

Applied CyberSecurity Handbook





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Introduction



Introduction to Applied CyberSecurity

Mission

The Applied CyberSecurity program is designed to provide students with the necessary instruction and experience to prepare them to pursue a career and employment in the field of cybersecurity after successful completion of the Applied CyberSecurity program. Upon completion of the program the student will have acquired the necessary skills required to perform competently in the field as a security technician/specialist.

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.

Welcome

Welcome to Applied CyberSecurity at Emerald Coast Technical College. Applied CyberSecurity focuses on communication, network configuration, security audits, security procedures and troubleshooting skills needed by today's IT professionals.

While enrolled in this program, you will receive hands-on training and preparation for certification exams in addition to the Applied CyberSecurity coursework. I look forward to working with you and assisting you in becoming a successful IT professional.

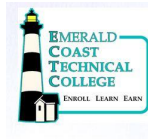
Leslie Harrison

IT Instructor

General Program Information

Applied CyberSecurity prepares students for employment and/or specialized training in the Information Technology (IT) industry. This program of study focuses on broad, transferable skills and stresses understanding and demonstration of security and networking technologies. Applied CyberSecurity is a post secondary offering. Post-secondary students must complete 750 hours in order to complete the program. Network Support Services or the Network+ certification is a prerequisite for this program.

The Applied CyberSecurity program is organized according to the Florida Department of Education's (DOE) frameworks, CompTIA's Security+ certification objectives, CIW certification objectives, along with objectives agreed upon by the Emerald Coast Technical College Information Technology (IT) Advisory Committee. Emerald Coast Technical College began offering the Applied CyberSecurity program in January 2013.



Students successfully completing the Applied CyberSecurity Program will receive Occupational Completion Points (OCP) in addition to a program completion certificate from Emerald Coast Technical College. OCPs are awarded based on the schedule listed below.

Occupational Completion Points (OCP):

OCP	Course Number	Course Title	Course Length	SOC Code
A	CTS0018	Cybersecurity Associate	600 hours	15-1071.01
B	CTS0019	Information Security Manager	150 hours	15-1071.01

Purpose

This 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.

The Applied CyberSecurity program prepares students for employment as a Security Specialist, as listed on the current Regional Targeted Occupations List. The Information Technology field uses a variety of names for essentially the same occupation. These job titles include but are not limited to: security specialist, security technician, LAN security technician, and network security tech/specialist.

It is recommended students prepare for certification exams while enrolled in the program. Therefore, textbooks and study materials align with the following certification:

- CompTIA Security+
- CIW Web Security



Applied CyberSecurity is an integral step in helping students prepare for CompTIA's Security+ certification. Students enrolled in Applied CyberSecurity will also be offered the opportunity to obtain CIW certifications. Refer to the industry certification section of this handbook to obtain specifics regarding each certification.

Upon program completion, Applied CyberSecurity students will have the necessary skills for the following program content:

- Computer and Network Security Fundamentals
- CyberSecurity Essentials
- Operational Cybersecurity
- Cybersecurity Planning and Analysis
- Database Security
- Software and Application Security
- Web Security
- Applied CyberSecurity Applications
- Customer service and human relations
- Employability skills
- Safe, efficient work practices

Students are expected to understand and follow all school rules and policies. Students are responsible for class, lab and equipment care. Students are responsible for maintaining proper industry work habits and conduct. Clean-up is the responsibility of all students and will be conducted on a daily basis.

21st-Century Skills:

Instructional strategies for this program include methods that require students to acquire:

1. Digital-Age Literacy - basic scientific, mathematical, and technological literacies - visual and information literacies - cultural literacy and global awareness;
2. Inventive Thinking - adaptability/ability to manage complexity - curiosity, creativity, and risk taking - higher order thinking and sound reasoning;
3. Effective Communication - teaming, collaboration, and interpersonal skills - personal and social responsibility - interactive communication;
4. High Productivity - ability to prioritize, plan, and manage for results - effective use of real-world tools - relevant, high-quality products.



Admission Procedures

Orientation



Student orientation for career education programs is provided during the beginning weeks of class each year. Information on school policies, procedures, general and emergency safety provisions and student services is included in orientation. Individual orientation sessions are provided on an as-needed basis to students through the student services office. Please note, the admission procedures for technical dual and post secondary (adult) differ slightly.

