CSIT 210: CYBER OPERATIONS

1. Course Information

Subject
CSIT - Computer Science/ Information Technology

Course Number
210

School
Science, Technology, Engineering, Mathematics

Course Title
Cyber Operations

2. Hours

Semester Hours
3

Lecture
3

Lab
0

Practicum
0

3. Catalog Description

For display in the online catalog
This course provides a deep understanding of the knowledge and skills required for handling the tasks, duties, and responsibilities of an associate-level Cybersecurity Analyst in a Security Operations Center. Students will gain an understanding of a variety of topics, including: The Windows and Linux Operating Systems, Network Protocols, Network Security, Network Services, Attackers and their Tools, Common Threats and Attacks, Defensive Measures, Threat Intelligence, Cryptography, Endpoint Protection and Vulnerability Assessment, and Digital Forensics and Incident Analysis and Response.

4. Requisites

Prerequisites
CSIT 145 and CSIT 185

5. Course Type

Course Type for Perkins Reporting
vocational (approved for Perkins funding)

6. Justification

Describe the need for this course
Students in the cybersecurity field will benefit from understanding and knowing how to be successful in a network security operations center as they work to enter their professional careers.

7. General Education

Will the college submit this course to the statewide General Education Coordinating Committee for approval as a course, which satisfies a general education requirement?
No

If the course does not satisfy a general education requirement, which of the following does it satisfy:
Elective

8. Consistency with the Vision and Mission Statements, the Academic Master Plan, and the strategic initiatives of the College

Please describe how this course is consistent with Ocean County College's current Vision Statement, Mission Statement, Academic Master Plan, and the strategic initiatives of the College:

	Add item
1	Demonstrating the college's commitment to offer comprehensive educational programs that develop intentional learners of all ages.
2	Seeking to ensure that students will thrive in an increasingly diverse and complex world.
3	Preparing students for successful transfer to other educational institutions and/or entrance into the workforce.
4	Empowering students through the mastery of intellectual and Practical Skills.
5	Challenging students to transfer information into knowledge and knowledge into action.

9. Related Courses at Other Institutions

Comparable Courses at NJ Community Colleges

Institution

Essex County College

Course Title

Network Defense & Counter Measures

Course Number

CSC226

Number of Credits

4

Institution

Hudson County CC

Course Title

Cybersecurity

Course Number

CSC232

Number of Credits

3

Transferability of Course

Georgian Court University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
		Unable to determine status

Kean University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
		Unable to determine status

Monmouth University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
		Unable to determine status

Rowan University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
		Unable to determine status

Rutgers - New Brunswick, Mason Gross School of the Arts

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
		Unable to determine status

Stockton University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
		Unable to determine status

If not transferable to any institution, explain:

No other comparable programs

10. Course Learning Outcomes

Learning Outcomes

	Students who successfully complete this course will be able to:
CLO1	Students will be able to understand and communicate common security concepts, from common terminology and underlying concepts like Risk scoring, to security deployments and access control models.
CLO2	Students will be prepared to employ security monitoring techniques, as they will understand attack surfaces and vulnerability, and a wide variety of protection techniques.
CLO3	Students will be able to conduct host-based analysis, as they will understand the functionality of a variety of endpoint technologies that contribute to security monitoring, and utilize the various types of evidence provided by logs.
CLO4	Students will be able to conduct network intrusion analysis through the use of network security tools, and they will be able to determine the impact and type of alert based on this data.
CLO5	Students will be ready to describe the various security policies and procedures that contribute to a successful security program and security operations center in an enterprise network.

11. Topical Outline

(include as many themes/skills as needed)

	Major Themes/ Skills	Assignments (Recommended but not limited to)	Assessments (Recommended but not limited to)	Course Learning Outcome(s)
TO1	Understand threat actors and network defenders: • Explain why networks and data are attacked. • Explain how to prepare for a career in cybersecurity operations.	Reading Class Discussion Research	Exam	CLO1, CLO5
TO2	Understand operating systems and their security features: • Explain the security features of the Windows operating system. • Implement basic Linux security.	Reading Class Discussion Technical Labs	Exam	CLO1, CLO3

TO3	Understand the fundamentals of networking:• Explain how protocols enable network operations. • Explain how the Ethernet and IP protocols support network communication. • Use ICMP connectivity verification tools. • Analyze address resolution protocol PDUs on a network.• Explain how transport layer protocols support network functionality. • Explain how network services enable network functionality.	Reading Class Discussion Technical Labs Packet Tracer Activities	Exam	CLO2, CLO4
TO4	Understand network infrastructure security: • Explain how network devices enable wired and wireless network communication. • Explain how devices and services are used to enhance network security.	Reading Class Discussion Packet Tracer Activities	Exam	CLO1-4
TO5	Understand common threat and attacks against networks: • Explain how networks are attacked. • Explain the various types of threats and attacks. • Explain network traffic monitoring. • Explain how TCP/IP vulnerabilities enable network attacks. • Explain how common network applications and services are vulnerable to attack.	Reading Class Discussion Research Technical Labs Packet Tracer Activities	Exam	CLO1,CLO2,CLO4

12. Methods of Instruction

In the structuring of this course, what major methods of instruction will be utilized?

a. Class Lecture
b. Discussion
c. Demonstrations
d. Labs
e. Online presentations, online activities, and assessments.

13. General Education Goals Addressed by this Course (this section is to fulfill state requirements)

Information

Communication-Written and Oral

Yes

Related Course Learning Outcome

CLO1-5

Related Outline Component

TO1-5

Assessment of General Education Goal (Recommended but not limited to)

Exam and Presentation
Research

_____

_____

_____

Technological Competency
Yes

Related Course Learning Outcome
CLO1-5

Related Outline Component
TO1-5

Assessment of General Education Goal (Recommended but not limited to)
Exam and Presentation
Research

_____

Information Literacy
Yes

Related Course Learning Outcome
CLO1-5

Related Outline Component
TO1-5

Assessment of General Education Goal (Recommended but not limited to)
Exam and Presentation
Research

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_____

Independent/Critical Thinking
Yes

Related Course Learning Outcome
CLO1-5

Related Outline Component
TO1-5

Assessment of General Education Goal (Recommended but not limited to)
Exam and Presentation
Research

14. Needs

Instructional Materials (text etc.):
Please contact the department for current adoptions.

Technology Needs:
N/A

Human Resource Needs (Presently Employed vs. New Faculty):
N/A

Facility Needs:
N/A

Library needs:
N/A

15. Grade Determinants

The final grade in the course will be the cumulative grade based on the following letter grades or their numerical equivalents for the course assignments and examinations

A: Excellent

B+: Very Good

B: Good

C+: Above Average

C: Average

D: Below Average

F: Failure

I: Incomplete

R: Audit

For more detailed information on the Ocean County College grading system, please see Policy #5154.