IUPUI

DEPARTMENT OF COMPUTER INFORMATION AND GRAPHICS TECHNOLOGY

SCHOOL OF ENGINEERING AND TECHNOLOGY

A Purdue University School

Indianapolis

Computer & Information Technology's

Network Security Certificate

The Network Security Certificate (NSC) provides information assurance and security education and training to students and professionals. Information assurance and security professionals are responsible for the policies and technologies used to safeguard the information systems infrastructure of a company. The NSC covers the foundational aspects of security as well as the latest and most relevant developments in information assurance. It is designed for the professional as well as the student who has a background in network and systems administration. The Network Security Certificate (NSC) The NSC is a valuable security-focused companion to current vendor-based certifications and has direct correlation to the CISSP and Security+ certification standards. Completion of the NSC will provide students with a solid foundation in security techniques and prepare them to work in the information assurance and network security field.

Professionals and students must possess one of the following prerequisites:

- Professional certificate or certification in network and systems administration, or
- Three or more years of experience in network and system administration, or
- An Associate's degree in technology with knowledge of basic data communications concepts, discrete math, and probability or statistics.

Students are required to successfully complete a total of six courses (18 credit hours) to earn the certificate. No more than 9.0 units of transfer credit can be applied towards this certificate. A certificate will be presented to those who successfully complete all course work.

Required Courses

Must be completed with C or better

Course	Title
CIT 20300	Information Security Fundamentals
CIT 40600	Advanced Network Security
CIT 42000	Digital Forensics
CIT 43100	Applied Secure Protocols
CIT 45100	IT Risk Assessment
CIT 46000	Wireless Security

For course descriptions and prerequisites, please see reverse side.

Admission

Candidates for this certificate are required to be formally admitted by the IUPUI Office of Admissions, but not required to be a student in the Purdue School of Engineering and Technology. To earn the certificate, students must contact the department to complete paperwork to add the degree to their program plan of study before they enroll in the last semester or sooner. Credits earned while completing this certificate may be applied to a B.S. degree in Computer & Information Technology.

Course Descriptions

CIT 20300 Information Security Fundamentals (3 cr.): P: CIT 20700 or CIT 30700 or ECET 28400. This course will provide students with an overview of the field of Information Security and Assurance. Students will explore current encryption, hardware, software and managerial controls needed to operate networks and computer systems in a safe and secure manner. In addition, students will participate in a semester project to re-enforce key concepts such as policy development and business contingency planning.

CIT 40600 Advanced Network Security (3 cr.) P: CIT 20300 or CIT 30300. This course provides students with in-depth study and practice of advanced concepts in applied systems and networking security, including security policies, access controls, IP security, authentication mechanisms, and intrusion diction and protection.

CIT 42000 Digital Forensics (3 cr.) P: CIT 40600 and CIT 41500. This course covers the fundamentals of computer forensics and cyber-crime scene analysis. The various laws and regulations dealing with computer forensic analysis will be discussed. Students will be introduced to the emerging international standards for computer forensic analysis, as well as a formal methodology for conducting computer forensic investigations.

CIT 43100 Applied Secure Protocols (3 cr.) P: CIT 40600. This course will emphasize the applied facets of cryptography for the information assurance and security professional. By the end of the course students will be able to apply important cryptographic principles and tools to allow networks to communicate securely.

CIT 45100 IT Risk Assessment (3 cr.) P: CIT 40600. Class 2, Lab 2; or Class 3. Students will learn the basic tools of security risk assessment and risk management. Students will be able to identify and assess security risk, conduct information asset valuation, and apply risk control strategies. Other topics discussed will be: security policies, NIST Security Models, and training education and awareness. At the end of the course students will be able to assess vulnerabilities and document them according to a published assessment standard.

CIT 46000 Wireless Security (3 cr.) P: CIT 40600. Focuses on the risks and benefits associated with wireless local area network communications as well as how the networking industry defines a secure wireless network. In addition, students gain the skills needed to properly create, configure and maintain a secure wireless network.

Administration of Program

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