A DUAL ENROLLMENT CAREER PATHWAY FOR COMPUTER TECHNOLOGY: CYBERSECURITY AND FORENSICS EMPHASIS

12th Grade:

**FALL**
- ENG 155 or ENG 101*
- MAT 155 or MAT 120* or MAT 110*

**SPRING**
- ENG 156 or SPC 205*
- CPT 170**

*If you plan to continue education beyond Associate Degree.

**TAP credit available for CPT 170, CPT 270, IST 222 with successful completion of TAP exam. Additional TAP credit may be available. Talk with your high school instructor for more details.

High School Graduation with 12 Hours or More College Credit

- CPT 167
- IST 222**
- Social Science
- Humanities

**Graduate from High School with 12 or More Hours of College Credit**

- Build a competitive and marketable resume for work in a variety of settings following high school.
- Earn 12 or more hours of college credit (dual enrollment + TAP) that you can use toward an Associate in Applied Science Degree in Computer Technology.
- Successful students are effective problem solvers, detail-oriented, and enjoy mathematics.
- Take your dual enrollment classes at a TCTC Campus alongside college students or at a college site in your district.
- Qualify for positions in a high-demand field expected to increase by 7.6% over the next 4 years.

**Entry-Level**
- $40,460 Annually
- Median $69,470 Annually

**High School Graduation with 12 Hours or More College Credit**

**TAP**

**FALL**
- CPT 167
- IST 222**
- Social Science
- Humanities

**SPRING**
- CPT 264
- IST 257
- IST 272
- IST 269
COURSE DESCRIPTIONS
This degree emphasis in Cybersecurity and Forensics prepares graduates for employment by providing skills in technical support, forensic investigation, computer and network security, and network administration. Students learn additional skills in multiple areas of information technology including databases, operating systems, programming, and web development.

CPT 167 - Introduction to Programming Logic
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course introduces fundamental concepts in structured programming. Problem solving and algorithm development through pseudo code and flowcharting is emphasized. Solutions are developed using the basic control structures of sequential, decision, and iteration.

CPT 170 - Microcomputer Applications
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course introduces microcomputer applications software, including word processing, databases, spreadsheets, graphs, and their integration.
Note: Reading placement scores satisfactory for ENG 100 or ENG 155 is strongly recommended.

CPT 176 - Microcomputer Operating Systems
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course covers operating systems concepts of microcomputers, including file maintenance, disk organization, batch files, and subdirectory concepts.
Prerequisites: CPT 167.

CPT 234 - C Programming I
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This introductory course in C Programming emphasizes the designing, coding, testing, and debugging of C programs involving input/output operations, data types, storage classes, decision structures, looping functions, preprocessor directives, arrays, and simple pointers.
Prerequisites: CPT 167.

CPT 242 - Database
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course introduces database models and the fundamentals of database design. Topics include database structure, database processing, and application programs which access a database.
Prerequisites: CPT 234.

CPT 264 - Systems and Procedures
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course covers the techniques of system analysis, design, development, and implementation.
Prerequisites: CPT 242 and IST 150.

CPT 285 - PC Hardware Concepts
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course focuses on installing and upgrading microcomputer hardware and identifying malfunctions.
Prerequisites: CPT 167.

ENG 101 - English Composition I
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This is a (college transfer) course in which the following topics are presented: a study of composition in conjunction with appropriate literary selections, with frequent theme assignments to reinforce effective writing. A review of standard usage and the basic techniques of research are also presented.
Prerequisites: Satisfactory Writing placement score or a grade of C or higher in ENG 100 or in ENG 155 and satisfactory Reading placement score or a grade of C or higher in RDG 100.

ENG 155 - Communications I
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course introduces the principles of expository writing and public speaking through practice and development of communication skills.
Prerequisites: Satisfactory Writing placement score or a grade of C or higher in ENG 102 and satisfactory Reading placement score or a grade of C or higher in RDG 100.
Note: This course cannot be used for an AA or AS degree.

