Programs of Study

Partner Institutions

Community Colleges:

- Anne Arundel Community College
- College of Southern Maryland
- Community College of Baltimore County
- Howard Community College
- Montgomery College
- Northern Virginia Community College
- Prince George's Community College

Colleges/Universities:

- Bowie State University
- George Mason University
- George Washington University
- Johns Hopkins University
- Towson University
- University of Maryland College Park
- University of Maryland University College

Program Guide

Institution	Certificate	A.A.S.	B.S.	M.S.	PhD	Graduate Certificate
AACC	✓	✓				
BSU			✓			
Capitol College			✓			
CSM		✓				
CCBC	✓					
GMU				✓	✓	✓
GWU			✓	✓	✓	
HCC		✓				
JHU				✓		✓
Montgomery College						
NVCC	✓					
PGCC		✓				
Towson						✓
UMCP						✓
UMUC	✓					

Anne Arundel Community College

Contact Information: Dr. Fred Klappenberger
Chair, Computer Information Systems
410-777-2207
faklappenberger@aacc.edu

INFORMATION SYSTEMS SECURITY
Award: Associate of Applied Sciences Degree, A.A.S.
Total Credit Hours: A minimum of 64 credit hours

Prepares student for entry-level career in information systems security. The program emphasizes computer security and information assurance concepts augmented with current industry standard techniques. Topics cover threats and vulnerabilities, prevention at the technical (hardware and software) and human levels, detection, response, and management aspects of security. This program of study fully maps to National Security Telecommunications and Systems Security Instruction (NSTIS-SI) 4011 and provides the foundation for students to sit for the following industry-recognized certifications: Network+, Security+, CCNA (Cisco Certified Network Associate), and SCNP (Security Certified Network Professional). If the student selects EET 160 as an elective, the student will also be prepared to sit for the A+ certification exam. Students selecting this program of study are strongly encouraged to meet with the Computer Information Systems Department chair to select electives.

Range of Occupations
· Security specialist
· Information assurance specialist
· Information systems security specialist
· Network security specialist
· Applications security specialist
· Operating system security specialist

THE COMMITTEE ON NATIONAL SECURITY SYSTEMS AND THE NATIONAL SECURITY AGENCY HAVE CERTIFIED THAT ANNE ARUNDEL COMMUNITY COLLEGE MEETS THE NATIONAL STANDARD FOR NSTISSI NO. 4011 FOR THE ACADEMIC YEARS 2006-2009
Courses that meet this standard:
CSI 113 - Introduction to Computers
CSI 130 - Microcomputer Operating Systems
CSI 135 - Introduction to Unix/Linux
CSI 165 - Network Security Fundamentals
CSI 214 - Information Systems Security
CSI 258 - Cisco Networking 4
CSI 260 - Data Communications 2
CSI 265 - Windows 2003 Server

INFORMATION SYSTEMS SECURITY CERTIFICATE
*Award***:** Certificate (code CRT.CIS.ISS)
*Total Credit Hours***:** A minimum of 40 credit hours.

Prepares student for entry-level careers in information systems security. Intended for those already employed in computing or who have a computing background. The certificate emphasizes computer security and information assurance concepts augmented with current industry standard techniques. Topics cover threats and vulnerabilities, prevention at the technical (hardware and software) and human levels, detection, response, and management aspects of security. This program of study is built upon the National Security Telecommunications and Systems Security Instruction (NSTISSI) 4011 and provides the foundation for students to sit for the following industry-recognized certifications: Network+, Security+, CCNA (Cisco Certified Network Associate), and SCNP (Security Certified Network Professional). If the student selects EET 160 as an elective, the student will also be prepared to sit for the A+ certification exam.

Bowie State University

Contact Information: Mr. Marc Matties
mmatties@cs.bowiestate.edu

COMPUTER TECHNOLOGY – COMPUTER & NETWORK SECURITY
Award: B.S.
Total Credit Hours: A minimum of 120 credit hours

Capitol College

Contact Information: Mr. Allan Berg
Director, Information Assurance & Infrastructure Protection
301-369-2800
aberg@capitol-college.edu

INFORMATION ASSURANCE
Award: B.S.
Total Credit Hours: A minimum of 127 credit hours

The bachelor of science in information assurance is designed to meet current and anticipated needs for highly trained information assurance professionals. A BSIA student will have the chance to build on the foundations of computer science and information technology, and develop a mastery of information assurance and security concepts, tactics and strategies.
The first two courses of the BSIA concentration prepare students for the CompTIA Security+ examination, giving them the chance for desired credentials even before they graduate. The combination of all five courses map to the seven domains of the Systems Security Certified Professional (SSCP) certification.

