Forensic Science (FS)

B.S. with Major in Forensic Science (https://catalog.und.edu/undergraduateacademicinformation/departmentalcoursesprograms/forensicscience/fs-bs/)

FS 120. Introduction to the Forensic Sciences. 3 Credits.
Introduction to Forensic Sciences is for those who are curious about the many fields of the forensic sciences but have no previous background in: a) science; and/or b) forensic science. Forensic science is the study and application of science to the process of law and involves the collection, examination, evaluation, and interpretation of evidence. This course will provide the students with a greater understanding of the role of forensic science in society and the criminal justice system. F,S.

FS 345. Forensic Science Seminar. 3 Credits.
In this course, students will learn to analyze scientific literature, write peer scientific reviews, and prepare scientific presentations for class discussion. Students will be introduced to concepts, technologies, and methodologies that can be applied in forensic laboratories and experimental research. S.

FS 346. Analysis of Forensic Evidence. 3 Credits.
Throughout this course, students will engage in practical, hands-on activities related to crime scene investigation and evidence analysis. They will explore a range of concepts, technologies, and methodologies applicable to both crime scene investigations and forensic laboratory work. Prerequisite: FS 345 with a grade of C or better; Forensic Science majors and Criminal Justice majors and minors only or by instructor's consent. F,S.

FS 347. Firearms and Ballistics. 3 Credits.
Designed for all students majoring in Forensic Science. This course will allow students to practice and improve critical thinking skills as well as practical, oral, and/or written communication skills related to Firearms and Ballistics analytical techniques and methodologies, as well as case studies. This course provides an opportunity for students to integrate and apply knowledge related to forensic firearms examination, range of firing estimations and bullet hole examinations, and qualifying the expert and cross-examination questions. F.

FS 348. Bloodstain Pattern Analysis. 3 Credits.
Designed for all students majoring in Forensic Science. Bloodstain evidence has become a deciding factor in the outcome of many of the world's most notorious criminal cases. As a result, substantiation of this evidence is crucial to those on either side of the courtroom aisle. Bloodstain Pattern Analysis provides an in-depth investigation of this important subject matter. A multidisciplinary approach is presented that uses scene and laboratory examinations in conjunction with forensic pathology, forensic serology, and chemical enhancement techniques. Emphasis is on a thought process based on taxonomic classification of bloodstains that takes into account their physical characteristics of size, shape, and distribution, and the specific mechanisms that produce them. F.

FS 349. Forensic Photography. 3 Credits.
In this course students will gain in-depth and hands-on experience in the principles of forensic photography. Students will acquire the knowledge and skills to accurately document crime scenes and evidence using camera, lighting, and processing techniques. S.

FS 351. Trace Evidence Analysis. 3 Credits.
In this course students will acquire the knowledge and skills to collect, preserve and analyze trace evidence. While frequently overlooked at crime scenes, trace evidence has significant value. Using microscopic and chemical analysis, students will investigate paints, hair, fibers and glass evidence in both crime scene and laboratory situations. F.

FS 352. Fingerprinting and Friction Ridge Processing and Examination. 3 Credits.
Friction ridges have been used for personal identification for hundreds of years. Even in the DNA era, friction ridges still remain crucial to forensic science. In this course, students will gain knowledge and skills to accurately process friction ridge skin including various dusting, fuming, and lifting techniques. Additionally, students will use ACE-V methodology to examine and evaluate friction ridge marks. F.

FS 353. Forensic Serology. 3 Credits.
In this course students will identify and analyze body-fluids such as blood, semen, and saliva. This course will focus on the application of presumptive and/or confirmatory tests that are used in forensic laboratories. F.

FS 390. Forensic Chemistry. 3 Credits.
In this course students will be provided with the fundamental framework of forensic analytical chemistry from crime scene investigation to evidence sampling, laboratory analysis, quality aspects, and reporting and testifying in court. In doing so, important principles and aspects are demonstrated through the various forensic expertise areas in which analytical chemistry plays a key role, including illicit drugs, explosives, toxicology, fire debris analysis and micro traces such as gunshot residues, glass, and fibers. Prerequisite: CHEM 333. S.

FS 394. Forensic Microscopy. 3 Credits.
This course offers an in-depth exploration of forensic microscopy, providing students with practical, hands-on experience using various microscopes and microscopic techniques essential in forensic science. Students will learn to apply these techniques to analyze and interpret forensic evidence. F.

FS 450. Crime Scene Investigation and Analysis of Pattern Evidence. 3 Credits.
This course immerses students in the world of crime scene investigation, emphasizing the analysis of pattern evidence. Through hands-on learning, students will process and meticulously examine impression evidence, such as footwear, tire marks, and toolmarks. By mastering these techniques, students will acquire essential skills to uncover critical details and solve complex cases. S.

FS 490. Forensic Microbiology. 3 Credits.
This course offers an in-depth exploration of the principles and advanced laboratory techniques for the analysis of microorganisms. The course will focus on microbial evidence associated with soil, water, skin, hair, built environments and the process of decomposition. The role of microbiology in bioterrorism, public health and contamination will also be explored. Laboratory sessions will offer hands-on experience with collection, extraction, PCR, and sequencing of microbial DNA. F.

FS 494. Forensic Science Research. 1-4 Credits.
Advanced experience as a research assistant working alongside graduate researchers or faculty. During this course students will develop research skills regarding the practical applications of forensic science. Forensic Science research techniques and methods will be examined for the design of hypotheses, experimental design, samples collection, data analysis, interpretation, and dissemination. Prerequisite: Forensic Science majors and consent of instructor. F,S,SS.

FS 495. Forensic Science International Practical Experience. 3 Credits.
This international course is designed for all students majoring in Forensic Science. During this course students will gain critical knowledge regarding the international interdisciplinarity of forensic science, and valuable life experience by traveling abroad. This course will take place during the Spring Break, and the students will be traveling together with the director and co-director of this international program. S.

FS 498. Courtroom Proceedings and Testimony for Forensic Scientists. 3 Credits.
This course will enhance students' understanding of courtroom proceedings as they relate to forensic science and prepare students for expert witness testimony. The goal of this course is to provide students with the knowledge and practical experience necessary to successfully testify in a court of law as a forensic expert witness. Prerequisite or Corequisite: Forensic Science Majors, Junior or Senior standing. F.

FS 499. Forensic Entomology - From Crime Scene to Courtroom. 3 Credits.
Designed for all senior students majoring in Forensic Science. This course will allow students to practice and improve critical thinking skills as well as oral and/or written communication skills. This course provides an opportunity for students to integrate and apply knowledge and skills obtained in Forensic Science, starting with evidence collection and preservation, analysis and data interpretation, case report writing and expert courtroom testimony. Prerequisite: FS 345, FS 346, and Senior class standing. F.