

Computer Technology

Whatever the organization, computer technology supports it



Students learn about the CompTIA A+ curriculum through the Cisco Networking Academy, tech support and video game design. An emphasis is placed on customer service and presentation skills.

Units of Study

- Mapping Game Coordinates
- Game Physics
- Beta Builds
- Game Ratings
- Proof of Concept Testing
- Isometric Geometry and Trigonometry
- Scrolling and Camera View
- Programming The Game Maker Language
- Elements and Principles of Art
- Edotyping
- Introduction to the Personal Computer
- Lab Procedures and Tool Use
- Computer Assembly
- Preventive Maintenance and Troubleshooting
- Windows Installation, Configuration and Management
- Network Concepts and Applied Networking
- Laptops, Mobile Devices, and Mobile Operating Systems
- Printers
- Security
- The IT Professional
- Advanced Troubleshooting

Integrated Academics

- English
- Math

College Credits

GCC Dual Enrollment -
CSN 150: Computer Repair

Licensing / Industry- Based Certifications

Prepare for CompTIA A+ Certification

Work-Based Learning

CTE programs bring students into the workplace for real life experiences. Businesses that support our Computer Technology students:

- Eastman Kodak
- Monroe 2 Orleans BOCES
- SunnKing
- OS-Cubed, Inc.

Articulation Agreements

- Genesee Community College
- SUNY Canton
- SUNY Morrisville



Career Outlook

All CTE programs correlate to many careers paths. Use the links below to explore more. One example:

Job Projections for Computer Support Specialist: 15% projected growth in New York State jobs 2016-2026.

New York State salary range:
\$38,100 entry level- \$69,850 experienced

Education Requirements: Computer Support Specialist positions may require post-secondary classes, an associate's degree, or a bachelor's degree.

Explore more:

<https://www.careerzone.ny.gov/>
<https://www.onetonline.org/find/>



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Employability Profile

<u>Career Readiness</u>	
Attendance	_____
Punctuality	_____
Appropriate Workplace appearance	_____
Takes Initiative	_____
High Quality of work	_____
Knowledge of workplace ethics	_____
Responsive to supervisor	_____
Effective Communication skills	_____
Solves problems	_____
Makes decisions	_____
Cooperates with others	_____
Resolves conflict	_____
Observes critically	_____
Takes responsibility for learning	_____
Reads with understanding	_____
Solves problems using math	_____
Complies with health and safety rules	_____
Uses technology appropriately	_____

<u>Career Readiness 2</u>	
Interpret SDS sheets	_____
Practice safe use of tools and test equipment	_____
Type a minimum of 40 wpm without looking at the keyboard	_____
Demonstrate financial literacy and responsibility	_____

<u>Computer Technology</u>	
Summarize A+ and other industry standard certifications	_____
Describe safe lab procedures and protocols	_____
Identify case, power supply motherboard, CPU, RAM, ROM characteristics and form factor	_____
Identify adapter cards and storage device characteristics	_____
Identify input and output device characteristics	_____
Identify data and electrical cables and connectors	_____
Employ appropriate electrostatic discharge precautions during PC disassembly	_____
Demonstrate step-by-step PC assembly	_____
Justify the use of anti-static mats and wrist-straps	_____
Evaluate the system BIOS, POST, beep-codes, and boot-strap sequence	_____
Describe preventive maintenance and trouble-shooting procedures	_____
Identify hard drive setup procedures and prepare the drive for use	_____
Select operating system based on customer needs	_____
Install and configure an operating system	_____
Describe command line and graphical user interfaces	_____
Examine boot sequence and registry files	_____
Contrast mobile devices and their operating systems	_____
Compare printer and scanner technologies	_____
Evaluate security threats and system protection methods	_____
Demonstrate professional communication skills	_____
Demonstrate customer service skills	_____
Effectively use call center phone, computer and ticket system	_____
Collect information from incoming service call/e-mail	_____

Walk customer through solution via phone	_____
Disseminate information to appropriate technicians	_____
Fix variety of incoming customer service tickets on site	_____
Gather customer feedback and reflect to improve service	_____

<u>Computer Networks</u>	
Identify server and client side computer hardware for networking	_____
Select network operating system based on customer needs	_____
Install and configure network operating system	_____
Describe the principles of communication and the need for networking	_____
Explain the binary representation of data and the ASCII code	_____
Describe communication on a local area network, physical and logical topologies	_____
Create a connection to a local area network and verify connectivity	_____
Relate network hardware, software, and protocols to the OSI and TCP/IP models	_____
Describe the purpose of internetworking and how to connect to the internet	_____
Describe how information travels over the internet and common applications	_____
Explain the network and transport layers of the OSI model as they relate to protocols	_____
Categorize routers, switches, and hubs according to OSI model layers	_____
Describe encapsulation as it relates to data, packets, and frames	_____
Design and plan local area networks based on specific specifications	_____
Identify IP Address classes and manipulate IP addresses and sub-net masks	_____
Compare wireless networks, protocols, security, and encryption techniques	_____
Produce UTP patch cable, terminate and test UTP cables, and select patch panels	_____
Setup and configure wireless access points and clients	_____
Explain wireless security methods, fire walls, and packet filtering	_____
Evaluate diagnostic methods and steps for resolving network problems	_____

Formulate best practices for trouble-shooting network problems	_____
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<u>Video Game Design</u>	
Define Game design and programming vocabulary	_____
List Computer languages used in game design	_____
Identify commands, buttons, and interface elements for the Gamemaker software	_____
Use game design tools to create simple games	_____
Explain Path movements and nodes	_____
Use algebra thinking skills with the simple games	_____
Create and animate sprites, custom sprites and moving targets.	_____
Modify, debug and fix game errors based on testing and customer feedback.	_____
Explain and perform critical evaluations of game build and synthesize possible improvements.	_____
Modify an existing game to include more interactivity	_____
Identify the life cycle of game design	_____
Program gravity simulation	_____
Apply isometric game concepts	_____
Create game refinements for a target market.	_____
Demonstrate knowledge of imbedded marketing and advertising in games.	_____
Use industry-standard documents to plan and build an original game..	_____
Solicit and accept constructive criticism on a video game design.	_____
Evaluate the quality of components of a game and explain the application of the game to fit the concept.	_____
Define common vocabulary used in video-design programming	_____
Interpret and apply the underlying programming code and syntax of a game engine.	_____
Critically evaluate my own work and the work of peers.	_____
Create a game according to required specifications	_____

Explain how game rules work with a user interface.	_____
Design a game world to test customer driven features.	_____
Explain the role of programmers on a game-design team.	_____
Demonstrate mastery and knowledge of game programmers.	_____