College of Southern Maryland

Contact Information: Mr. DJ Singh
Instructor
301-934-7566
dsingh@csmd.edu

INFORMATION SYSTEMS SECURITY
*Award***:** Associate of Applied Science
*Total Credit Hours***:** A minimum of 64 credit hours

This program provides sufficient knowledge to prepare students for entry-level security positions and also serves those already working in the field who wish to update their skills. On completion of the program students will be prepared for entry-level positions in security or transfer to a four-year institution to complete a bachelor's degree in Information Assurance or related field. The influx of security into every aspect of information technology has created the need for a workforce skilled in implementing and managing the security infrastructure of organizations. This degree is designed around industry-accepted certifications and current industry standard techniques that prepare the students to meet these workforce needs. Graduates will have the basic knowledge of networks and operating systems concepts, a solid foundation in Cisco networking, and will be prepared to take the CCNA certification exam. The program is designed to meet the 4011 National training standard for Information Security (INFOSEC) Professionals. Security is amongst the fastest growing professional career areas worldwide and career opportunities exist in government, business and industry. Security positions are available in network, internet, database, application and wireless security with job titles including security technician, security analyst, security associate, security administrator, security specialist, security consultant and security engineer. The maximum number of credits accepted in transfer from other institutions into this program is 48.

Community College of Baltimore County

Contact Information: Mr. Casey O'Brien
Network Technology Program Coordinator
410-780-6139
cobrien@ccbcmd.edu

NETWORK SECURITY CERTIFICATE
Award: Certificate
Total Credit Hours: A minimum of 15 credit hours

This Certificate Program provides the basic knowledge and skills needed analyze security vulnerabilities, create a network security plan, and implement the policies and procedures needed to assure network protection from intrusion and information damage or theft. Contemporary intrusion detection, counter measures, and system-wide multi-layered approaches are emphasized.

George Mason University

Contact Information: Mr. Don Gantz
Chair, Applied Information Technology
703-993-3565
dgantz@gmu.edu

INFORMATION SECURITY & ASSURANCE

Award: MS and Doctoral Concentration
Total Credit Hours: A minimum of 30 (MS) and 24 (PhD concentration) graduate credit hours

The Master of Science degree program in Information Security and Assurance is designed to prepare graduates to fill the current and future need for information security and assurance professionals, to work in a wide variety of capacities, to protect the information systems of different types of organizations and to support the nation's information infrastructure.

The objective of the Master of Science degree in Information Security and Assurance is to provide students with the general and technical knowledge and skills to understand the relationship between information security and advancing information systems technology, and with a theoretical understanding of the science and methodologies for ensuring the secrecy and integrity of data, as well as the availability and legitimate use of data and information systems. Students will develop core competencies in the areas of database and information system, operating systems and networks, and software development. Students will focus on the technical and management aspects of information security, examining ways to provide secure information processing systems by investigating operating systems security, distributed secure system architectures, database security, software applications security, security policies, secure e-commerce, network and distributed systems security, cryptography and security protocols.

Graduates of the program will be actively recruited by federal, state and local governments and by the private sector. Typical employers include Internet-based companies, software companies, banks and insurance companies, and in general any organization that depends heavily on the use of information technology.

Doctoral Concentration:
Students may designate a concentration in information security in their doctoral degree title. In that case the transcript of a graduating student would be "Ph.D. in Information Technology with Concentration in Information Security". Students seeking this concentration must satisfy all the requirements for the Ph.D. degree in Information Technology. To satisfy the breadth requirement of the PhD degree, each student must pass a set of qualifying examinations designed to test a student's fundamental knowledge. The general PhD IT requirement is that each student must take four exams from three different master's programs.

INFORMATION SYSTEMS SECURITY
Award: Graduate Certificate
Total Credit Hours: A minimum of 15 graduate credit hours

The Graduate Certificate Program in Information Systems Security has been designed for persons who are interested in science and methods for ensuring secrecy, integrity, and availability of information systems. The Certificate in Information Systems Security may be pursued concurrently with any of the graduate programs in the School of Information Technology and Engineering.

