PROGRAM SYLLABUS

Applied Cybersecurity

Offered on Main Campus

Program Number: Y100300   **Program Hours:** 750

Instructor: Leslie Harrison
                         CompTIA A+, Network+, Security+
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Program Description:

The Applied Cybersecurity program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and cybersecurity-related careers in the Information Technology career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of cybersecurity.

The content includes but is not limited to foundational knowledge and skills in computer and network security, security vulnerabilities, attack mechanisms and techniques, intrusion detection and prevention, cryptographic systems, system hardening, risk identification, incidence response, penetration testing, key management, access control, and recovery. Specialized courses focus on database security, planning and analysis, software, and web security.

In addition, the program will provide the student with opportunities for individual growth and personal awareness, which will hopefully lead to an expansion in their interests, confidence, personal success, work ethics and skills.

The purpose of the Applied Cybersecurity program reflects Emerald Coast Technical College's mission as evidenced by the desire to provide students with the training and education that is required to function successfully in the professional workforce.

Prerequisites: Network Support Services and CIW NTA or CompTIA Network+ recommended

Industry Certification/Licensure:
CompTIA Security+
CIW Web Security Associate
CIW Web Security Specialist
CIW Web Security Professional

Occupational Completion Points:

OCP	Course Number	Course Title	Course Length	SOC Code
A	CTS0018	Cybersecurity Associate	600 hours	15-1122
B	CTS0019	Information Security Manager	150 hours	15-1122

Program objectives and outcomes include but are not limited to:
1. Demonstrate an understanding of cybersecurity, including its origins, trends, culture, and legal implications.
2. Discuss the underlying concepts of terms used in cybersecurity.

3. Demonstrate an understanding of basic security concepts.
4. Demonstrate an understanding of legal and ethical issues in cybersecurity.
5. Demonstrate an understanding of virtualization technology.
6. Understand the application of the following concepts of physical security.
7. Understand security concerns and concepts of the following types of devices.
8. Understand the security concerns for the following types of media.
9. Explain the following security topologies as they relate to cybersecurity.
10. Demonstrate an understanding of the technical underpinnings of cybersecurity and its taxonomy, terminology, and challenges.
11. Demonstrate an understanding of common information and computer system security vulnerabilities.
12. Demonstrate an understanding of common cyber attack mechanisms, their consequences, and motivation for their use.
13. Be able to identify and explain the following different kinds of cryptographic algorithms.
14. Demonstrate an understanding of the following kinds of steganographic techniques and their use in cybersecurity.
15. Understand how cryptography and digital signatures address the following security concepts.
16. Understand and be able to explain the following concepts of PKI (Public Key Infrastructure).
17. Demonstrate an understanding of certificates and their role in cybersecurity.
18. Demonstrate an understanding of intrusion, the types of intruders, their techniques, and their motivation.
19. Demonstrate an understanding of Intrusion Detection Systems (IDS).
20. Demonstrate an understanding of port scanning and network traffic monitoring employed as intrusion detection techniques.
21. Demonstrate an understanding of firewalls and other means of intrusion prevention.
22. Demonstrate an understanding of vulnerabilities unique to virtual computing environments.
23. Demonstrate an understanding of social engineering and its implications to cybersecurity.
24. Demonstrate an understanding of fundamental security design principles and their role in limiting points of vulnerability.
25. Demonstrate an understanding of how to configure host systems to guard against cyber intrusion.
26. Demonstrate an understanding of authentication methods and strategies.
27. Customer service and human relations.
28. Employability skills.
29. Safe, efficient work practices.
30. Industry Certification

Textbook:

CompTIA Security+ Guide, 6th Ed. By Conklin, White

ISBN-13: 978-1260464009

Online Resources:

Canvas
TestOut LabSim for Security Pro (online)
CIW Web Security Specialist
Please note, the cost of online resources is included in lab fees. Students will not need to purchase additional resources.

Tools/Supplies/Materials:
Students will need to provide their own writing utensils and paper for note-taking purposes. Students are not required to purchase or bring their own tools for this program.

Grading Scale:
A	93-100
B	84-92
C	70-83
F	69 & Below

Evaluation/Assessment:
40% Evaluation (Written Exams and Major Projects)
40% Competency/Performance Evaluation (assignments, minor projects, homework and lab activities)
20% Trouble Tickets/Work Orders
Please note, the evaluation/assessment rubric listed above is a general evaluation rubric for the program of study.

Satisfactory Progress:
This program is a planned sequence of instruction consisting of four occupational completion points. When the recommended sequence is followed, the structure is intended to prepare students to complete the industry certifications associated with this program of study. This program adheres to the Satisfactory Progress guidelines listed in the ECTC Catalog.

Instructional Delivery Methods:
This program is a traditional program taught on ECTC campus. It uses a variety of instructional delivery methods including but not limited to:
❖ Hands-on training
❖ Lectures
❖ Videos
❖ Web-based programs

Conferences and Assistance:
Please contact the instructor first. Counselors located in student services are also available.

Classroom Location:
761 N. 20th Street   DeFuniak Springs, Florida 32433
Building 100 Room 052

Office Location:
761 N. 20th Street   DeFuniak Springs, Florida 32433
Building 100 Room 047

Office Hours:
Regular office hours for the instructor are 7:30-8:00 a.m. (Mon-Thurs) or as scheduled by appointment.

Attendance:
Attendance is mandatory. Students who believe that attendance may present a problem should discuss their situation with the instructor and with student services. Meet with instructor to schedule makeup hours. Refer to the ECTC Catalog/Student Handbook for the attendance policy.

Meeting Times/Contact Hours:
Refer to student schedule for class meeting times.

Equipment:
Students will use network and computer hardware/software used in the industry including physical security devices, industrial security panel, health industry devices and network equipment in cyber classroom.

Safety:
- Safety is priority one.
- This program follows CDC guidelines.
- Touch-free temperature and hand sanitizing stations have been installed.
- Report any unsafe conditions to the instructor immediately.
- If you are not comfortable or confident with any lab or project, stop and notify instructor.

Emergency Procedures:
- Emergency exits are clearly marked.
- As part of regular classroom instruction, students will be asked to participate in regular safety and emergency drills.
- Fire extinguishers are located in each area.

Rules and Regulation / Policies and Procedures:
Students will follow all rules/regulations outlined in the Emerald Coast Technical College Catalog.

General Information:
Refer to the ECTC Catalog located at http://www.ECTC.edu, for additional information:
- Career and Counseling Services
- Services for Students with Disabilities
- Student Grievance Procedures
- Leave of Absence
- Withdrawal
- Forms

Mission Statement:
We prepare and empower today's students to meet the demands of an evolving and competitive workforce.