

# J. Frank Barefield, Jr. Department of Criminal Justice

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The J. Frank Barefield, Jr. Department of Criminal Justice is home to multiple graduate programs, including programs of study leading to the [Master of Science in Criminal Justice \(MSCJ\)](#), the [Master of Science in Forensic Science \(MSFS\)](#), the [Master of Science in Cyber Security](#) (jointly with the Department of Computer Science) and graduate certificates in Computer Forensics. The department also co-sponsors a joint [MSCJ/MPA program](#) with the Department of Political Science and Public Administration.

The certificate in Computer Forensics is designed for people who want to have experience in computer forensics, but not at the level of a degree program. It can be an add on to a current graduate program (for example, criminal justice for those who want to be a forensic examiner for a law enforcement agency, forensic science to expand skills, or for other degrees where computer forensics could be helpful). It can also be helpful to professionals working in cybersecurity, forensics, and other fields who would like to have additional training in computer forensics. NOTE: This is not an online program. Some courses may be taken on line; but most have hands on requirements that necessitate classroom attendance.

## Application Deadlines

- **Fall semester:** July 1 for completed application
- **Spring semester:** November 1 deadline for completed application

## Application Information

Students are accepted into the program during the Fall or Spring of each year. Students are strongly encouraged to submit their completed application materials to the Graduate School no later than July 1 for Fall admission and November 1 for Spring admission. A completed application includes the following:

- application for admission
- payment of application fee
- transcripts from all post-secondary institutions the student attended
- three letters of recommendation
- a personal statement

All applications for admission to the Certificate Program are made through the UAB Graduate School and not to the Department. Application for admission can be made online through the [UAB Graduate School website](#) or by calling (205) 934-8227.

The Graduate School requires an official transcript from every institution attended. The mailing address to send official transcripts is:

UAB Graduate School  
LHL G03  
1720 2nd Avenue South

Birmingham, AL 35294-0013

## Application Fees

Application fees are \$50 for domestic students and \$60 for international students.

## Admission Requirements

Applicants must supply transcripts showing completion of a bachelor's degree from a regionally accredited college or university in the United States

## International Students

International students have additional requirements and are strongly urged to consult the UAB Graduate School before seeking admission to the Computer Forensics certificate program. TOEFL and TWE are required for international applicants whose native language is not English. Minimum scores:

- TOEFL: 80
- IELTS: 6.5
- PTEA: 53

Electronic transfer code for submission of TOEFL scores is 1856.

Read about the Certificate program and course descriptions in the [Graduate Catalog](#).

## Computer Forensics Graduate Certificate J. Frank Barefield, Jr. Department of Criminal Justice

The Computer Forensics Graduate Certificate equips professionals with a comprehensive understanding of key topics relevant to their work in digital forensics or related fields. Given the diverse settings where these skills are applied—from educational institutions to corporate environments—the curriculum is flexible, allowing students to select electives that best align with their specific professional goals.

Requirements	Hours
CJ 501 Foundations of Digital Forensics	3
CJ 502 Computer Forensics	3
CJ 519 Investigating Online Crimes	3
<b>Electives <sup>1</sup></b>	<b>9</b>
CJ 537 Digital Media Forensics	
CJ 538 Investigation of Malicious Attacks	
CJ 554 Financial Crimes and Investigations	
<b>Total Hours</b>	<b>18</b>

<sup>1</sup> Course substitutions may be made with written approval of the Graduate Director and Department Chair.

## CJ-Criminal Justice Courses

### CJ 500. Drugs and Society. 3 Hours.

This course teaches students the pharmacological effects and different categories of drugs. Different theories of drug use are discussed as well as the historical development of drug laws including different methods of regulating drug use. Various harms associated with drug use are discussed as well as the consequences of drug prohibition.

**CJ 501. Foundations of Digital Forensics. 3 Hours.**

This course provides those who do not have a strong background in digital forensics the foundational information and programs used in countering cybercrime. You will become familiar with common programming languages and tools used in digital forensic investigations. You will also be required to learn an industry-focused writing style.

