



JOHN JAY COLLEGE  
THE CITY UNIVERSITY OF NEW YORK  
OF CRIMINAL JUSTICE

## **CAD4SCI**

### **Certificate of Applied Digital Forensic Science**

The Certificate of Applied Digital Forensic Science, *CAD4SCI*, will be awarded by the faculty of the Master of Science in Forensic Computing Program at John Jay College of Criminal Justice to recognize a high level of demonstrated skill in the application of computer science knowledge and technology to practical digital forensic and security problems. An application for this advanced certificate program has been submitted to the State of New York and we anticipate approval of CAD4SCI by January 2012. In the meantime both the courses and the certification exam are being offered.

**Who should apply?** The program requires an undergraduate level knowledge of core computer science, to include operating systems, programming, algorithms, data structures, networks and discrete structures.

**Information Assurance Professionals.** The certificate program suits the needs of working professionals who are trained in computer science and who wish to develop knowledge and skill in digital forensics without committing to a full graduate degree program.

**Computer Science Graduate Students.** Students enrolled in graduate computer science programs may apply for the certificate program and pursue it as part of or in addition to coursework in their degree program. Normally this will require the permission of the student's academic adviser. CUNY students may register for courses under the ePermit system. Students enrolled in the John Jay College Master of Science in Forensic Computing program may pursue the certificate as part of their degree program.

**Earning the Certificate.** The certificate program entails four graduate courses plus a practical examination. The required courses, shown below, link theory to practice by providing ample hands-on work. Upon satisfactory completion of the coursework students take the Applied Digital Forensic Science Certification Exam.

#### **FCM 710. Architecture of Secure Operating Systems**

The design, implementation and administration of modern operating systems are reviewed. Topics covered include concurrent execution, process and memory management, local and networked file systems. Security models, access control mechanisms and security enhanced version of current operating systems are discussed.

#### **FCM 742. Network Security**

Fundamentals of computer networks and distributed processing. Network security policy, risk assessment and management, and protocols for secure network infrastructures are emphasized.

#### **FCM 745. Network Forensics**

Concerns the forensic and security issues related to access to data stored on computer systems and the transmission of data between systems. Topics include detecting and monitoring intrusions of networks and systems, authentication protocols, viruses and worms, and management of intrusion response teams. The course includes laboratory work, such as attack and defend exercises. (Prerequisites: FCM 710 Architecture of Secure Operating Systems; FCM 742 Network Security; ).

#### **FCM 760. Forensic Management of Digital Evidence**

Students are introduced to information systems used in forensic computing and the methods for analyzing the information exposed by these systems. Emphasis will be on technology permitting the retrieval, preservation, and analysis of computer data which might be used in potential legal cases. Among the topics studied are evidence collection and preservation, data copying, data warehousing and data mining, probability and statistics methods, classification, prediction and cluster analysis. (Prerequisites: FCM 710 Architecture of Secure Operating Systems)

**How to apply?** Application to the CAD4SCI program will be through the Office of Graduate Studies of John Jay College of Criminal Justice. For further information about the program contact the graduate program director, Professor Richard Lovely (rlvely@jjay.cuny.edu).