Post Secondary Career Education

Students who have attained the age of 16 years and who meet one or more of the following requirements may enroll in *most* PSAV or Certificate programs at Emerald Coast Technical College:

- Standard High School Diploma
- GED
- Special Diploma*
- Certificate of Attendance*
- Provisional admission based on application (no high school diploma)*

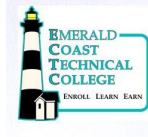
*Students wishing to benefit from PSAV to AAS/AS degree articulation agreements must have a standard high school diploma or equivalent or a CPT Eligible Certificate of Completion and must meet specified college requirements. Please discuss your goals with a counselor in student services to help ensure that you will meet the necessary requirements.

Transfer students may enroll in PSAV or Certificate programs at Emerald Coast Technical College and may be awarded credit toward program completion based on official transcripts and/or competency testing. Please see a representative in student services to discuss your situation.

General Admissions Procedures for Postsecondary Certificate Programs

- Complete *general* application
- Meet with counselor
- Complete appropriate testing (e.g., TABE if no exemption applies; CareerScope®)
- Follow up meeting with counselor
- Complete *program* application
- Interview with Instructor
- Request transcripts
- Register with admissions/postsecondary business office during specified time
- Meet with counselor/student services if financial aid is needed
- Pay tuition & fees and purchase textbooks and supplies

Students are required to meet with program instructors prior to first class attendance. Counselors can advise students regarding “best match” with career education programs and individual student interest and aptitude profile and personal goals. Counselors and teachers can assist students in evaluating job placement possibilities.



Basic Skills

In PSAV programs offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Mathematics 10, Language 9, and Reading 9. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02(7), Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01(3)(a), F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91(3), F.S.

Students who possess a college degree at the Associate of Applied Science level or higher; who have completed or are exempt from the college entry-level examination; or who have passed a state, national, or industry licensure exam are exempt from meeting the Basic Skills requirement (Rule 6A-10.040, F.A.C.) Exemptions from state, national or industry licensure are limited to the certifications listed at <http://www.fldoe.org/workforce/dwdframe/rtf/basicskills-License-exempt.rtf>.

<u>Area</u>	<u>Basic Skills Level</u>
Mathematics:	10
Language:	9
Reading:	9



Instruction & Grading



Method of Instruction

Instruction is delivered using a variety of methods.

Lectures/Discussions:

Formal class lectures/discussions are held on a regular basis.

Labs:

Laboratory activities are an integral part of this program and include the use of keyboarding systems, computers, computer software, and peripheral equipment. Students must demonstrate an understanding of basic principles and applications prior to starting labs and major projects. Students will submit all work, other than written exams, at the beginning of the next class. This can be done electronically once this particular skill is mastered.

You will be assigned a specific computer workstation. The equipment you will use is reliable. However, with abuse or misuse, it will malfunction and become inoperable. Be careful and have the instructor demonstrate the use of the equipment before using it for the first time. Read all instructions carefully and ask questions prior to use. Keep your workstation and lab areas clean and orderly while performing assignments. The classroom lab will be clean and secured at the end of each project or period whichever comes first. If a lab assignment will take more than the allotted time notify the instructor. If you are not comfortable or confident with any lab work, stop and notify instructor.

Information Technology Trouble Tickets/Work Orders:

Students will be assigned technology trouble tickets/work orders on a regular basis. Technology work orders are used to simulate the work world. Students will become accustomed to completing hands-on tasks, documenting their work and submitting the work order(s) electronically.

Edmodo:

The instructor will assign each student to an Edmodo group(s). Edmodo will be the method used to submit most assignments. Students should refrain from using personal email accounts when submitting assignments. Students should submit all assignments using Edmodo as instructed.

Attendance

In order for students to meet satisfactory academic and attendance progress they be on time and attend regularly scheduled lectures and labs.

Post-secondary students must meet an attendance requirement by program and are responsible for making up absences. No more than 15 hours can be missed during a 150 hour period within a course. It is highly recommended students make up all hours. Students are responsible for scheduling make up hours with instructor. If a student needs to be



absent for an extended period of time the special circumstance must be approved by the instructor, student services and the financial aid office. The student might need to consider leave of absence or withdrawal.

Students are expected to be on time and attend regularly scheduled lectures and labs. Students must have instructor permission when leaving the classroom / lab area.

Grading

Exams:

The course examinations consist of written knowledge examinations and performance evaluations. A knowledge examination is given upon completion of each major topic assignment. Performance evaluation must be mastered before proceeding to the next assignment. Students are required to master performance evaluations before moving on to the next major topic.

