Career Pathways for Success

A DUAL ENROLLMENT CAREER PATHWAY FOR COMPUTER TECHNOLOGY: NETWORK SYSTEMS MANAGEMENT EMPHASIS

12th Grade:

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

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

High School Graduation
WITH 12 HOURS OR MORE COLLEGE CREDIT

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

FALL
- IST 202
- IST 291
- IST 150
- CPT 242

SUMMER
- General Elective
- IST 201
- IST 191
- IST 241

SPRING
- IST 220
- CPT 285
- CPT 234
- CPT 176

SPRING
- CPT 264
- IST 257
- IST 203
- IST 204

*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.

EXIT NOW
Entry-Level
$41,190 Annually
Median
$67,420 Annually

COMPUTER TECHNOLOGY: NETWORK SYSTEMS MANAGEMENT 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:
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TriCounty TECHNICAL COLLEGE

COURSE DESCRIPTIONS

This degree emphasis in Network Systems Management provides graduates with skills in technical support, router configuration and security, network systems administration, and network security. 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 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 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 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 201 - Cisco Internetworking Concepts
Class Hours: 3 Lab Hours: 0 Credit Hours: 3

This course is a study of current and emerging computer networking technology. Topics covered include safety, networking, network terminology and protocols, network standards, LANs, WANs, OSI models, cabling, cabling tools, Cisco routers, router programming, star topology, IP addressing, and network standards.

Prerequisites: IST 220.

IST 202 - Cisco Router Configuration
Class Hours: 3 Lab Hours: 0 Credit Hours: 3

This course is a study of LANs, WANs, OSI models, Ethernet, token ring, fiber distributed data interface TCP/IP addressing protocol, dynamic routing, routing, and the network administrator's role and function.

Prerequisites: IST 201.

IST 203 - Advanced Cisco Router Configuration
Class Hours: 3 Lab Hours: 0 Credit Hours: 3

This course is a study of configuring Cisco routers.

Prerequisites: IST 202.

IST 204 - Cisco Troubleshooting
Class Hours: 3 Lab Hours: 0 Credit Hours: 3

This course is a study of troubleshooting network problems.

Prerequisite/Corequisite: IST 203.

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 241 - Network Architecture I
Class Hours: 3 Lab Hours: 0 Credit Hours: 3

This course is a study of how the computer architecture relates to the interconnecting of the various network components, the environment in which the applications processes execute, and the overall plan defining services to be provided in a distributed environment.

Prerequisites: IST 220.

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 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, 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.

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