



IT PROGRAMMING & SOFTWARE DEVELOPMENT

PATHWAY COURSE SEQUENCE:

1

Level 1: Information Technology Foundations (ITF)

Exposes you to various Information Technology (IT) occupations and pathways such as Networking Systems, Programming and Software Development, and Web Designs.

You will learn about:

- Social, legal and ethical issues encountered in the IT profession
- Electronics and basic digital concepts
- Project management, client relations and teamwork
- Causes and prevention of internet security breaches
- Writing styles appropriate for web publication

2

Level 2: Programming & Logic I

Teaches you standard programming techniques, logic tools and methods typically used to create simple computer applications.

You will:

- Solve problems by planning multistep procedures
- Write, analyze, review and revise programs to convert detailed information from workflow charts and diagrams into coded instructions in a computer language
- Troubleshoot/debug programs and software applications to correct malfunctions

3

Level 3: Programming & Logic II

Challenges you to develop advanced skills in problem analysis, design and use of algorithms, and the development of complex programming projects.

You will work individually and in teams to:

- Learn how and when to choose certain coding languages and develop simulated environments and strategies for a program's life cycle
- Complete short and long-term projects to craft error-free syntax for the writing and testing of programs
- Use high-level object-oriented languages such as FOCUS, Python or SAS

IT PROGRAMMING & SOFTWARE DEVELOPMENT PATHWAY COURSE SEQUENCE (continued)

4

Level 4: Programming & Software Development Practicum

A Capstone course where you will apply your skills and knowledge to complete a detailed project with fellow team members.

You will:

- Manage, plan, design, refine and produce original software applications
- Choose a specific application of interest to you, and develop a program requiring coding and development skills like a mobile app, animation package, game or an education tool
- Be prepared for post-high school studies or career advancement and know how to market your finished product

E

Pathway Elective: Work Based Learning Career Practicum

Helps you connect your classroom knowledge to high-demand, high-skill careers in Tennessee. You will develop employability skills preparing you for post-high school education and future careers. As a junior or senior (16 years or older), you may earn high school credit for Capstone WBL through internships, apprenticeships, and paid work experiences.

**Course sequence is identified by Tennessee Department of Education. Each school district determines courses offered in each pathway.*



CERTIFICATE TCAT**

\$20,000 - 70,000*

- Computer Support Technician
- RPG Developer

TCAT Athens
TCAT Chattanooga



ASSOCIATE COMM. COLLEGE

\$48,000 - 55,000*

- CMM Programmer/Lab Assistant
- Junior Windows Systems Administrator

Chattanooga State
Cleveland State



BACHELOR'S UNIVERSITY

\$80,000 - 105,000*

- Computer Programmer
- Application Engineer
- Software Quality Assurance Engineer

UTC - University of
Tennessee at Chattanooga

**Median wage ranges based on Tennessee Department of Labor & Workforce Development Labor Market Information- June 2014. Job standards, descriptions, and wages vary by company.*

***TCAT - Tennessee College of Applied Technology*