



*CONNECTING DIVERSE TECH TALENT FOR EVERY INDUSTRY*

# National Guideline Standards for Tech Support Specialist

# This document summarizes CompTIA's National Guideline Standards (NGS) for apprenticeship programs for Tech Support Specialist.

The NGS define:

- The competencies the apprentices will be trained on at the workplace (referred to as the work process schedule)
- The supplemental coursework the apprentice will complete (referred to as the related instruction outline)
- Some elements of the structure of an apprenticeship program

By using the NGS as a starting point, businesses and partners can accelerate program development to more quickly launch Registered Apprenticeship Programs for Tech Support Specialists. The NGS are:

- Designed to be **customizable** to meet the needs of each employer;
- **Competency-based** which provide more program flexibility;
- Complete with recommended minimum **coursework**; and
- **Complementary** and stackable.

## OCCUPATION DESCRIPTION

Tech Support Specialists are responsible for analyzing, troubleshooting, and rectifying day-to-day technology problems and challenges. This role may support internal clients (employees within the company) or external customers either in-person, on the phone, or via webchat. The specialist may focus on helping individuals and businesses better use or troubleshoot the company's own technical products, or the specialist may offer support to those using third-party hardware and software applications to do business. In the latter role, the Tech Support Specialist is the person one might call to troubleshoot one's Wi-Fi router when the internet is down, obtain online permissions to access accounts or files, or to set up a new employee's email and workstation. In short, Tech Support Specialists are the steady and calm go-to people for those of us who pull our hair out when something goes wrong with our computers.

For more information on CompTIA Apprenticeships for Tech or to request the full NGS documents approved by the U.S. Department of Labor, contact us at [ApprenticeshipsInIT@mahernet.com](mailto:ApprenticeshipsInIT@mahernet.com).

## Program Structure Elements

The NGS outline many important elements of a quality apprenticeship program, such as:

- Safety of apprentices
- Apprenticeship completion
- Mentoring
- Credit for previous experience
- Equal opportunity pledge

*Technical aspects of the NGS are detailed below.*

**Model:** Competency-based apprenticeship

**Duration:** 2,328 hours – not less than 2,000 hours of on-the-job learning, supplemented by the recommended minimum 328 hours of related instruction.

**Minimum Qualifications:** 10th grade math and English (apprenticeship program sponsors can identify additional minimum qualifications).

**Recommended Wage Schedule:** Apprentices shall be paid a progressively increasing schedule of wages based on the current industry average hourly mentor wage rate of \$25.00.

- First half of apprenticeship: industry average \$15.00
- Second half of apprenticeship: industry average \$18.00

**Recruitment:** Apprenticeship program sponsors recruit and select applicants either through an internal process for incumbent workers and/or make the apprenticeship opportunity available to the public and external organizations through outreach efforts, job fairs, collaborative partnerships, and web-based activities. Program sponsors can work with community-based organizations; educational institutions, such as community colleges, technical schools, and high schools; workforce organizations; or other partners to create appropriate outreach and positive recruitment efforts that would reasonably be expected to increase underrepresented population participation in the apprenticeship.

**U.S. Department of Labor Codes:**

- O\*NET-SOC code: **15-1232.00 - Computer User Support Specialists**
- Registered Apprentice Occupation Code (RAPIDS code): 2018CB

## Competencies

The competency sets include both technical and employability skills that the apprenticeship will learn at the workplace. The technical competencies align with designated CompTIA certifications and can be readily aligned with courses designed to prepare students for certification.

### PART 1 - BASIC HARDWARE

1. Demonstrate knowledge of various mobile device types, their features, and purpose.
2. Demonstrate skills required to manage and troubleshoot computer hardware and peripheral devices.
3. Demonstrate knowledge of common computer hardware and interfaces.
4. Demonstrate skills required to troubleshoot general computer hardware issues and printer problems.
5. Demonstrate skills required to configure peripherals, printers, and related applications to support external hardware.

### PART 2 - BASIC NETWORKING

6. Demonstrate knowledge of basic networking concepts (wired and wireless).
7. Demonstrate skills required to configure and troubleshoot device connectivity (LAN and Internet Access).

### PART 3 - CLOUD AND VIRTUALIZATION TECHNOLOGIES

8. Demonstrate knowledge of cloud computing concepts, including cloud storage and security configurations.
9. Demonstrate skills required to configure client-side virtualization, cloud storage applications, and file synchronization features.

### PART 4 - OPERATING SYSTEM BASICS

10. Demonstrate knowledge of important Microsoft Windows 10 operating system features and their purpose.
11. Demonstrate skills required to install, configure, and secure Microsoft Windows 10 operating system versions.
12. Demonstrate skills required to troubleshoot Microsoft Windows operating system problems.
13. Demonstrate knowledge of important Mac OS and Linux OS desktop operating system features and their purpose.
14. Demonstrate skills required to configure, secure, and troubleshoot various operating systems Mac OS and Linux OS.
15. Demonstrate skills required to troubleshoot mobile operating systems.

### PART 5 - IT SECURITY BASICS

16. Demonstrate knowledge of basic enterprise security concepts and wireless security protocols.
17. Demonstrate skills required to perform account management, configure wireless security, and detect and remove malware on workstations and mobile devices.
18. Demonstrate skills to troubleshoot common computer security issues.
19. Demonstrate skills required to troubleshoot application security issues.

