

FORENSIC SCIENCE (FOSC)

FOSC 2100K - Intro to FOSC (3 Credits)

This course is designed as an introductory course for those who wish to pursue a career in forensic science. Course is an overview of investigative techniques and methods used in the crime laboratory to analyze physical evidence. Course will also provide lab exercises in the metric system of measurement, general crime scene investigative techniques, and methods of scientific analysis used in crime laboratories. Offered: Fall, Spring.

Lecture hours: 3

Lab hours: 2

FOSC 2110 - Survey Of Forensic Science (3 Credits)

This course will enlighten students with the basic principles and uses of forensic science in the criminal justice system. This course will review the basic applications of forensic science fields in crime reconstruction. The outcome of the course will include students gaining basic understanding of the importance and limitations of the forensic sciences in solving crime. Offered: Fall, Spring.

Lecture hours: 3

FOSC 2120K - Forensic Photography (3 Credits)

Designed as an introductory course in forensic photography, the history of photography will be presented. Technical aspects of exposure, images characteristics, and crime scene and evidence documentation will be introduced and projects will be used to apply these techniques. A final crime scene project with a presentation using photographs generated in the project will be used to show how photographic documentation can be used as an investigative and analysis technique in the reconstruction of a crime scene. Offered: Fall, Spring.

Prerequisites: FOSC 2100K

Lecture hours: 3

Lab hours: 2

FOSC 2130K - Crime Scene Invst & Recon (3 Credits)

This course is intended to familiarize students with the basic principles of Crime Scene investigations and reconstruction through Crime Scene Unit, Crime Scene Protocol, Crime Scene Evidence Collection and Crime scene interpretations. Offered: Spring.

Prerequisites: FOSC 2100K

Lecture hours: 3

Lab hours: 2

FOSC 2140K - Crime Scene Invest & Recon II (3 Credits)

This course will present opportunities to learn more principles in crime scene investigation including crime scene processing, crime scene Evidence Classification collection methods and crime scene reports. The course will go in depth and much more beyond what is presented in Crime Scene Investigation and Reconstruction I. Offered: Fall.

Prerequisites: FOSC 2130K

Lecture hours: 3

Lab hours: 2

FOSC 3020K - Forensic Microscopy of Trace (4 Credits)

Light microscopy of trace evidence including, contrast, resolving power and illumination; interference, phase and fluorescence microscopy; microscopy with polarized light, birefringence and crystal structure; dispersion staining; photomicrography; fibers, minerals, and residues. Offered: Fall.

Prerequisites: (PHYS 2211K and PHYS 2212K) or (PHYS 1111K and PHYS 1112K)

Lecture hours: 3

Lab hours: 3

FOSC 3030 - Criminal Evidence and Court Procedure (3 Credits)

Consideration of laws of criminal evidence, rules of search and seizures, chain-of-custody, admissibility, opinion and hearsay, etc., and the mechanics of trials. Offered: Fall.

Prerequisites: (CRJU 1100 and FOSC 2100K)

Lecture hours: 3

FOSC 3100K - International Forensic Science DNA Typing (3 Credits)

This course consists of lectures that review in some detail the history, scientific principles, forensic applications and practice of DNA typing and databases in different countries. This course will teach students about different DNA typing technologies and databases and their international usage and variations. DNA typing provides information on genetic variations in all forms of life and molecular level which can be used in forensics, clinical diagnostics and evolutionary biology among many fields. This course will also examine the roles and activities of international, regional and national organizations in the promotion and exchange of DNA database technologies and information. Offered: Fall.

Prerequisites: FOSC 2100K and BIOL 2107K

Lecture hours: 3

Lab hours: 2

FOSC 3200K - Bio Terrorism & Biotechnology (3 Credits)

This course was designed to help internalize the ASU Forensic Science program curriculum. The course is concerned with the scientific issues and nature of current and future threats posed by Bioterrorism and the connection between Biotechnology and bio-defense. The scientific theme and scope are international and involve showing how different countries, multinational companies and transnational organizations are active in the fields of Biotechnology and impacted by issues relating to Biotechnology and Bioterrorism. Offered: Spring.

Prerequisites: FOSC 2100K or BIOL 2107K

Lecture hours: 3

Lab hours: 2

FOSC 4040K - Forensic Serology/DNA Tech I (3 Credits)

Practices of search, collection, preservation, and identification of blood and body fluids as wet or dry stains; immunologic typing of blood; DA-typing and electrophoresis, and laboratory report. Distribution: Forensic Technology/Technician. Offered: Fall.

Prerequisites: (BIOL 2107K or CHEM 1212K) and CHEM 3250K

Lecture hours: 3

Lab hours: 2

FOSC 4050K - Forensic Chemistry (4 Credits)

Theory and practice of quantitative chemical analysis, chemical spectroscopy and instrumental methods of analysis: U.V., visible and infrared (IR) spectrophotometry, Fourier transform IR, fluorescence and fluorometry, atomic absorption and emission, Raman NMR, mass-spec., for structures and molecular stereochemistry; chromatographic methods of separation- TLC, HPLC, and GC. Laboratory report. Offered: Fall.