How You Are Measured (Grades):

40% Evaluation (written exams and major projects)

30% Competency/Performance Evaluation (assignments, labs, minor projects)

20% Certification Prep

10% Trouble Tickets/Work Orders

Numerical Equivalent of Grades:

93-100 = A

84-92 = B

70-83 = C

69 & Below = F (Failure)

Incomplete = I (Reverts to Failure)

Progress Reports/Report Cards

Students may track grades using the Focus student system. Students are provided with log in credentials. Students may request an official progress report from data entry in the main office.

Student Success

Students are expected to complete all reading, classroom, lab and homework assignments in addition to studying and maintaining program handouts. Students are also expected to read technical material such as trade magazines in order to stay on top of current industry trends.

Students failing, with a term average less than 70/C, will be required to repeat the course, if he/she elects to remain in the program. Post secondary students earning a grade less than 70/C will be required to pay tuition for repeating a course.



Students will be provided with detailed assignment sheets for each major area/topic of study. Complete mastery of an area must be achieved before proceeding further. Students are responsible for maintaining a sufficient rate of progress throughout the course, consistent with their individual student ability.

Conferences

You are welcome and encouraged to come to instructor's office to talk over any problems you may have in this course. Students needing assistance with problems will research along with the instructor all possibilities and utilize all reference materials to achieve a solution. Class interaction and discussion concerning computer and networking software and application is encouraged.

Office Hours and Contact Information

Regular office hours for the instructor are Mon. – Fri., 8:00 – 3:00 or as scheduled by appointment. Students may also contact the instructor via email, HarrisL@Walton.K12.FL.US, or telephone, 850-892-1240 ext 5161.



Remediation, Counseling & Financial Information



Tutoring/Remediation/Accommodations

In accordance with Rule 6A-10.040 (FAC), the minimum basic skills grade levels required for postsecondary adult vocational students is: Mathematics 9.0, Language 9.0, Reading 9.0. These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Individuals are administered the Test of Adult Basic Education (TABE) and counselors use these TABE scores in determining qualifications for selected programs. Students may elect to enroll in Applied Academics for Adult Education(AAAE) prior to taking their initial Test of Adult Basic Education (TABE) or they may be referred to the program for assistance after test results have been reviewed.

AAAE is designed to assist in remediation of basic skills. Career and Technical Related Basic Skills/Applied Academics for Adult Education(AAAE) is provided at the same rate as regular career education program tuition. Students may apply for waivers for this tuition charge. Contact the Post Secondary Business Office at 850-892-1240 ext 5111 for more information regarding tuition/waivers.

AAAE assists students in attaining required exit academic/TABE levels for their selected career education program. Students possessing an Associates degree or higher or whose TABE scores reflect satisfactory exit levels are NOT required to take the AAAE courses. Contact AAAE at 850-892-1240 ext 5175 for more information regarding remediation.

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Students are expected to lift approximately twenty pounds. Adult students with academic and/or physical disabilities must self-identify and request such services during the initial registration process. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided will be maintained in a confidential file.

Academic and Career Counseling

A certified guidance counselor is available to students to help in planning coursework to maximize the student's possibility of benefiting from the educational experience and to assist in planning for successful entry into postsecondary/college training or employment. Student interests, aptitudes, and long-term goals are considered when developing the student's program of study.

Career counseling services are available to help in planning and achieving career and academic educational goals. Career counselors can help students explore possible career options through current labor market information and objective and subjective assessment of student interests, aptitudes, attitudes, and values. By assisting the student in acquiring relevant information, the counselor can help the student make informed career choices. The counselor may then assist the student in selecting and registering for programs and



coursework appropriate for the student's career choice as well helping in the student in acquiring needed financial aid, job search skills, and job placement.

The goal of the student services department is a successful learning experience for students enrolled at Emerald Coast Technical College. Along with assisting students with specific academic and career related needs, counselors can assist students in developing skills for successful goal-setting, test-taking, and conflict resolution.

Textbooks

Post secondary students may purchase their textbooks on their own or from the ECTC bookstore. Technical dual enrollment students will be assigned a textbook(s) that must be returned to ECTC.

Applied Cybersecurity Textbook:

Textbook: CompTIA Security+ Guide to Network Security Fundamentals

by Mark Ciampa

ISBN: 9781337685856

Tuition, Fees & Financial Aid

Emerald Coast Technical College is a public secondary and postsecondary school focusing on career education. Tech dual students enrolled in academic coursework and career education programs at Emerald Coast Technical College are not required to pay additional tuition or registration fees. Students may access information regarding financial aid and scholarship opportunities through student services.

