Cybersecurity

HAGERSTOWN COMMUNITY COLLEGE

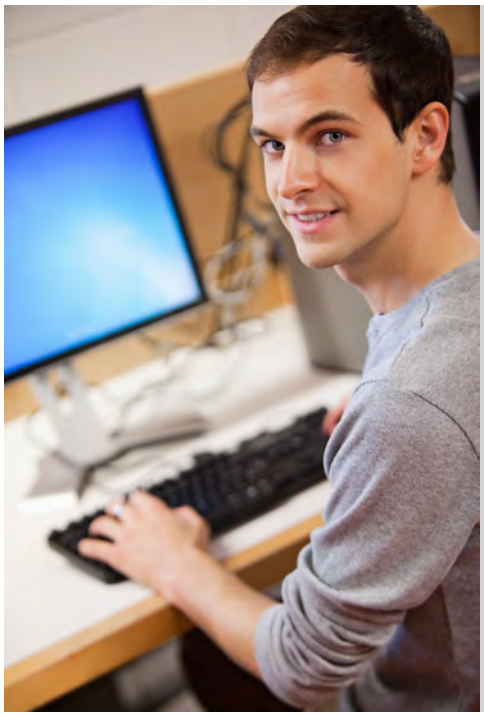
What is cybersecurity?
Cybersecurity is the body of technologies, processes, and practices designed to protect networks, computers, programs, and data from attack, damage, or unauthorized access. In a computing context, the term "security" implies cybersecurity.

On a global scale, cyber crimes such as stolen data, identity theft, and fraud cost the worldwide economy as much as $2 trillion per year.

What does a computer security specialist do?
Computer security specialists plan, coordinate, and maintain an organization's information security. These workers also educate users about computer security, install security software, monitor networks for security breaches, respond to cyber attacks, and, in some cases, gather data and evidence to be used in prosecuting cyber crime. Computer security specialists are expected to protect computers and servers from damage caused by viruses, unauthorized access, deletion, or theft of important and private information. Information security analysts plan and implement security measures to protect an organization's computer networks and systems. Their responsibilities are continually expanding as the number of cyber attacks increase. (source: *www.bls.gov/ooh*).

Individuals who excel in this field typically exhibit good critical thinking skills (including complex problem solving) as well as the ability to communicate effectively, exercise good judgment and decision making, and appropriately manage their time.

Why should students choose HCC?
- HCC is the regional leader in cybersecurity programming. The college currently offers two associate degrees in cybersecurity and a number of specialized certificates and a certificate in Cyber and Network Security.
- In 2010, HCC was one of the first community colleges in the nation to be named as a Center of Academic Excellence for Two-Year Education in Cybersecurity (CAE2Y). HCC has maintained status as a CAE. Most recently as a CAE in Cyber Defense (CAE-CD).



PROGRAM OPTIONS
- A.A.S. Degree, Cybersecurity
- A.S. Degree, Cybersecurity
- Certificate, Cyber and Network Security

CAREER OUTLOOK

MEDIAN SALARY
$86K
for computer & information technology occupations

EMPLOYMENT
546,200 new jobs in U.S.
12% growth in next ten years

Job prospects will be best for college graduates who possess the latest technological skills, particularly graduates who have supplemented their formal education with relevant work experience.

(source: www.bls.gov/ooh)

- HCC cybersecurity classes are taught in a five-story STEM (Science, Technology, Engineering, and Math) Building that features a state-of-the-art cybersecurity penetration testing lab.
- HCC has aligned many of its cybersecurity courses with Cyberwatch, a consortium of over 40 colleges, businesses, and government agencies. This alignment allows students to transfer seamlessly from HCC to a four-year college to complete their bachelor's degrees.
- Upon program completion, students will be prepared for several industry standard certification exams including:

  – CompTIA Network+ and Security+
- Maryland is ranked fourth in the nation for the highest cybersecurity job openings. Students who train at HCC will be well-placed to transition to the cybersecurity field.

What are the program options?
There are two degree options in cybersecurity at HCC. The A.S. degree has been developed for students wishing to transfer to a four-year institution. With an emphasis on general education, programming, cybersecurity, and forensics classes, this program of study will prepare the student to succeed in upper level courses required at the transfer school.

The A.A.S. degree is for students who wish to enter the workforce after a two-year program of study. The emphasis of this program is to introduce students to the technologies used in the field today, provide hands-on instruction, and prepare students for industry standard certification examinations.

Cyber and Network Security
Students who complete this program will gain knowledge to prepare for industry certification examinations. Students may continue on to other degrees in Cybersecurity.

Hagerstown Community College • 11400 Robinwood Drive • Hagerstown, MD 21742 • 240-500-2000 • www.hagerstowncc.edu

A.A.S. Degree

Cybersecurity

The career program in cybersecurity is designed for students who plan to enter the field of information security. Major areas of study include network fundamentals, ethics, penetration testing, computer forensics, and operating systems.

