

FORENSIC SCIENCE (FSC)

FSC 600 Molecular Biology

3 Credit hours

A study of the molecular biology of the cell and its organelles, cell interactions, and differentiation.

Grade Mode: Normal Grading Mode

FSC 603 Genetics-DNA Lab

1 Credit hour

Laboratory to be offered in conjunction with FSC 604 Genetics and DNA Technology stressing techniques and methods required for DNA analysis used in forensic case investigations, in CODIS laboratories and in paternity testing.

Grade Mode: Normal Grading Mode

FSC 604 Genetics & DNA Technology

3 Credit hours

A comprehensive lecture series that covers the genetics and biochemistry of DNA to include the analysis, ethical considerations and quality assurance techniques used to analyze DNA for identification purposes. This course serves as a core course in the forensic science curriculum.

Grade Mode: Normal Grading Mode

FSC 605 F S Digital Imaging

3 Credit hours

Introductory course in digital image processing. Covers techniques used in forensic laboratory to enhance, analyze, and catalog digital images. Instruction in lab setting.

Grade Mode: Normal Grading Mode

FSC 606 Crime Scene/Death Investiga

3 Credit hours

Establishes foundations and techniques for proper crime scene investigation with or without a victim's body. Logical approach for collecting evidence and documenting scene and collection process.

Grade Mode: Normal Grading Mode

FSC 607 Blood Stain Pattern Analysis

3 Credit hours

A comprehensive bloodstain pattern analysis course including bullet trajectory, courtroom testimony, and report writing. This course is taught as a combination of lectures, laboratories, and practical exercises.

Pre-req: FSC 606.

Grade Mode: Normal Grading Mode

FSC 608 Forensic Toxicology

3 Credit hours

An in-depth analysis of both clinical and forensic aspects of toxicology from the viewpoint of the forensic and medical examiner's toxicology laboratories.

Grade Mode: Normal Grading Mode

FSC 609 Network Forensics

3 Credit hours

Teaches the basics of how computers and networks function, how they can be involved in crimes as well as used as a source of evidence.

Grade Mode: Normal Grading Mode

FSC 610 Bioterrorism: Forensics

3 Credit hours

Course traces the historical development, current status, and future threats of bioterrorism in the U.S. and on a global scale. Issues addressed include microbiology, surveillance, detection and post-event investigation.

Grade Mode: Normal Grading Mode

FSC 612 Intro Foren Micro/Trace

2 Credit hours

Introduction to various types of microscopy used in forensics, including scanning electron microscopy, light and fluorescence microscopy and polarizing microscopy. Photographic techniques used for documentation will also be discussed.

Grade Mode: Normal Grading Mode

FSC 615 Adv Crime Investigation

3 Credit hours

This course addresses various areas of crime scene investigation not or minimally addressed in the FSC 606 introductory course. Topics include arson/explosives, body excavation, forensic entomology, advanced impression evidence, wound analysis.

Pre-req: FSC 606.

Grade Mode: Normal Grading Mode

FSC 617 Adv Crime Photo & Document

2 Credit hours

This series of lectures and practical exercises introduces the student to sophisticated crime scene documentation techniques including sketching, surveying, photography and crime scene management techniques.

Pre-req: FSC 606.

Grade Mode: Normal Grading Mode

FSC 618 Forensic Comparative Sciences

2 Credit hours

Introduction to comparative methods used by forensic scientists for analysis of fingerprints, questioned documents, and firearms.

Grade Mode: Normal Grading Mode

FSC 619 Forensic Statistics

3 Credit hours

Basic theory of probability and statistics, odds from Bayes' theorem for transfer evidence, likelihood ratio, population and statistical genetics, statistical issues in paternity testing and mixtures, and presenting evidence.

Grade Mode: Normal Grading Mode

FSC 622 Forensic Analytical Chem

3 Credit hours

Analytical chemistry instrumentation and methods used by forensic scientists for analysis of drugs, toxicology, arson, explosives, trace evidence and sample collection and processing.

Grade Mode: Normal Grading Mode

FSC 623 Forensic Chemistry Laboratory

1 Credit hour

Laboratory practicum will develop skill set needed in the forensic analysis of physical evidence using standard methods and modern analytical instrumentation.

Grade Mode: Normal Grading Mode

FSC 624 Biochemistry: Forensic Science

4 Credit hours

This comprehensive course in biochemistry focuses on concepts appropriate to forensic science and designed to meet forensic science educational standards at a national level.

Grade Mode: Normal Grading Mode

FSC 626 Advanced Drug Analysis

2 Credit hours

Concentration on modern analytical methods used in the isolation and the identification of illicit drugs and their metabolites in biological samples and other forensic evidence. (PR: FSC 622 or permission of instructor)

Grade Mode: Normal Grading Mode

FSC 627 Human Genetics**2 Credit hours**

Human Genetics serves as an introduction to the study of heritable traits in humans and their molecular basis; basic genetic principles, statistics, and probability; population database analyses; principles of population genetics and laws of Mendelian genetics as they relate to human identification; application of paternity testing and identification of human remains; use of single nucleotide polymorphisms (SNPs) and mtDNA profiling in forensic applications.

Pre-req: FSC 624.**Grade Mode:** Normal Grading Mode**FSC 628 Chem Analysis Trace Evidence****2 Credit hours**

A continuation of FSC 622 emphasizing additional types of evidence including paint, inks, fibers, and plastics. Methods Include pyrolysis-GCMS, micro-FTIR, GPC and capillary electrophoresis. Required course for Forensic Chemistry emphasis.

