



Bachelor of Science in Chemistry with a Concentration in Criminalistics

Definition

Criminalistics is a branch of Forensic Science that applies science to law through the recognition, documentation, collection, preservation, and analysis of physical evidence. A criminalist is a specialist who uses scientific principles to analyze, compare and/or identify firearms, fingerprints, hairs, fibers, drugs, blood, and other physical evidence. A criminalist may also be trained to conduct crime scene investigation. Additionally, experienced, credentialed criminalists regularly provide expert court testimony.

Admission

Upon admission to Metropolitan State University of Denver, any student who wishes to major in Chemistry with a concentration in Criminalistics, should contact the Program Director (**Dr. April Hill, ahill45@msudenver.edu**) as soon as possible to complete the declaration of major form and discuss internship requirements (see “Special Requirements” section below).

Career Opportunities

Opportunities are available with Federal Agencies such as:

- Federal Bureau of Investigation (FBI)
- Drug Enforcement Administration (DEA)
- Bureau of Alcohol, Tobacco and Firearms (ATF)
- Environmental Protection Agency (EPA)
- U.S. Customs
- Armed Services Laboratories

Many of our graduates have found employment with state and local forensic laboratories. Recent graduates have secured jobs at the North Dakota State Crime Laboratory (Forensic Scientist in Drug Chemistry), the Salt Lake City Police Department (Crime Scene Investigator), the Washington State Patrol Crime Laboratory (Materials Analyst), the Douglas County Sheriff’s Office (Crime Scene Investigator), and the Boulder County Coroner’s Office (Deputy Coroner). Graduates have also been hired in non-forensic chemistry laboratories such as Environmental Protection Agency, Coca-Cola Bottling Co., and Hazen Research. Still others choose to pursue graduate degrees such as a Master’s in Forensic Science or Master’s/PhD degrees in Chemistry. In addition to careers directly related to criminalistics, chemistry majors find employment opportunities in such diverse fields such as: medicine, environmental science, pharmacology, pharmaceuticals, materials science, physical therapy, dentistry, medical technology engineering, and law.

Criminalistics Program Goals

The Program’s primary goal is to prepare majors for careers and/or postgraduate studies in Forensic Sciences and for a lifetime of learning in the field. The Criminalistics Program endeavors to provide students the opportunity to develop critical thinking skills, criminalistics-specific knowledge, and a crucial understanding of chemical principals.

Transfers

Transfer students are welcomed. If, upon evaluation, chemistry courses taken at an accredited institution of higher education are judged to be comparable to the chemistry program’s course offerings, transfer credit will be awarded.

Special Requirements

Nearly all criminalistics employment is in government agencies that have special requirements including background checks and polygraph examination. Background checks will include criminal record, credit history, and interviews with people familiar with the applicant. **Recent illicit drug use (five years), felony convictions, commission of crimes for which you have not been charged, drunk driving convictions, and co-habitation with drug users and/or felons will disqualify an applicant from most positions. The same qualifications apply to the required internships.**

Notes

The Criminalistics Concentration is split into two tracks, A and B. Both Tracks impart a Bachelor of Science Degree in Chemistry with a Concentration in Criminalistics. Track A requires one semester of Physical Chemistry and two internships in Criminalistics. Track B requires one internship and a full year of Physical Chemistry (along with the required Calculus courses), which allows the student to earn the certification of the American Chemical Society (ACS). Please see a Department Advisor to discuss the ACS certificate requirements. The Senior Experience course for this concentration is CHE 4710. A grade of "C" or better is required for each course in this program to count toward the bachelor's degree. The requirement of a minor is waived for students in the Concentration Program, but all students must meet the University's General Studies requirements in order to graduate.

Chemistry BS with Criminalistics Concentration

Required Chemistry Core Courses	Credit Hours
CHE 1800 General Chemistry I	4
CHE 1801 General Chemistry I Lab	1
CHE 1810 General Chemistry II	4
CHE 1811 General Chemistry II Lab	1
CHE 3000 Analytical Chemistry	3
CHE 3010 Analytical Chemistry Lab	2
CHE 3100 Organic Chemistry I	4
CHE 3110 Organic Chemistry II	3
CHE 3120 Organic Chemistry I Lab	1
CHE 3130 Organic Chemistry II Lab	2
	Subtotal
	25
Required Additional Chemistry Courses	
CHE 4100 Instrumental Analysis	3
CHE 4110 Instrumental Analysis Lab	2
CHE 4310 Biochemistry I	4
CHE 4350 Biochemistry Laboratory	2
	Subtotal
	11
Required Criminalistics Courses	
CHE 2710 Introduction to Criminalistics	3
CHE 2711 Introduction to Criminalistics Laboratory***	1
CHE 3700 Criminalistics I	4
CHE 3710 Criminalistics II	4
CHE 4710 Criminalistics Internship II	3
	Subtotal
	15

Required Ancillary Courses

BIO 1080	General Biology I	3
BIO 1090	General Biology I Lab	1
BIO 3050	Cell and Molecular Biology	4
BIO 3600	General Genetics -OR-	4
BIO 3610	Genetics: Principles and Analysis	4
CJC 1010	Introduction to the Criminal Justice System	3
CJC 4650	Ethics for the Criminal Justice Professional***	3
MTH 1210	Introduction to Statistics -OR-	4
MTH 3210	Probability and Statistics	4
MTH 1410	Calculus I	4
	Subtotal	26

Required Physics Courses (you may complete either sequence)

PHY 2010	College Physics I	4
PHY 2030	College Physics I Lab	1
PHY 2020	College Physics II	4
PHY 2040	College Physics II Lab	1
	-OR-	
PHY 2311	General Physics I	4
PHY 2321	General Physics I Lab	1
PHY 2331	General Physics II	4
PHY 2341	General Physics II Lab	1
	Subtotal	10

Required Physical Chemistry Options (Choose A or B)**Option A**

CHE 3190	Survey of Physical Chemistry	4
CHE 3200	Survey of Physical Chemistry Lab	1
CHE 4700	Criminalistics Internship I	5

Option B

CHE 3250	Physical Chemistry I	4
CHE 3280	Physical Chemistry I Lab	2
CHE 3260	Physical Chemistry II	4
CHE 3290	Physical Chemistry II Lab	2
MTH 2410	Calculus II	4
MTH 2420	Calculus III	4

TOTAL CREDITS: **Option A** **Option B**
 97 **107**

*** For catalog years prior to Fall 2015, these requirements differ slightly. See Department Advisor to discuss options.