General Education Requirements **18 credits**

Arts/Humanities

Select a course from approved General Education course list 3

Behavioral/Social Sciences

Select a course from approved General Education course list 3

Biological/Physical Science

Select a course from approved General Education course list 3

Diversity

Select a course from approved General Education course list 3

English

ENG 112 Technical Writing I 3

**minimum grade of "C" or better is required*

Mathematics

MAT 115 Quantitative Reasoning 3

Program Requirements **41 credits**

CSC	109	UNIX/LINUX Operation System	3
CYB	101	Introduction to Cybersecurity	3
CYB	210	Ethics in the Information Age	3
CYB	224	Ethical Hacking Fundamentals	3
CYB	225	Tactical Perimeter Defense	3
CYB	246	Introduction to Cloud Computing	3
IST	108	Microsoft Operating System	3
IST	154	Networking Basics	3
IST	155	Networking I	4
IST	156	Networking II	4
IST	160	Introduction to Security Fundamentals	3
IST	166	Computer Forensics I - Principles & Practices	3
IST	261	Server Management I	3

Free Electives **1 credit**

Electives should be selected in consultation with an advisor to satisfy career goals or a transfer college curriculum

Degree Requirement 60

A.S. Degree

Cybersecurity

The transfer program in cybersecurity is designed for students who plan to transfer to a four-year institution and major in cybersecurity, information assurance, or a related field. Students should identify an intended transfer institution as early as possible and complete appropriate courses. Students should always confer with advisors and transferring institutions for specific requirements as these are subject to change.

General Education Requirements **31-32 credits**

Arts/Humanities

Select two courses from approved General Education course list 6

Behavioral/Social Sciences

Select two courses from approved General Education course list 6

Biological/Physical Science

Select two courses from approved General Education course list- One must include a laboratory course 7-8

Diversity

Select a course from approved General Education course list 3

English

ENG 101 English Composition 3

**minimum grade of "C" or better is required*

Select another ENG course from approved General Education course list 3

Mathematics

Select a course from approved General Education course list 3

Program Requirements **24 credits**

CSC	130	Introduction to Scripting Fundamentals Using Python	3
CSC	132	Introduction to C and C++ Programming	3
CYB	101	Introduction to Cybersecurity	3
CYB	210	Ethics in the Information Age	3
CYB	225	Tactical Perimeter Defense	3
IST	154	Networking Basics	3
IST	160	Introduction to Security Fundamentals	3
IST	166	Computer Forensics I– Principles and Practices	3

Restricted Electives **3 credits**

Electives should be selected in consultation with an advisor to satisfy career goals or a transfer college curriculum. Select six credits from the following list:

ADJ	101	Introduction to Criminal Justice.	3
CSC	109	UNIX/Linux Operation System	3
CSC	232	Advanced C++ Programming	3
CYB	224	Ethical Hacking Fundamentals	3
CYB	246	Introduction to Cloud Computing	3
IST	108	Microsoft Operating System	3
IST	150	PC Tech: Repair and Troubleshooting	3
IST	173	Database Fundamentals	3
IST	266	Computer Forensics II – Investigations Practices	3
IST	276	Network Forensics	3

Free Electives **1-2 credits**

Electives should be selected in consultation with an advisor to satisfy career goals or a transfer college curriculum

Degree Requirement 60

Certificate

Cyber and Network Security

Students who complete this program will gain knowledge to prepare for industry certification examinations. Students may continue on to other certificates or degrees in Cybersecurity.

Program Requirements **21 credits**

CSC	102	Introduction to Information Technology	3
OR			
CYB	101	Introduction to Cybersecurity	3
CYB	210	Ethics in the Information Age	3
CYB	224	Ethical Hacking Fundamentals	3
CYB	225	Tactical Perimeter Defense	3
CYB	246	Introduction to Cloud Computing	3
IST	154	Networking Basics	3
IST	160	Introduction to Security Fundamentals	3

Certificate Requirement 21

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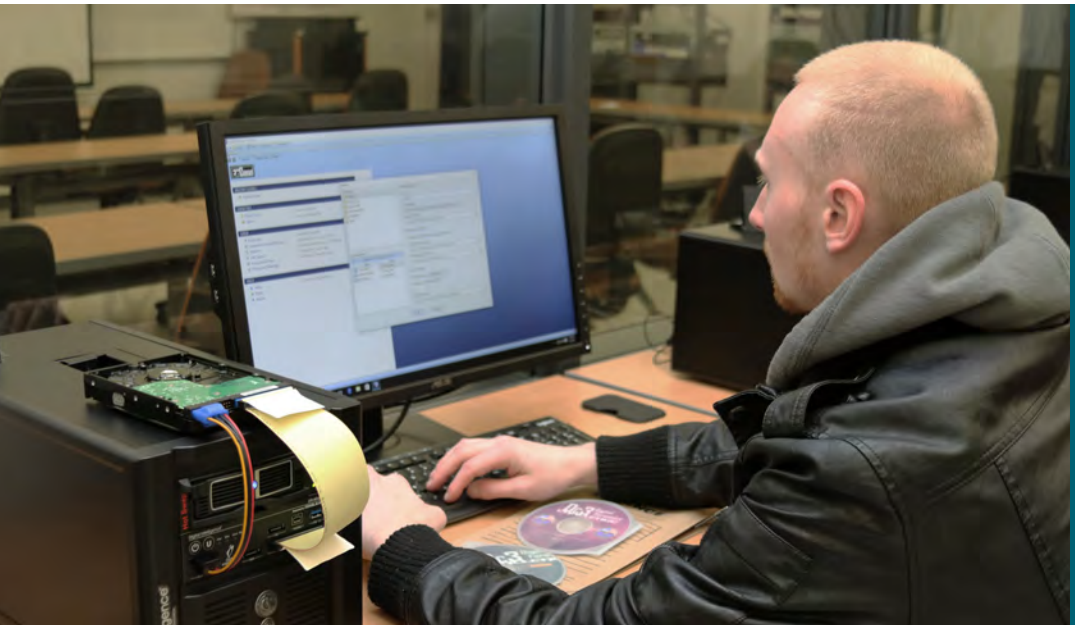

Contact Information:

Diana Neeriemer
Assistant Professor, Cybersecurity
240-500-2536
dmneeriemer@hagerstowncc.edu

www.hagerstowncc.edu/cybersecurity