



FAMU Center for Secure Computing and Information Assurance

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IA Certificate Program

The Committee on National Security Systems (CNSS) and the National Security Agency (NSA) have certified that Florida A&M University (FAMU) offers a set of courseware that has been reviewed by National Level Information Assurance Subject Matter Experts and determined to meet National Training Standards for Information Systems Security Professionals, *NSTISSI 4011* (INFOSEC Professionals, National Training Standard), *CNSS 4012* (Senior Systems Manager (SSM)).

The courses offered in the Department of Computer and Information Sciences (CIS) under the information assurance track were the primary courses used to satisfy the standards. These courses provide the education and training for the information assurance skills that are critical to adequately defend the nation's vital information resources.

To fulfill the requirements of the standards 4011 and 4012 several courses were added to the CIS curriculum (see below) and first offered to students in the fall of 2005.

The University and the CIS department received official recognition and a certificate during the CNSS Annual Conference held in June 2005 in Atlanta, Georgia and again in June 2010 in Baltimore, Maryland.

Students who successfully complete the courses listed below are qualified to serve as an information assurance professional and/or the senior systems manager. The certificate program consists of the following courses.

- **CIS 4360** - Introduction to Computer Security (3 Hrs.)
- **CIS 4361** - Applied Security (3 Hrs.)
- **CNT 4406** - Network Security & Cryptography (3 Hrs.)

Other (non-certificate) IA courses offered:

- **CIS 4385C** - Digital Forensics (3 Hrs.)



FCSCIA Highlights

- Numerous CIS graduates who have completed the IA Certificate Program are employed in the intelligence community
- Preparing application for CAEIAE (*sponsored by NSA & DHS*)
- IA professional interaction with IA courses
- IA workshops for local community
- Graduate IA courses

FCSCIA Research Projects

Security for Web Browser & Extensions

Project Overview: Web browsers currently have security indicators which provide security features that notify users of malicious or un-trusted websites. Most of these security indicators are normally synced with a blacklist database that contains a list with websites that are known to be malicious. When users surf websites that have already been comprised in a blacklist database, the web browsers' security indicator then notifies the user with a warning message indicating that the desired website to be viewed has been identified as a malicious or un-trusted site, and then offers the user the option to continue or to exit the current site. Because these blacklist databases may not possibly contain every malicious website, users will come across a website they feel may be an un-trusted site, but have not received a warning message from the security indicator indicating otherwise. This project proposes an extension security indicator called Smart Trusted Indicators for Browsers (STIB) which will perform an extensive web activity history check on desired websites. This will determine how often a website has been viewed/transacted to provide the user with more information about the site and allow for an increased confidence in the legitimacy of the website.

Access Control Model for Enterprise Healthcare via SAML

Project Overview: In modern healthcare systems, information sharing among different individuals or organizations is a crucial aspect of everyday operations. The ability to send and receive data over a large inter-organizational network while protecting the privacy of vital electronic medical records is a challenge that has to be met and resolved. To address this problem, several Electronic Healthcare Record (EHR) standards are being developed to enable organizations to exchange clinical data. This project provides a framework of using Security Assertion Markup Language (SAML) in an inter-organizational E-Healthcare system. Previous studies have shown that a Role-Based Access Control Model is a suitable security model for a single E-healthcare system. This project focuses on communication and data sharing EHR component among the inter-organizations without comprising any privacy.

Cyber Threat Analysis

Project Overview: Universities are constantly under attack due to their large number of desktops and large data pipes to the Internet and other research institutions. There are numerous of malicious software created for the purpose of harming computer systems. With new attacks, it is difficult to defend computers against the attack until you determine how it was created. Therefore, within university networks it is urgent to identify malicious attacks immediately after one computer has been compromised. This project examines cyber threats towards a university's computer (focus on Botnet) and investigates the features of various honeypots hosted on a virtual machine. A comparison of the implementation of multiple Virtual Honeypots is done to identify the appropriate solution for a campus network.

IA Demand at FAMU

Table 1. Demand for IA Courses

	2004	2005	2006	2007	2008	2009	2010-11	Total
CIS 4360: Intro to Computer Security	30	24	44	30	18	27	32	205
CNT 4406: Network Security & Cryptography	17	22	31	11	16	11	20	128
CIS 4361: Applied Security	N/A	38	21	40	17	15	30	161
CIS 4385C: Digital Forensics	N/A	N/A	N/A	12	16	17	12	57
Certificates Awarded	N/A	5	10	29	7	10	12	73

All three courses in the certificate track are taught annually. To date, FAMU has presented these classes to over 250 students and awarded over 70 certificates (see Table 1).

FCSCIA Future Endeavors

- FAMU recognized as a CAEIAE (*sponsored by NSA & DHS*)
- Collaborate with the FAMU Center for Global Security and International Affairs
- Expand IA education at FAMU to Non-CIS majors
- Graduate IA Certificate Program (*recognized by CNSS & NSA*)
- Colloquium series with leading researchers



Contact Information

For more information follow the Academic Programs link at the following: <http://www.famu.edu/cis> or contact via email: fcscia@cis.famu.edu

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