

# FORENSIC SCIENCE (FOR)

## FOR 588 TOPICS COURSE

3, 3/0

## FOR 596 GRADUATE CONFERENCE IN FORENSIC SCIENCE

1-3, 3/0

Participation in a regional, national, or international conference in the field of forensic science overseen by a faculty member. Offered occasionally.

## FOR 598 GRADUATE MICROCOURSE

1-3, 0/0

Examination of significant disciplinary issues, topics, or practices

Equivalent Course: CHE 598

## FOR 612 PRINCIPLES OF FORENSIC SCIENCE

3, 3/0

Prerequisite: CHE 301 or equivalent. Overview of forensic laboratory procedures and practices. Includes field testing, laboratory screen tests, instrumental analyses, microscopy, molecular identification, blood-alcohol analyses, identification of physical evidence, pattern evidence, crime-scene processing, evidentiary value of chemical analysis, auditing, peer-review procedures, and quality issues. Sampling techniques, data quality, error rates, blind proficiency testing, and their relevance to legal decisions.

## FOR 614 FORENSIC APPLICATIONS OF INSTRUMENTAL ANALYSIS

4, 2/6

Prerequisites: CHE 403 or CHE 680 and FOR 612 or CHE 312 or equivalents. Introduction to forensic chemical analysis using representative instrumental techniques, including spectroscopy and chromatography; emphasis on laboratory-based studies for applications of these instruments to provide extensive experience in solving various analytical issues present in forensic laboratories.

## FOR 616 MICROSCOPY IN FORENSIC SCIENCE

2, 1/2

Prerequisites: FOR 612 or CHE 312 or equivalents. Introduction to microscopic investigations for forensic pattern evidence and trace analysis; fundamental theory, principles of operation, varieties, and capabilities of optical microscopy and applications in forensics; fundamentals and applications of transmission and scanning electron microscopy for forensic imaging at atomic-scale resolution and chemical analysis; laboratory sections for pattern analysis and trace analysis.

## FOR 618 DRUG CHEMISTRY AND TOXICOLOGY

3, 3/0

Prerequisites: CHE 202 and CHE 612 or CHE 312 and CHE 680 or CHE 403 or equivalents. Overview of misused and illegal pharmaceuticals, toxicology, poisons, forensic drug analysis, and illicit drug manufacture. Types, classes, and structures of illicit pharmaceuticals and the laws governing these substances; mechanism of biological activity and toxicological issues of each class; immunoassay technologies for drugs-of-abuse testing analysis; methods of forensic analysis of commonly encountered illegal drugs; and methods of surreptitious manufacture and law enforcement concerns with clandestine laboratories.

## FOR 690 MASTERS PROJECT

1-4, 0/0

A study on a problem of special interest planned and executed with consultation and advisement from the instructor and the student's project committee. The project will be submitted in acceptable form according to directions given by the Chemistry Department and presented orally to an audience of Chemistry Department faculty and students.

## FOR 721 THESIS/PROJECT CONTINUATION

0, 0/0

## FOR 722 THESIS/PROJECT EXTENDED

0, 0/0

## FOR 795 RESEARCH THESIS IN FORENSIC SCIENCE

1-12, 0/0

Individual investigation of an original problem in Forensic Science submitted in acceptable form according to directions given by the Chemistry Department and the Graduate School.