George Washington University

Contact Information: Ms. Shelly Heller

Associate Dean for Academic Affairs
202-242-6698
sheller@gwu.edu

COMPUTER SECURITY & INFORMATION ASSURANCE
Award: BS, MS, PhD
Total Credit Hours: A minimum of 123 credit hours (BS) and 36 graduate credit hours (MS, PhD)

Computer security and information assurance encompasses network security, information warfare, cryptography, information policy, and computer forensics. It involves use of sophisticated software and hardware tools able to detect and prevent malicious intrusion or destruction of vital government and business computer systems and networks.

GW's undergraduate program in CSIA is one of only a very few in the U.S., and is considered to be one of the best. We have a dedicated teaching lab where students work together to learn the latest techniques in protecting computer systems and networks from unauthorized access or destruction. We also have the Portable Education Network (PEN), a mobile computer security lab being replicated at other universities around the country, including at West Point

Howard Community College

Contact Information: Ms. Eileen Kaplan
410-772-7765
ekaplan@howardcc.edu

NETWORK SECURITY
Award: A.A.
Total Credit Hours: A minimum of 65 credit hours

This transfer pattern is designed in response to the increased growth of network security concerns, from regional to international environments. The resulting need for graduates with theory and application skills in this area has been intensified. This curriculum prepares students for working with network security in private, public, and governmental arenas at the mid-administrative level. Content related to the CISSP domains and NSA's standards has been incorporated into the "major" courses. The curriculum is designed to transfer to similar programs at Johns Hopkins University and at Capitol College.

HCC has designed a series of five specialized network security courses to enhance the students' opportunities in the rapidly growing computer and Internet security fields. Hackers have infiltrated the very core of the computer world, have compromised Internet security, and have affected the lives of millions by disrupting company networks.

CMSY-162	Introduction to Network Security Systems (This course prepares students for the CompTIA Security+ certification)
CMSY-163	Introduction to Firewalls and Internet Security
CMSY-164	Introduction to Intrusion Detection Systems

CMSY-262	Introduction to Encryption and VPN Technology
CMSY-263	Securing and Auditing Network Systems

INFORMATION SECURITY TRAINING

Information Security training is available at Howard Community College in a variety of credit or noncredit courses. This wide-ranging and relevant curriculum includes: Fraud & Abuse; A track of 5 network security courses mapping to the 10 CISSP domains; Setting up a Home Network Security + certification.

Johns Hopkins University

Contact Information: Mr. John Baker
Director, Information Systems
410-312-2888
jb@jhu.edu

The Johns Hopkins University Information Security Institute (ISI) is the University's focal point for research and education in information security, assurance and privacy. Securing cyberspace and our national information infrastructure is more critical now than ever before, and it can be achieved only when the core technology, legal and policy issues are adequately addressed. ISI is committed to a comprehensive approach that includes input from academia, industry and government. The University, through ISI's leadership, has thus been designated as a Center of Academic Excellence in Information Assurance by the National Security Agency and leading experts in the field. Through our broad range of educational opportunities including a ground-breaking graduate program and leading edge research in foundational science and applied technologies, ISI is having a significant impact in the region and nationwide. Our research in networking, wireless, systems evaluation, medical privacy and electronic voting, among other areas is widely circulated among academics and policy-makers. Moreover, ISI is instrumental in homeland security efforts across Hopkins, including emergency health preparedness, bio-terrorism and national defense.

SECURITY INFORMATICS
Award: MS
Total Credit Hours: A minimum of 24 graduate credit hours

The flagship educational experience offered by Johns Hopkins University in the area of information security and assurance is represented by the **Master of Science in Security Informatics** degree. Over thirty courses are available in support of this unique and innovative graduate program. Over 25 full-time, part-time, or adjunct faculty are available to deliver these courses at multiple sites spanning the Homewood campus in northern Baltimore, the medical and health facilities in eastern Baltimore, the part-time graduate program operations at APL and the Montgomery County campus, and the SAIS and KSAS facilities in Washington, D.C.

