CIS 1610

Division: Career and Technical Education
Department: Computer Information Systems
Course: CIS 1610
Title: Network Security Fundamentals
Catalog Description:

This course will introduce students to the fundamentals of network security concepts. Students will become familiar with network attackers and their attacks, security basics, network and web security, cryptography, operational security, and policies and procedures related to network security.

General Education Requirements: N/A
Semesters Offered: TBA
Credit/Time Requirement: Credit: 3; Lecture: 3; Lab: 1
Clock/Hour Requirements: 60
Offered for Non-Credit: Yes
Prerequisites: CIS 1121, CIS 1122, and CIS 1140

Corequisites: N/A

Justification:

Network security is a high priority for any network technician. Network technicians, regardless of the size of the network they manage, need to understand how to protect their systems. Students who choose to work in the IT field will benefit from a solid understanding of network security and will be able to more accurately secure their networks from intrusion. This course prepares students for job readiness at graduation and/or transfer to some advanced training institutions. This course has been recommended by the program advisory committee.

Student Learning Outcomes:

Through successful completion of this course, students will be able to:

- identify key security fundamentals regarding preventing and thwarting security attacks
- identify attackers and their attacks
- identify and explain security basics
- perform security baselines and secure network infrastructures
- identify and explain general cryptography techniques
- explain the importance of operational security policies and procedures.

Content:

Course objectives will be accomplished by providing students with learning experiences in the following areas:

- Information Security Fundamentals
- Attackers and their Attacks
- Security Basics
- Security Baselines
- Securing the Network Infrastructure
- Web Security
- Protecting Advanced Communications
- Cryptography
- Using and Managing Keys
- Operational Security
- Security Management.

General Education Outcomes:

Applied Education Outcomes:

1) Students will acquire entry-level skills specific to and appropriate for employment in their chosen field of study.

Students will be exposed to the basic theoretical and practical application concepts of security management. The entry-level skills will be practiced through hands-on exercises such as securing network traffic on switches, routers, wireless access points, etc.

2) Students will become aware of industry specific certification and develop skills sufficient to acquire the same.

The course and text are designed around the knowledge domains encompassed by the Security+ industry certification. Each chapter and hands-on activity will be referenced to this certification. Additionally, students will be made aware of higher level security certifications available to them following the successful completion of this course.

Key Performance Indicators:

In class:

- Student grades will be based on a combination of lab exercises (5-25%), quizzes (5-25%), tests (10-50%), and a final exam or project (20-50%). Percentages are approximate.

Following class:

- Post evaluation will be measured by subsequent student performance in courses where students are expected to be familiar with Network Security Fundamentals. If students choose to pursue industry certification, the CompTIA Security+ exam will provide indicators of student success in this course.

Representative Text and/or Supplies:

- Mark Ciampa, *Security+ Guide to Network Security Fundamentals,* current edition, Thompson.

Optimum Class Size: 16
Maximum Class Size: 16

Signatures:

I hereby submit this course syllabus:

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Michael Medley, MBA, Instructor

I hereby find this course consistent with the goals and resources of the Computer Information Systems Department:

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Michael P. Medley, MBA, Assistant Professor, Chair

I hereby find this course consistent with the goals and resources of the Career and Technical Education Division:

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Michael P. Medley, MBA, Assistant Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

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Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

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Michelle Olsen, MLS, Campus Librarian (Richfield Campus)