

# FORENSIC SCIENCE (FRSC)

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## **FRSC 363 CHEMISTRY OF DANGEROUS DRUGS (3)**

A study of the chemistry, methods of detection and analysis of narcotics, depressants, stimulants and hallucinogens. Also, the influence of physiochemical properties upon the pharmacological effects of drug receptor interactions. Historical, forensic, and socio-economic implications associated with drug abuse will also be reviewed. Prerequisites: CHEM 220/ CHEM 220L (CHEM 210) and CHEM 332.

## **FRSC 367 FORENSIC CHEMISTRY (3)**

Introduction to chemical and physical analyses used by a modern crime laboratory in the evaluation of physical evidence encountered in criminal acts. Areas of concentration will include forensic microscopy, drug analysis, toxicology, explosives analysis, arson examination, and trace evidence. Emphasis will be placed on the value of such examinations as presented by the expert witness in a criminal trial. Prerequisites: CHEM 332 and CHEM 220/ CHEM 220L (CHEM 210); CHEM 220/ CHEM 220L may be taken concurrently.

## **FRSC 368 PROFESSIONAL PRACTICES IN FORENSIC SCIENCE (3)**

Introduction to the various professional practices encountered in forensic science including Laboratory Safety, Quality Assurance and Quality Control, Documentation, Ethics, Chain of Custody, and Expert Witness Testimony. Prerequisites: CHEM 220/ CHEM 220L (CHEM 210), CHEM 332.

## **FRSC 401 FORENSIC SCIENCE CAPSTONE (3)**

An integrative forensic science course where students demonstrate their scientific literacy, in-depth understanding of forensic problems, communication skills, presentation and writing skills, critical thinking and analysis skills obtained throughout their undergraduate academic experience. Prerequisite: FRSC 367.

## **FRSC 420 BODY FLUID ANALYSIS (4)**

Current methods and concepts in forensic biology with laboratory practice in identification and individualization of biological forensic samples by several different methods, including biochemical testing, antigen-antibody reactions, and DNA typing, representing best practice in forensic science. Prerequisite: BIOL 409 (may be taken concurrently). Lab/Class fee will be assessed.

## **FRSC 422 ADVANCED SEQUENCING METHODS (3)**

Theory and application of DNA sequencing technology including Sanger sequencing, pyrosequencing, and massively parallel sequencing and their uses in forensic DNA analysis. Five lecture/laboratory hours. Prerequisites: (FRSC 420 and MATH 237) or permission of instructor.

## **FRSC 440 FORENSIC SCIENCE, EMERGENCY MEDICINE, AND DEATH ANALYSIS (3)**

Overview of the principles of Forensic Science as it applies to emergency medicine in physical and sexual assaults, environmental contamination, natural mass disasters, terrorist attacks, and natural and suspicious deaths. Prerequisite: FRSC 367.

## **FRSC 467 FORENSIC ANALYTICAL CHEMISTRY (3)**

Instruction and laboratory practice of analytical procedures used for analysis of arson, explosives and trace evidence. Laboratory work includes sample preparation and use of microscopes, FTIR, and GC/MS as well as analysis and interpretation of data. Use of conformity to standard protocols, calibration, and discriminant function analysis. Prerequisites: CHEM 220/ CHEM 220L (CHEM 210); FRSC 367 (may be taken concurrently). Lab/Class fee will be assessed.