Students with questions regarding tuition, fees and financial aid should contact financial aid, located in the main office. A list of course fees may be picked up in student services.

Supplies

Students will need basic classroom supplies (pen, pencil, paper, and notebook). These supplies are to be brought to class on a daily basis. Safety equipment, specific to the occupation, is provided. All major tools are provided.



Safety, Rules & Regulations



Safety

Students will follow all rules/regulations outlined in the Walton County School District Code of Conduct and the ECTC Catalog. Students will follow the safety guidelines listed below:

- Safety is priority one. Make learning safe, fun and enjoyable!
- Report any unsafe conditions to the instructor immediately.
- If you are not comfortable or confident with any lab work, stop and notify instructor.
- All software and hardware has a place, return it to the proper location in order to keep our lab safe.
- All students will receive fire extinguisher training.
- All students will be trained in the area of ergonomics.
- All students should observe appropriate safety precautions when lifting or moving equipment/tools.
- Everyone must complete the safety lectures/labs prior to working on labs/work orders.
- Antistatic wrist straps must be worn when working on circuit boards or inside system units (towers).
- Goggles must be worn when soldering.

Emergency Procedures

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

It is the responsibility of the student to report an injury to the instructor if he/she is injured while on school property. The instructor will notify administration as soon as possible. In case of a serious injury, the student will receive immediate care from the instructor and the instructor will send for assistance.

Cell Phone Usage

Students should refrain from texting, messaging, surfing the Internet and making/accepting calls when in class. Phones should be on silent when entering class.

Rules & Regulations

Expectations

Students will follow all rules/regulations outlined in the Walton County School District Code of Conduct and the ECTC Catalog. Students are responsible for class, lab and equipment care. Students are responsible for maintaining proper industry work habits and conduct. Clean-up is the responsibility of all students and will be conducted on a daily basis. Discipline will be administered based on the guidelines set forth in the Walton County School District Code of Conduct and the ECTC Catalog.



Program Dismissal for Post Secondary Students

All students are expected to adhere to the rules/regulations outline in the syllabus, Walton County School District Code of Conduct and the ECTC Catalog. Students not adhering to these rules are subject to program dismissal. The instructor will complete a discipline referral in order to document rule/regulation violations. If the infraction occurs during the evening hours or when an administrator is not on campus, the student must leave the campus immediately. At that point, the student will not be allowed to return to campus unless otherwise notified by the administrator. The instructor will submit the referral to the school administrator. If the administrator deems program dismissal is necessary, a written notice will be sent via certified mail, informing him/her of the consequences (program dismissal) of his/her actions.

Post secondary students, in arrears on tuition/fees, will be notified by letter of their dismissal from the current term unless payment arrangements have been made with financial aid. Questions regarding tuition/fees should be referred to financial aid, located in the main office.

Dress Code

Students are reminded that ECTC is a career preparatory facility. Dress appropriate to business and industry is expected. The dress and personal appearance of students should be a positive reflection on the family, student, school, and community.

Students found to be in violation of the dress code will be warned on the first offense, depending on the severity of the infraction, and will be required to change into appropriate clothing before continuing with class.

A good rule of thumb: If there is a question whether an outfit would be acceptable, then choose another outfit. The time missed from class as a result of a dress code violation will be unexcused.

Driving Privileges & Parking Permits

ALL cars MUST have a parking permit prominently displayed. A student must present a current copy of the vehicle registration, proof of insurance (insurance card), and student driver's license for issuance of parking permit. Students should obtain parking permits during the registration process.

All students must follow the driving rules and regulations, as stated in the ECTC Catalog. Violation of these rules and regulations could result in the suspension of driving privileges.

Visitors



Emerald Coast Technical College campus welcomes visitors having legitimate business on campus. Classroom visitors must be pre-approved by program instructor and administration. To help ensure a safe and orderly learning environment, ALL visitors to the campus MUST contact the Main Office and sign in upon arrival. Visitors should also return to the administrative office and sign out when their business on campus is completed. School rules prohibit unauthorized persons (without a visitor's pass) being on campus during school hours. Unauthorized person(s) are subject to arrest by the Walton County Sheriff's Department for trespassing.



