

# FS-Forensic Science

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## **FS 550. Instrumental Analysis. 3 Hours.**

This course concerns the theory and practice of instrumental methods for the separation, identification and quantitative analysis of chemical substances. Upon completion of this course, students will have a working knowledge of analytical instrumentation typically employed in chemical/biochemical research and industry laboratories.

## **FS 565. Cold Case Analysis. 3 Hours.**

Introduction to the methods used in analyzing unsolved cases, including innovative uses of technology, 3rd party investigators, and teams.

## **FS 567. Forensic Toxicology. 3 Hours.**

Discussion of drugs and poisons found in biological evidence, including the pharmacokinetic and pharmacodynamic properties of drugs and poisons, evidence collection and handling, selection of the most appropriate evidence, and analytical methods of detection.

## **FS 572. Molecular Genetics for Forensic Scientists. 3 Hours.**

Gene structure, function, and regulation. Chromosome structure and inheritance. An overview of the human genome.

## **FS 650. Advanced Questioned-Death Investigation. 3 Hours.**

Examination of forensic pathology as used in local medical examiners' offices.

## **FS 653. Advanced Investigation of Fires and Explosions. 3 Hours.**

Introduction to arson investigation including overview of specific techniques used in case investigation.

## **FS 670. Elements of Forensic Science. 3 Hours.**

Introduction to philosophical considerations and historic landmarks in the discipline; overview of major sub-disciplines in forensic science; examination of the ethics and expert witnesses and their role in forensic science.

## **FS 671. Conventional Criminalistics. 3 Hours.**

Exploration of basic methodologies and approaches for identifying, collecting, and analyzing trace and pattern evidence, including an overview of microscopy.

## **FS 672. Advanced Conventional Criminalistics. 3 Hours.**

Examination of advanced methods for the analysis of trace and pattern evidence.

**Prerequisites:** FS 671 [Min Grade: C]

## **FS 673. Forensic Drug Analysis. 3 Hours.**

Exploration of the isolation, identification, and quantification of commonly abused drugs and common poisons; interpretation of findings and correlation with legal applications.

## **FS 674. Molecular Biology in Forensic Science. 3 Hours.**

DNA replication, transcription, and translation. Polymerase chain reaction (PCR) techniques used to amplify human DNA for identification of biological evidence. Methods for identifying and collecting blood and semen stains. DNA extraction. Short tandem repeat typing using capillary electrophoresis.

**Prerequisites:** FS 572 [Min Grade: C]

## **FS 676. Advanced Biological Methods in Forensic Science. 3 Hours.**

Discussion of current issues and trends in forensic DNA analysis, including advanced analysis of biological evidence samples.

**Prerequisites:** FS 674 [Min Grade: C]

## **FS 677. Advanced Drug Chem. & Toxicology. 3 Hours.**

Discussion of relevant analyses conducted for drugs and poisons occurring in biological evidence; examination of the pharmacokinetic and pharmacodynamic properties of detected substances.

**Prerequisites:** FS 567 [Min Grade: C]

## **FS 679. Seminar in Forensic Science. 3 Hours.**

Review of forensic science in the literature. Review, discussion, and presentation of forensic science student research.

## **FS 680. Graduate Internship in Forensic Science. 1-3 Hour.**

Field experience in a forensic science laboratory.

**Prerequisites:** FS 698 [Min Grade: C] or FS 699 [Min Grade: C]

## **FS 686. Special Topics in Forensic Science. 3 Hours.**

In-depth review of 3-4 topics in forensic science presented by practitioners in the field.

## **FS 698. Directed Research in Forensic Science (Non-Thesis). 1-6 Hour.**

Independent study in a student's substantive area of interest under the direction of a faculty member.

**Prerequisites:** FS 679 [Min Grade: C]

## **FS 699. Thesis Research in Forensic Science. 1-6 Hour.**

Independent study in a student's substantive area of interest under the direction of a faculty member. Admission to candidacy and successful defense of thesis proposal.

**Prerequisites:** GAC M

## **FS 703. Laboratory Rotation III: Drug Analysis. 3 Hours.**

Lab Rotation III Drug Analysis.

## **FS 704. Laboratory Rotation II: Biological Methods. 3 Hours.**

Lab Rotation II Biol Methods.