ENG 156 - Communications II
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course is a continuation of the development of communication skills through writing, speaking, and library research assignments.
Prerequisites: A grade of C or better in ENG 155 or in ENG 101.
Note: This course cannot be used for an AA or AS degree.

IST 150 - Project Management Essentials for IT Professionals
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course is the study of integrated project management for computer technology professionals with emphasis on the methods & software used by IT professionals, including task lists, Gannt charts, discussion of critical path statistical resource management, scheduling, budgeting, & economic factors.
Prerequisites: CPT 170.

IST 191 - LINUX System Administration
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course will provide students with the skills necessary to administer a LINUX system, including hardware/software configuration, user and group administration, LINUX network configuration, and file system management.
Prerequisites: CPT 167.

IST 220 - Data Communications
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course is a study of the fundamentals of data communications. Basic signaling, networking, and various transmission media are covered.
Prerequisites: CPT 167.

IST 222 - Introduction to Webpage Production
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course is designed to develop skills in using common office and web development software to produce webpage content.

IST 257 - LAN Network Server Technologies
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course is a study of network operating system technologies including network operating system architecture, the installation, configuration, monitoring and troubleshooting of network resources, and network administration functions such as user/group maintenance, network security, print services, remote access, fault tolerance, backup and recovery.
Prerequisites: IST 220.

IST 266 - Internet and Firewall Security
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course is an introduction to firewalls and other network security components that can work together to create an in-depth defensive perimeter around a Local Area Network (LAN).
Prerequisites: IST 220.

IST 268 - Computer Forensics
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course provides students with a foundational knowledge in computer forensics investigation. Students are introduced to the skills, tools, and methods used to gather, document, and handle electronic evidence.
Prerequisites: IST 191.

IST 269 - Digital Forensics
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course examines advanced technical aspects of digital computer evidence to include detection, collection, identification, and preservation. Emphasis is placed on specific tools and methods for extracting deleted or destroyed computer-related evidence.
Prerequisites: IST 268.

IST 272 - Relational Database
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course provides a comprehensive foundation in both SQL and relational database design and implementation. Dynamic and embedded SQL programming techniques are emphasized.
Prerequisites: CPT 242.

IST 290 - Special Topics in Information Sciences
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course covers special topics in information sciences. As topics change, students may repeat this course for additional credit with permission of Department Head.
Prerequisites: CPT 234.

IST 291 - Fundamentals of Network Security I
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course is the study of intro levels of security processes based on a security policy, emphasizing hands-on skills in the areas of secure perimeter, security connectivity, security management, identity services, and intrusion detection. The course prepares students to manage network security.
Prerequisites: IST 220.

MAT 110 - College Algebra
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course includes the following topics: polynomial, rational, logarithmic, and exponential functions; inequalities; systems of equations and inequalities; matrices; determinants; and solutions of higher degree polynomials.
Prerequisites: Satisfactory math placement score or MAT 102 with a grade of C or better.
Note: Credit cannot be earned for both MAT 109 and MAT 110.

MAT 155 - Contemporary Mathematics
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course includes techniques and applications of the following topics: elementary number theory; algebra; geometry; measurement; graph sketching and interpretations, and descriptive statistics.
Prerequisites: Satisfactory math placement score or MAT 032 with a grade of C or better.
Note: This course cannot be used for an AA or AS degree.

MAT 120 - Probability and Statistics
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course includes the following topics: introductory probability and statistics, including organization of data; sample space concepts; random variables; counting problems; binomial and normal distributions; central limit theorem; confidence intervals and test hypothesis for large and small samples; types I and II errors; linear regression and correlation.
Prerequisites: Satisfactory math placement score or MAT 102 with a grade of C or better.

MAT 109 and MAT 110.

SPC 205 - Public Speaking
Class Hours: 3 Lab Hours: 0 Credit Hours: 3
This course is an introduction to principles of public speaking with application of speaking skills.
Prerequisites: A grade of C or higher in ENG 101 or in ENG 103 or in ENG 155 or in ENG 156.

TriCounty Technical College