

**HOLYOKE COMMUNITY COLLEGE**  
**COMPUTER INFORMATION SECURITY AND ASSURANCE**  
**OPTION – N063**

**A.S. in Computer Information Systems**

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Information and network security is a problem that almost every company faces; one of the biggest assets a company has is its data. The field of information security and assurance is a fast-growing field; currently there are too few professionals to fill the positions available. Graduates with associate degrees can be hired as entry-level internet, security, network, systems or support administrators and will be prepared to integrate new security skills into their responsibilities and serve on corporate security teams.

**GENERAL EDUCATION REQUIREMENTS 20**

_____	ENG 101	Language and Literature I	3
_____	ENG 102	Language and Literature II	3
_____	SOC 110	Introduction to Sociology (B)	3
_____	PSY 110	Introduction to Psychology (B)	3
_____	EGR 110	Robotics: Exploration in Construction and Design (D)	4
_____	_____	Laboratory Science (D)	4

**PROGRAM REQUIREMENTS 34-36**

_____	BUS 112	Developing a Professional Style	1
_____	CSI 101	Computer Concepts1	3
<b>or</b>			
_____	CSI 111	Computer Concepts with Applications	4
_____	CSI 120	Business Data Communications	3
_____	CSI 214	System Analysis & Design	3
_____	CSI 215	Ethical and Legal Aspects of Information Systems	3
_____	SEC 105	Principles of Information Security and Assurance	3
_____	SEC 261	Information Security Assurance and Administration	3
_____	SEC 264	Disaster Recovery	3
_____	SEC 266	Web Security & Assurance Management	3
_____	SEC 268	Management of Network Defense & Countermeasures	3
_____	MGT 230	Principles of Management	3
_____	MTH__	Math Elective4 (D)	3-4

**PROGRAM ELECTIVES 9**

_____	CRJ 100	Introduction to Criminal Justice	3
_____	CRJ 105	Introduction to Security	3
_____	SEC 262	Introduction to Firewalls6	3
_____	SEC 263	Operating System Security and Assurance	3
_____	SEC 267	Network Security and Assurance	3
_____	MGT240	Organizational Behavior	3
_____	CSI 150	Special Topics in CSI	1-3
_____	CSI 250	Current Topics in CSI	3
_____	CSI 251	Network Development	3
_____	CSI 252	Introduction to Website Development	3
_____	CSI 253	Introduction to eCommerce	3
_____	CSI 242	Applied Database Management8	3

**Total Credits 63-65**

## **Information Security and Assurance Course Description**

### **SEC 105 Principles of Information Security - 3 credits**

An introduction to the various technical and administrative aspects of Information Security and Assurance. This course provides the foundation for understanding the key issues associated with protecting information assets, determining the levels of protection and response to security incidents, and designing a consistent, reasonable information security system, with appropriate intrusion detection and report features.

Prerequisite: CSI 101 or CSI 111

### **SEC 261 Information Security Administration - 3 credits**

This course will teach students how to secure any network, large or small. The student will learn the realities that network administrators actually face on the front lines, where they are constantly under attack, and don't always get the support they need from their organizations. The course will address many facets of network security, including defining security models, access control, Web/DNS (domain network service)/email security, remote access and VPNs (virtual private networks), wireless LAN/WAN (local area networks and wide area networks), security, day-to-day monitoring and logging, attack response, and more. The student will learn how to systematically identify today's most widespread security mistakes and vulnerabilities, offering realistic and up-to-date solutions. The student will then integrate these techniques in an end-to-end case study, showing how to redesign an insecure enterprise network for maximum

Prerequisite: CRJ 105 or SEC 105

### **SEC 262 Introduction to Firewalls - 3 credits**

This course provides a comprehensive overview of building and maintaining firewalls in a business environment. It is designed for the student and network administrator who need to learn the basics of network firewall security. It covers basic installation techniques, discusses how to make an intelligent choice of firewall technology, and presents basic firewall troubleshooting. Specific topics covered include: planning/design, security, configuration, packet filtering, proxy servers, authentication, encryption, and VPNs.

Prerequisite: CRJ 105 or SEC 105

### **SEC 263 – Operating System Security - 3 credits**

This course takes an in-depth look at operating system security concepts by examining the theoretical concepts that make the world of security unique. A practical hands-on approach will be used when examining operating system security techniques and strategies. The course will also explore the advances in security implementation and the strategies for solving problems that may be encountered in operating system security.

Prerequisite: CRJ 105 or SEC 105

### **SEC 264 – Disaster Recovery - 3 credits**

This course presents methods to identify vulnerabilities and take appropriate countermeasures to prevent and mitigate information failure risks for an organization. This course provides the networking professional with a foundation in disaster recovery principles, including preparation of a disaster recovery plan, assessment of risks in the enterprise, development of policies and procedures, an understanding of the roles and relationships of various members of an organization, implementation of the plan, testing and rehearsal of the plan, and actually recovering from a disaster.

Prerequisite: SEC 105 or CRJ 105

**SEC 266 – Web Security - 3 credits**

This course, useful for network and system administrators, will familiarize students with the technology, vocabulary, and processes related to Internet security including general security, network security, operating system security, and methods for testing security. Both UNIX and Microsoft Windows operating systems are covered, providing a broad range of information essential for every Web professional. In this course, the student will see real-world situations that will illustrate security-related issues that security professionals experience in the workplace.

Prerequisite: CRJ 105 or SEC 105

**SEC 267 – Network Security and Assurance - 3 credits**

In this course, we will take an in-depth look at network security concepts and techniques. We will examine theoretical concepts that make the world of security unique. Also, this course will adopt a practical, hands-on approach when examining networking security techniques. Along with examining different network strategies, this course will explore the advancement of network

Prerequisites or Co-requisites: SEC 105

**SEC 268 Management of Network Defense & Countermeasures - 3 credits**

The primary emphasis of this course is on intrusion detection. The emphasis is on essential practices such as developing a security policy and then implementing that policy by performing Network Address Translation, setting up packet filtering, and installing proxy servers, firewalls, and virtual private networks. The course will provide the student with a solid foundation in network security defense and assumes familiarity with the Internet and basic networking concepts.

Prerequisites: SEC 267