INFORMATION SECURITY MANAGEMENT
Award: Graduate Certificate
Total Credit Hours: A minimum of 15 graduate credit hours

The Information Security Management program is designed for professionals who currently hold leadership positions or who are on that trajectory. They may be active information security professionals, or may be active in related roles that demand this knowledge. This certificate is career-enhancing for IT and functional managers -- as well as CEOs -- because of the pervasive impact of security incidents disrupting business operations, competitive intelligence issues, and the prevailing need to remain abreast of developments in privacy, ethics, legal, and regulatory arenas. Students will learn from faculty who possess both academic degrees and professional certifications.

Northern Virginia Community College

Contact Information:

NETWORK SECURITY
Award: Career Studies Certificate AN, MA, WO
Total Credit Hours: A minimum of 27 credit hours

This career studies certificate in Network Security is designed as an enhanced competency module to provide expertise in security to networking specialists. This curriculum will prepare networking specialists for employment as network security specialists or Internet security specialists.

Prince George's Community College

Contact Information: Ms. Cynthia Mason-Posey
301-322-0759
cmason-posey@pgcc.edu

INFORMATION SECURITY DEGREE
Award: Associate of Applied Science Degree (A.A.S.)
Total Credit Hours: A minimum of 63 credit hours

The Information Security Program provides the skills for students to become highly skilled computer systems security professionals and to train individuals for entry-level positions as Data Security Analysts, Systems Security Administrators, and Network Security Administrators. In this program, students will master the latest security technologies and will examine the issues of information security awareness, network security hardware, systems and network security planning and defense, network security organization, and the legal and ethical issues associated with information systems security. Students will also complete a capstone project and will design information security systems and implement a security strategy for a network
Upon completion of the program of study, graduates will be able to:

- Plan and implement network router and switch configurations
- Monitor the security infrastructure to include analyzing network problems and traffic flow
- Identify and remove network security vulnerabilities and threats
- Create and enforce an organizational security policy including contingency plans
- Install, configure and manage Windows and UNIX/LINUX network operating systems

- Install, configure and monitor a firewall
- Use the curriculum fundamentals to prepare for the A+, CCNA, Network+, Security + and SCNP industry standard certifications

Towson University

Contact Information: Dr. Ali Behforooz
abehforooz@towson.edu

INFORMATION SECURITY AND ASSURUANCE
Award: Graduate Certificate
Total Credit Hours: A minimum of 15 graduate credit hours

The Graduate Certificate in Information Security and Assurance covers the study, design, development, implementation and support of computer-based information systems with regard to securing information. This program provides graduate-level education in IT for students preparing to enter the high-tech work force and those already in the work force who wish to update and enhance their skills. This course of study can be completed as a stand-alone graduate certificate or applied to the M.S. degree program in Applied Information Technology. The program is intended for students who have a bachelor's degree in information technology, computer science, computer information systems, or a related field, who will enter the program for advanced studies. The program may also be of interest to persons who do not have a bachelor's degree in the field, but who are currently employed in the IT field and are seeking additional academic studies for professional growth or to advance their career, and persons who have a bachelor's degree in a discipline other than IT who are seeking preparation for careers in this field.

University of Maryland College Park

Contact Information: Office of Professional Studies

INFORMATION ASSURANCE MANAGEMENT
Award: Graduate Certificate
Total Credit Hours: A minimum of 12 graduate credit hours

Multi-disciplinary in nature, this 12-credit graduate certificate in professional studies helps mid-career individuals deepen and update their understanding of today's information security issues and prepares them for positions of greater management responsibility.

Students explore security concerns and concepts from both a technical and management point of view with an emphasis on implementation techniques and financial management. Along with aspects of policy decision-making, students are introduced to the managerial, political, and ethical problems faced by public sector leaders. This program is highly recommended for security professionals who want to understand the business aspects of security and advance their careers.

University of Maryland University College

Contact Information: Don Goff
Executive Director, Security Studies Laboratory
240-582-2765
dgoff@umuc.edu

INFORMATION ASSURANCE
Award: Certificate
Total Credit Hours: A minimum of 18 credit hours

The information assurance certificate supports those who wish to acquire or improve information security knowledge in response to the national imperative for maintaining the security of the technology and information infrastructure of government and industry. Students gain specific skills and are instructed in areas of policy formation, needs assessment, security applications, and disaster prevention and recovery. Laboratories employing both state-of-the art and industry-standard tools are used. With appropriate choice of major and elective courses, this certificate may be completed while pursuing the Bachelor of Science in information systems management.