introduction to Criminal Justice
CJ 175  Fundamentals of Criminal Investigation
CJ 203  Criminalistics
CJ 207  Rules of Evidence
CJ 275  Criminology
CJ 403/CHE 402 Senior Seminar in Criminal Justice
CJ 408/CHE 480 Agency Practicum

Related Math/Science Requirements (25-28 Credits)

BIO 103  Principles of Biology
BIO 115  Human Form & Function
BIO 116  Human Form & Function Lab
MAT 131  Pre-Calculus (recommended)
MAT 209  Probability and Statistics
MAT 220  Math/Statistics Computer Lab
MAT 230  Calculus I
PHY 110  General Physics I
PHY 111  General Physics II

Forensic Science Electives (6-8 credits)

CHE 315  Forensic Toxicology
CHE 401/410  Biochemistry w/Lab
BIO 303  Genetics
BIO 309  Molecular Genetics Lab
BIO 304  Cell Biology
BIO 311  Cellular Physiology Lab
BIO 315  Forensic Medicine
BIO 405  Pharmacology
BIO 409  Immunology

Forensic Science Minor (22 credits)

CHE 104  General Chemistry I
CHE 110  General Chemistry I Lab
CHE 212  Analytical Chemistry -OR-
CHE 401  Biochemistry -AND-
CHE 410  Biochemistry Laboratory
CHE 405  Forensic Chemistry
BIO 103  Principles of Biology I
BIO 303  Genetics -OR-
BIO 304  Cell Biology -OR-
BIO 405  Pharmacology

3 credits of CJ electives* (203 recommended)

CONTACT INFORMATION

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Curriculum Overview

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