Program Of Study



Emerald Coast Technical College Program of Study

Program of Study Applied Cybersecurity

Program # Y100300	CIP: 0511.100302	TABE Exit Scores (A Level):
750 Clock Hours/approximately 45 weeks	Certifications: CIW Web Security CompTia Security+	Reading: 9 Math: 10 Language: 9
Admission Requirements: Standard Emerald Coast Technical College admission requirements apply. Must be 16 years of age or older.		
Regular registration fees apply. Pre-Registration Fees: N/A.		

The Applied Cybersecurity Program prepares students for further education and cybersecurity-related careers in the Information Technology career cluster. Program 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.

Approximate Expected Salary Ranges:	ECTC Program Advisory Committee	Okaloosa/Walton Workforce Region 2 Entry	Okaloosa/Walton Workforce Region 2 Average	State Entry	State Average
	\$25,000 - \$45,000/yr.	\$25.67/hr.	\$40.54/hr.	\$25.67/hr.	\$40.54/hr.

Program Completion /Placement/Licensure Rates			
	Completion	Placement	# Industry Certifications
2014-15	100%	100%	2
2013-14	100%	100%	0
2012-13	N/A - New	N/A - New	N/A - New

Students are encouraged to contact the student services department or program instructor for assistance in planning a personalized program of study.

Course Name	Course Number	Clock Hours	Estimated Program Cost for All Courses Listed (planning purposes only)		
			Tuition (Florida Resident)	Lab Fees	Books/Supplies-estimate only
Cybersecurity Associate	CTS0018	600	\$1,728.00	\$450.00	\$250.00
Information Security Manager	CTS0019	150	\$432.00	\$112.50	One text book is required for use throughout the program
Total		750	\$2,160.00	\$562.50	\$250.00

This program of study is provided to assist the student in planning for education and training programs currently offered at Emerald Coast Technical College, 761 North 20th Street, DeFuniak Springs, Florida, and does not constitute any legal or implied contractual obligation between the student and the Emerald Coast Technical College. Estimated salary ranges based on information available at time of catalog. Additional labor market information is available at: www.employflorida.com

This program of study is provided to assist the student in planning for education and training programs currently offered at Emerald Coast Technical College, 761 North 20th Street, DeFuniak Springs, Florida, and does not constitute any legal or implied contractual obligation between the student and the Emerald Coast Technical College.



Industry Certifications



Certifications

IT Certifications

The Information Technology (IT) arena is overflowing with technology-related certifications. The certification list below was developed based upon common certifications listed in job postings and emphasized by the ECTC Information Technology Advisory Committee.

A student should meet with the instructor and develop a review schedule targeting his/her weakest areas, based on simulation exam results, a few weeks prior to scheduling a certification exam. The student should schedule a certification exam *only* after the student and teacher determines he/she is ready to pass a certification exam. It is recommended the student bring his/her test results or certification to the instructor in order for a copy to be made and placed in the student's portfolio because employers often ask instructors for verification of certifications.

CompTIA Security+

CompTIA Security+ is an international, vendor-neutral certification that demonstrates competency in:

- Network security
- Compliance and operational security
- Threats and vulnerabilities
- Application, data and host security
- Access control and identity management
- Cryptography

CompTIA Security+ not only ensures that candidates will apply knowledge of security concepts, tools, and procedures to react to security incidents, it ensures that security personnel are anticipating security risks and guarding against them.

Recommended Exam Schedule - Complete the Applied CyberSecurity program then schedule the exam, allowing approximately three to four weeks for review.

Web site - <http://certification.comptia.org/network/default.aspx>

Register for Exam - <http://certification.comptia.org/resources/registration.aspx>

Cost of the Exam – Exam voucher is included with lab fees. Student must contact instructor for exam voucher.

Certified Internet Webmaster (CIW) Certification



CIW comprises the world's fastest growing vendor-neutral Web technology education and certification programs for professionals.

More than a certification or a curriculum publisher, CIW has become the educational standard adopted by academic institutions, governments and businesses worldwide for Web technology skills. CIW includes applications and competencies, but the core curriculum focuses on the foundational standards of the Web, including Web design, Web development and Web security.

CIW certifications verify that certified individuals have the skills necessary to master a technology-driven world. In today's competitive workplace, certified CIW professionals have proven abilities that set them apart from other Web professionals.

ECTC is an approved test site for CIW certification exams.

Web site - <http://www.ciwcertified.com/index.php>

Register for Exam - Contact the instructor to register for exam.

Cost of the Exam - Included in lab fees