Prerequisites: (CHEM 2302K or CHEM 2302) or (CHEM 2351K or CHEM 2351 or CHEM 3151K)

Lecture hours: 3

Lab hours: 3

FOSC 4060K - SEM-EDAX of Trace Evidence (3 Credits)

Practice of scanning electronic microscopy with energy-dispersive X-rays for physical and elemental characterization of trace evidence, including gunshot residue particles, image processing and automation. Laboratory report. Offered: Spring.

Prerequisites: FOSC 3020K and PHYS 1111K and PHYS 1112K

Lecture hours: 3

Lab hours: 2

FOSC 4061K - Forensic Instrumentation and Analysis (3 Credits)

Practical applications and principles of modern instrumental methods of evidence analysis with special emphasis on spectrophotometric, separation techniques, Molecular Spectroscopy, Genetic analytical methods, and elemental analytical methods. The laboratory work is designed to provide practical experience on state-of-the-art analytical instruments such as NMR, IR spectrophotometer, Gas chromatography, and Mass spectroscopy, UV/Vis Spectroscopy, and Genetic analyzer.

Prerequisites: BIOL 2107K and CHEM 2302K

Lecture hours: 3

Lab hours: 2

FOSC 4080K - Forensic Serology/DNA Tech II (3 Credits)

Laboratory practice of confirmatory tests for traces of bloodstains and semen stains; electrophoresis of blood enzymes and blood grouping, advanced DNA-typing, etc., and Lab report. Offered: Fall.

Prerequisites: BIOL 2107K and CHEM 1212K

Lecture hours: 3

Lab hours: 2

FOSC 4090K - Controlled Substance/Toxicology (3 Credits)

Theory and practice of controlled substance identification GC-MS, HPLC, TLC, and infrared spectroscopy (IR/ FTIR), and detection of alcohol intoxication by breath testing. Laboratory report. Offered: Spring.

Prerequisites: CHEM 2302K

Restrictions:

Enrollment limited to students with a semester level of Senior.

Lecture hours: 3

Lab hours: 2

FOSC 4120K - Electron Optics, EM/Quant Anal (3 Credits)

An introduction to electron microscopy, optical designs of SEM, TEM, HVEM and STEM, and to microanalysis with wave length dispersive, energy-dispersive, and X-ray fluorescence spectrometers. SEM-EDX practice and laboratory report. Offered: Spring.

Prerequisites: FOSC 4060K

Lecture hours: 3

Lab hours: 2

FOSC 4130 - Expert Witness at Mock Trial (2 Credits)

Consideration of place of expert's in dispute resolution, cases that require expert testimony, pre-trial preparations, rules of evidence, articles and exhibits, courtroom demeanor, participation at criminal mock trials and offer expert testimony. Offered: Fall, Spring.

Prerequisites: FOSC 3030 and (CRJU 1100 or CRJU 260)

FOSC 4140K - Fingerprint Technology (2 Credits)

Practice of fingerprinting: identification and development of latent fingerprints, enhancements by laser, automated identification system, image processing and the expert fingerprint witness. Offered: Fall.

Prerequisites: FOSC 2100K

Lecture hours: 2

Lab hours: 2

FOSC 4150K - Evident Proc/Med Tech/Nur/Para (2 Credits)

Practice in evidence protection and collection: biological and medical evidence and controls to be collected, injuries to be photographed, legal and scientific requirements of packaging and storage, writing medical report and assisting, the coroner, rules of evidence and expert witness. Laboratory report. Offered: Spring.

Prerequisites: FOSC 3020K and FOSC 2130K

Lecture hours: 2

FOSC 4160K - Evidence Collection in Scientific Crime Investigation (w/ lab) (2 Credits)

A course for the first officer at the crime scene, investigators and specialized personnel in processing the crime scene and collection of evidence for a systematic investigation consistent with standards for law enforcement agencies and rules of evidence. Laboratory practice and report. Offered: Fall, Spring, Summer.

Prerequisites: FOSC 3010L or FOSC 3000

Lecture hours: 2

Lab hours: 2

FOSC 4170K - Ballistics of Firearms/Tool Mk (3 Credits)

Theory and practice of the physics of interior, exterior, and terminal ballistics as applied to identification of fire arms, bullets, and casing, primer and powder, gunshot residue formation and deposition, pellet distribution, muzzle-to-target distance and bullet wounds. Lab report. Offered: Spring.

Prerequisites: FOSC 2100K and FOSC 3020K

Lecture hours: 3

Lab hours: 2

FOSC 4201K - Evidence Analysis/Research (3 Credits)

On-campus research and evidence examination or Internship I to generate crime laboratory proficiency and competence in defending to witness in the presence of judges in a moot court. Offered: Fall, Spring.

Restrictions:

Enrollment limited to students with a semester level of Senior.

Lecture hours: 3

Lab hours: 2

FOSC 4999 - Senior Capstone Seminar (3 Credits)

This course involves establishing students' understanding of ethics, quality control and assurance and their being able to explain, analyze and apply their knowledge of these topics. The course also reviews laboratory techniques and field practice in the forensic science field as well as certain of the forensic science professional literature. Preparation of application materials for Forensic careers and the review and exercise of their forensic knowledge gained during the program may also be done based on time and inclination of students. Offered: Fall, Spring.

Restrictions:

Enrollment limited to students with a semester level of Senior.

Lecture hours: 3