



# CAREER PATHWAYS FOR SUCCESS

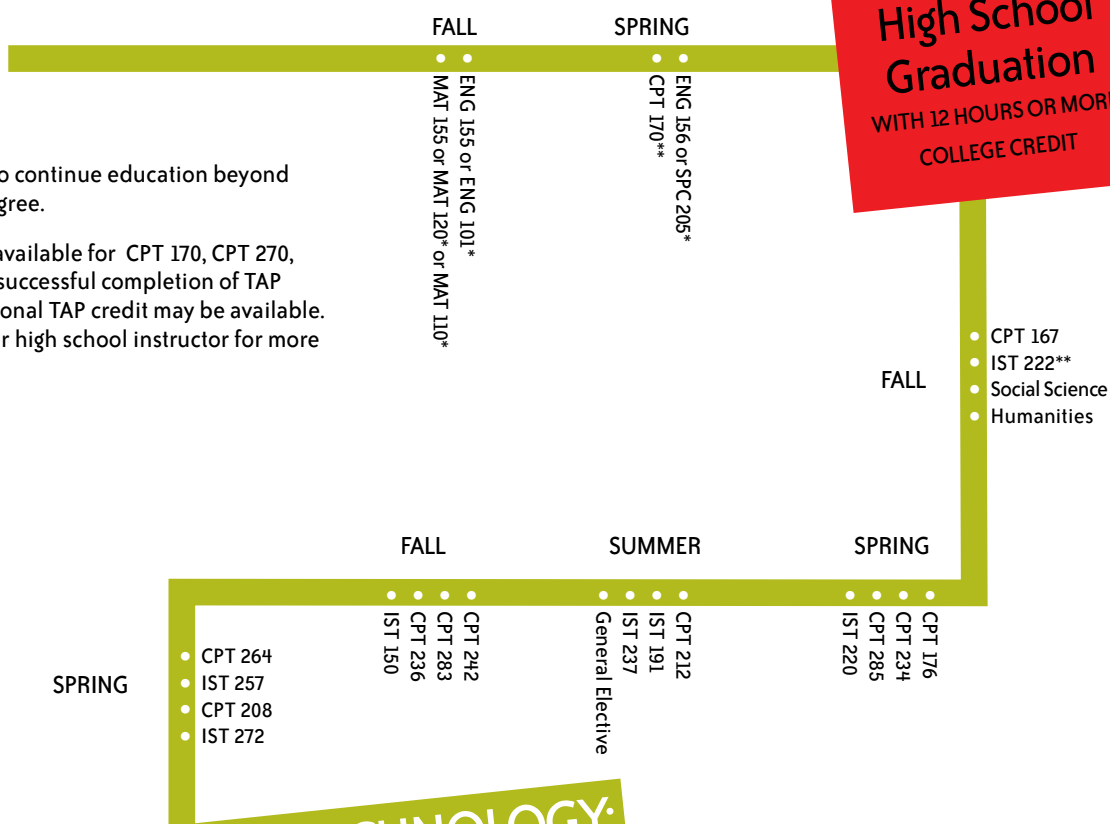
A DUAL ENROLLMENT CAREER PATHWAY FOR  
COMPUTER TECHNOLOGY: SOFTWARE AND  
WEB DEVELOPMENT

## 12<sup>th</sup> Grade:

\*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



**EXIT NOW**  
Entry-Level  
\$33,120-46,450  
Annually  
Median  
\$61,690 Annually

**COMPUTER TECHNOLOGY:  
SOFTWARE AND WEB  
DEVELOPMENT EMPHASIS  
ASSOCIATE IN APPLIED  
SCIENCE DEGREE**

**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.

**TRI-COUNTY TECHNICAL COLLEGE CONTACT:**  
Marla Cobb • mcobb9@tctc.edu

## COURSE DESCRIPTIONS

This degree emphasis in Software and Web Development provides applications software development skills in a variety of languages for delivery on a variety of platforms, such as computers, web, and mobile. Students learn additional skills in multiple areas of information technology, including databases, operating systems, technical support, and networking.

### **CPT 167 - Introduction to Programming Logic**

Class Hours: 3 Lab Hours: 0 Credit Hours: 3

This course introduces foundation 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 208 - Special Topics in Computer Technology**

Class Hours: 3 Lab Hours: 0 Credit Hours: 3

This course focuses on changes in computer technology. As topics change, students may repeat this course for additional credit with permission of Department Head.

Prerequisites: CPT 234.

### **CPT 212 - Visual Basic Programming**

Class Hours: 3 Lab Hours: 0 Credit Hours: 3

This course focuses on Windows programming using Visual Basic to create graphical user interfaces. The course examines forms, controls, graphical controls, loops, control arrays, database and traditional file processing, and application class scheduling.

Prerequisites: CPT 234.

### **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 236 - Introduction to Java Programming**

Class Hours: 3 Lab Hours: 0 Credit Hours: 3

This course is an introduction to java programming. Topics will cover java syntax and classes for use in the development of java applications and applets.

Prerequisites: CPT 234.

### **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 283 - PHP Programming I**

Class Hours: 3 Lab Hours: 0 Credit Hours: 3

This course is an introduction to the PHP programming language and will cover topics related to the syntax of PHP language and how PHP can be used to design and develop dynamic, database-driven web pages.

Prerequisites: CPT 234 and IST 222.

### **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 grade of C or higher in ENG 032 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, Gantt 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 237 - Intermediate Website Design**

Class Hours: 3 Lab Hours: 0 Credit Hours: 3

This course is a study of server-side (cgi; dynamic HTML) and client-side (JavaScript) dynamic web design, including the incorporation of database applications and content into web pages.

Prerequisites: CPT 234 and IST 222.

### **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 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.

### **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, or MAT 101 with a grade of A and a satisfactory reading placement score or RDG 100 with a grade of C or better or ENG 101 with a grade of C or better.

### **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.