**CJ 502. Computer Forensics. 3 Hours.**

Use of analytical and investigative techniques in criminal or civil litigation to identify, collect, examine and preserve evidence/information magnetically stored or encoded.

**CJ 503. Restorative Justice. 3 Hours.**

Introduction to, and analysis of, movement in criminal justice to institutionalize peaceful approaches to harm, problem-solving and violations of legal and human rights. Includes discussion of specific programs, critical evaluation of these programs, and analysis of future directions of the movement.

**CJ 504. Serial Killers. 3 Hours.**

Examination of the psychology and sociology of serial killers; case studies and agency responses to these offenders.

**CJ 507. Special Topics in Criminal Justice. 3 Hours.**

In-depth analysis of substantive topic in criminal justice or criminology including contemporary issues, ethics, historical review, or related topics. Varies by semester and by Instructor. May be repeated twice for credit.

**CJ 508. Juvenile Delinquency. 3 Hours.**

Introduction to the nature, scope, and causes of illegal behavior by juveniles, and societal responses to that behavior.

**CJ 511. Juvenile Justice System. 3 Hours.**

Introduction to the evolution and operation of specialized agencies and procedures to address juvenile law-breaking, including emerging problems and solutions.

**CJ 512. Juvenile Law. 3 Hours.**

Review and analysis of emerging statutory and case law in American juvenile justice.

**CJ 519. Investigating Online Crimes. 3 Hours.**

Study of cyber investigative techniques, involving focused analysis of email and websites; examination of legal process and preparing evidence in cyber crime cases.

**CJ 530. Ethics and Computer Forensics. 3 Hours.**

Overview of different systems of ethics; the role of ethics in computer forensics, cybercrime investigation, and information security; examination of ethical issues facing professionals involved in computer forensics, cybercrime investigation, and information security.

**CJ 537. Digital Media Forensics. 3 Hours.**

Digital media forensics addresses all stored digital evidence types faced by cyber security professionals and computer forensics examiners. Students will learn to analyze character encoding, file formats, and digital media, including hard drives, smartphones and other portable devices, and cloud-hosted evidence, as well as disk acquisition, duplication and evidence preservation techniques and how to apply these techniques in typical criminal investigation scenarios.

**CJ 537L. Digital Media Forensics Lab. 0 Hours.**

Laboratory to accompany CJ 537.

**CJ 538. Investigation of Malicious Attacks. 3 Hours.**

An advanced examination of analysis of malicious attacks from a criminal justice perspective. Topics include investigative techniques and practices, static and dynamic analysis, and technique and tools of investigations of malicious attacks. The structure of a malicious attack investigations from the perspectives of both an incident responder and law enforcement investigators targeting a cyber criminal through a series of case studies. Counts toward the MSCJ and Computer Forensic certificate.

**Prerequisites:** CJ 502 [Min Grade: C]

**CJ 540. White Collar and Corporate Crime. 3 Hours.**

Introduction to, and analysis of, illegal/deviant behavior occurring in organizational settings, including crimes committed by and against complex organizations.

**CJ 542. Race, Crime, and Social Policy. 3 Hours.**

Examination of how subordinate status of racial and ethnic minority groups affects interaction with the justice system as offenders, victims, and professionals.

**CJ 543. Women and Crime. 3 Hours.**

Provides students with a view into the intersection of gender and crime. Explores core topics on experiences of women and girls as victims, offenders, and criminal justice professionals.

**CJ 550. Questioned Death Investigation. 3 Hours.**

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

**CJ 554. Financial Crimes and Investigations. 3 Hours.**

Survey of the field of financial crime and its investigation, including review of various financial crimes (fraud, money laundering, cybercrime, etc.), investigative techniques, resources specific to the investigation of these crimes, and the role of financial institutions in combating these crimes.