## **PART 6 – GENERAL IT OPERATIONS**

20. Demonstrate knowledge of ticketing systems and documentation procedures.
21. Demonstrate knowledge of disaster recovery concepts and backup procedures.
22. Demonstrate knowledge of licensing and privacy and policy concepts, including how to address prohibited content.
23. Demonstrate knowledge of scripting languages, basic functions, and logic structures.

## **PART 7 – BUSINESS ACUMEN**

24. Demonstrate a basic understanding of the employer's corporate structure and business model, including its product and services portfolio, its primary customers, and its top competitors.
25. Demonstrate a basic knowledge of the employer's brand messaging, its value proposition in the marketplace, and key success metrics.

## **PART 8 – EMPLOYABILITY SKILLS**

26. Demonstrate skills to provide competent customer service using active listening and empathy during various interactions (e.g., in-person, over telephone, email, and chat).
27. Demonstrate ability to manage stress and other emotions in the workplace to reduce conflict, foster collaboration, and promote wellness.
28. Demonstrate skills required to take and give productive critical feedback.
29. Demonstrate skills required to problem-solve using critical thinking, clarifying questions, and knowing when to escalate a situation to a superior.
30. Demonstrate skills to explain complex issues to non-technical customers without jargon or blaming.
31. Demonstrate ability to conduct oneself with integrity, professionalism, and in accordance with organization policy and procedure.
32. Demonstrate skills to communicate with colleagues, managers, and end users effectively and clearly, in a timely manner.
33. Demonstrate ability to use language, tone of voice, and non-verbal communication to neutralize conflict in the workplace.
34. Demonstrate skills required to collaborate effectively with team members from across the organization.
35. Demonstrate ability to use respectful cross-cultural communication to work successfully across the organization and with diverse coworkers.
36. Demonstrate knowledge required to manage time effectively, minimizing distractions to maintain productivity, prioritize work appropriately, and meet deadlines with situational awareness.
37. Demonstrate ability to adapt to changing organizational landscape.

## Coursework (Related Instruction Outline)

Related instruction can be delivered to apprentices through in-house training, in a classroom, and/or online. The instruction can be provided by any combination of a community college, private industry training provider, sponsoring employer, or computer-based training. The NGS provide approximate number of hours for the related instruction. Course titles and classes may differ slightly from the descriptions below depending upon the related instruction provider.

RELATED INSTRUCTION DESCRIPTIONS	HOURS
<b>New Employee Skills</b> <ul style="list-style-type: none"> <li>• Safety training</li> <li>• Company orientation including privacy and confidentiality</li> <li>• Tools (internal messaging apps, office applications)</li> <li>• Sexual harassment prevention</li> </ul>	<b>15</b>
<b>Business Acumen</b> <ul style="list-style-type: none"> <li>• Company vision, mission, and key success metrics</li> <li>• The company's products and services and value proposition in the market</li> </ul>	<b>3</b>
<b>Employability Skills</b> <ul style="list-style-type: none"> <li>• Managing conflict</li> <li>• Being an effective team member</li> <li>• Business communication etiquette</li> <li>• Interpersonal communication</li> <li>• Intercultural communication</li> <li>• Critical thinking</li> <li>• Time management</li> <li>• Workplace wellness and managing stress</li> <li>• Handling workplace change</li> <li>• Leading across generations and personalities</li> <li>• Understanding diversity, equity, and inclusion fundamentals</li> </ul>	<b>60</b>
<b>Technical and Professional Skills - CompTIA A+ Coursework and Certification</b> <ul style="list-style-type: none"> <li>• Hardware – Identify, use, and connect hardware components and devices</li> <li>• Windows Operating System – Install and support Windows OS including command line and client support</li> <li>• Mobile Devices – Install and configure laptops and other mobile devices</li> <li>• Software Troubleshooting – Troubleshoot computer and mobile device issues including application security support</li> <li>• Networking – Explain types of networks and connections including TCP/IP, WIFI and SOHO</li> <li>• Other OS &amp; technologies – Understand Mac OS, Linux and mobile OS</li> </ul>	<b>220</b>

RELATED INSTRUCTION DESCRIPTIONS	HOURS
<ul style="list-style-type: none"> <li>• Hardware and Network Troubleshooting – Troubleshoot device and network issues</li> <li>• Security – Identify and protect against security vulnerabilities for devices and their network connections</li> <li>• Operational Procedures – Follow best practices for safety, environmental impacts, and communication and professionalism</li> <li>• CompTIA A+ CertMaster Learn, CompTIA Labs and CertMaster Practice (or similar courseware)</li> <li>• Pass CompTIA A+ exam</li> </ul>	
<b>Help Desk Ticketing</b>	<b>5</b>
<ul style="list-style-type: none"> <li>• Ticketing systems and documentation best practices</li> </ul>	
<b>Customer Engagement Skills – IBM Professional Certificate</b>	<b>25</b>
<p><i>(or similar customer service training)</i></p> <ul style="list-style-type: none"> <li>• Communication skills focused on clear concise communication and listening</li> <li>• Appropriate empathetic behavior such as such as patience, curiosity, and willingness to help</li> <li>• Problem solving to research an issue and help determine an appropriate resolution</li> <li>• Process adherence to ensure the proper flow and Service Level Agreements are met</li> </ul>	
<b>TOTAL MINIMUM HOURS:</b>	<b>328</b>

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