Grade Mode: Normal Grading Mode**FSC 629 Advanced DNA Technologies****2 Credit hours**

This course will provide advanced instruction in DNA technologies to assist in the preparation for a career in a forensic DNA laboratory.

Pre-req: (FSC 603 or FSC 643) and FSC 604.**Grade Mode:** Normal Grading Mode**FSC 630 Internship****5 Credit hours**

A 10 week internship in a crime lab or other forensic science related research laboratory. Application of principles and techniques learned during first year of program.

Grade Mode: Normal Grading Mode**FSC 632 Found Fund Digital Forensics****3 Credit hours**

The course provides fundamental information to lay the foundation for the Digital Forensics Area of Emphasis. A range of topics includes laws and regulations relating to stored digital data, quality assurance and ethics in a digital laboratory, basic terminology, computer hardware and various storage media, software, including operating and file systems, and basics concepts of computer security. The course is taught primarily in a lecture format. Class discussions and participation in practical exercises supplement lectures.

Grade Mode: Normal Grading Mode**FSC 634 Comp Search & Seizure****3 Credit hours**

Topics covered in this course will expand upon material covered in FSC 632. Additional areas include affidavits and warrants, national information security concepts, evidence collection, transport and preservation, computer networks, e-mail traces, imaging of original evidence, introduction to forensic tools, Window registry, malware and spyware, virtualization and hand held devices. Classes are presented in a lecture format and culminates with a mock, digital crime scene exercise.

Grade Mode: Normal Grading Mode**FSC 636 Mobile Phone Forensics****2 Credit hours**

This course addresses the complexity and structure of modern smart phones and focuses on data evidence storage and extraction for criminal case investigations.

Grade Mode: Normal Grading Mode**FSC 640 Firearms Toolmarks I****1 Credit hour**

This course provides an enhanced learning experience designed to reduce the time to competency typical of the knowledge required component fo a firearms examiner training program. FSC 640 is the first of two firearms and toolmarks examiner training courses.

Grade Mode: Normal Grading Mode**FSC 641 Firearms Toolmarks II****1 Credit hour**

This course provides an enhanced learning experience designed to reduce the time to competency typical of the knowledge required component of a firearms examiner training program. FSC 641 is the second of two firearms and toolmarks examiner training courses.

Grade Mode: Normal Grading Mode**FSC 642 DNA Tech Assistance I****2 Credit hours**

The goal of the DNA Technical Assistance Program (DNA TAP) is to prepare select students for placement in host forensic laboratories for validation and evaluation research studies. The student undergoes accelerated lectures and intense hands-on laboratory exercises including analytical procedures, instrument training, and data analysis.

Grade Mode: Normal Grading Mode**FSC 643 DNA Tech Assistance II****2 Credit hours**

The goal of the DNA Technical Assistance Program (DNA TAP) is to prepare select students for placement in host forensic laboratories for validation and evaluation research studies. The student undergoes accelerated lectures and intense hands-on laboratory exercises including analytical procedures, instrument training, and data analysis.

Grade Mode: Normal Grading Mode**FSC 646 Lab Management****2 Credit hours**

This course provides a foundation in management theory, principles & application necessary for forensic scientists who aspire to assume future positions as crime lab supervisors, managers, technical leaders, quality managers, directors or other roles as leaders in their field. This course addresses management theory as well as its practical application to the crime laboratory setting from an ISO/IEC 17025 perspective.

Grade Mode: Normal Grading Mode**FSC 650 Special Topics****1-4 Credit hours**

Present course material on special areas of research or topics which are not routinely covered in existing courses.

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Present course material on special areas of research or topics which are not routinely covered in existing courses.

Grade Mode: Normal Grading Mode**FSC 653 Special Topics****1-4 Credit hours**

Present course material on special areas of research or topics which are not routinely covered in existing courses.

Grade Mode: Normal Grading Mode**FSC 660 Independent Study****1-4 Credit hours****Grade Mode:** Normal Grading Mode**FSC 665 Legal Court in Forensic****3 Credit hours**

Covers the American legal system with specific emphasis on expert witnessing by forensic scientists. Mock trials provide experience in the courtroom.

Grade Mode: Normal Grading Mode**FSC 676 Adv Dig Evid Detect Recovery****2 Credit hours**

This advanced Digital Evidence Detection and Recovery course will provide an overview of the advanced procedures and techniques used by investigators working with digital evidence. This course will be taught as a combination of lectres, lab and practical exercises.

Grade Mode: Normal Grading Mode

FSC 679 Special Problems **1-4 Credit hours**

Students will be assigned specific areas of study for independent investigation. (PR: Consent of advisor)

Grade Mode: Normal Grading Mode

FSC 680 Seminar **1 Credit hour**

Faculty, student and guest speaker presentations of topics pertinent to forensic science.

Grade Mode: Normal Grading Mode

FSC 681 Thesis **1-6 Credit hours**

Research conducted in the laboratories at MU which is focused on a problem of forensic importance. The original research problem will be written up as a formal document and submitted as part of the requirements to fulfill a MS degree in the research track.

Attributes: Thesis

Grade Mode: Normal Grading Mode

FSC 685 Intro Research **1-6 Credit hours**

Directed research which can be used to satisfy requirements for a Master's Degree in Forensic Science.

Grade Mode: Normal Grading Mode