**CJ 560. Violence: An American Tradition. 3 Hours.**

The course examines violence as an American tradition. Although the class examines historical acts of violence as catalysts for social change, the emphasis will be on destructive or negative violence, -- criminal violence. The class examines many different acts of violence in society as well as policies and prevention strategies.

**CJ 562. Victimization and the Life Course. 3 Hours.**

Analyzes victimization over time and across the life course; reviews life course principles in sociology and criminology, and their application to victimization explanations.

**CJ 563. Urban Structures. 3 Hours.**

One of the oldest explanations of criminal behavior is that crime is concentrated in particular areas of the city. This class examines the structure of cities, how they grow, and particularly how they decline. It addresses how this decline can produce high levels of crime. It also addresses how cities can be revitalized, and how the justice system can work to reduce crime in these areas.

**CJ 564. Crime and Place. 3 Hours.**

One of the oldest explanations of criminal behavior is that crime is concentrated in particular areas of the city. But why is that? Is it something about the people, the place, or both? This class will look at the structure of cities, how they grow, and particularly how they decline. We will talk about how this decline can produce high levels of crime. We will also talk about how cities can be revitalized, and how the justice system can work to reduce crime in these areas.

**CJ 566. Spatial Analysis. 3 Hours.**

This skills-based class will introduce students to the application of geographic information systems (GIS) to crime-related topics and issues.

**CJ 583. Patterns in Crime. 3 Hours.**

Examination of the major correlates of crime and criminality, including age, race, sex, and socio-economic status, examination of major sources of information from which data on crime correlates are gathered.

**CJ 592. Study Away in Criminal Justice. 3 Hours.**

Affords students the opportunity engage in academic study outside of the U.S. to examine substantive topics in crime and justice. Students spend time at a destination point, where they engage with students and faculty members in classroom and research settings at partner post-secondary institutions, experience immersion in foreign culture, and engage in comparative analysis of policies and programs relating to crime and justice.

**CJ 600. Pro-Seminar in Criminal Justice. 3 Hours.**

Critical analysis of formal and informal processing of offenders by criminal justice agencies, including police, courts, and corrections; effectiveness and future directions.

**CJ 601. Seminar in Criminological Theory. 3 Hours.**

Classic and contemporary theoretical explanations of crime and criminality.

**CJ 603. Seminar in Criminal Justice Administration. 3 Hours.**

Theories of organizational structure, motivation, and management applied to criminal justice agencies.

**CJ 604. Seminar in Criminal Justice Policy. 3 Hours.**

Origins, formulation, implementation, and evaluation of criminal justice policy; classic and contemporary examples of policy innovations.

**CJ 605. Seminar in Research Design. 3 Hours.**

Quantitative methods of empirical research emphasizing criminal justice/criminological applications; current research methodologies relating to analysis of issues involving crime and criminal justice.

**CJ 606. Seminar in Data Analysis. 3 Hours.**

Bivariate and multivariate analyses and interpretation of results from substantive research.

**CJ 675. Law Evidence and Procedure. 3 Hours.**

Overview and examination of the legal aspects of physical evidence, including rules of evidence, procedural rules, and the role of expert witnesses.

**CJ 688. Special Topics in Criminal Justice. 3 Hours.**

Special Topics in Criminal Justice.

**CJ 693. Graduate Practitioner Internship in Criminal Justice. 3 Hours.**

Internship specifically arranged for practitioners internship credit for the criminal justice major.

**CJ 695. Graduate Independent Study (Non-Thesis). 3 Hours.**

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

**CJ 696. Graduate Internship in Criminal Justice. 3 Hours.**

Field experience in criminal justice agency setting. May be repeated for a maximum of 6 hours credit.

**CJ 697. Graduate Plan II Research Project. 3 Hours.**

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

**CJ 698. Directed Research (Non-Thesis). 3 Hours.**

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

**CJ 699. Thesis Research. 1-6 Hour.**

Admission to candidacy and successful defense of thesis proposal.

**Prerequisites:** GAC M

**FS-Forensic Science Courses****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.