

APPENDIX A

**WORK PROCESS SCHEDULE
AND
RELATED INSTRUCTION OUTLINE**

<u>TITLE</u>	<u>O*NET-SOC CODE</u>	<u>RAPIDS CODE</u>
Computer Support Specialist (Existing Title: Help Desk Technician)	15-1151.00	1131HY
Network and Computer Systems Administrator (Existing Title: Network Support Technician)	15-1142.00	1132HY
Computer Systems Analyst	15-1121.00	2017HY
Computer Support Specialist – Desktop Support Technician	15-1151.00	2018HY

APPENDIX A

WORK PROCESS SCHEDULE
COMPUTER SUPPORT SPECIALIST
(Existing Title: Help Desk Technician)
O*NET-SOC CODE: 15-1151.00 RAPIDS CODE: 1131HY

This schedule is attached to and a part of these Standards for the above identified occupation.

1. TERM OF APPRENTICESHIP

The term of the occupation shall be one-year (1) with a minimum OJL attainment of 2008 OJL hours supplemented by the required hours of related instruction.

2. RATIO OF APPRENTICES TO JOURNEYWORKERS

Three (3) apprentices may be employed in each shop/department and/or jobsite employing a qualified journeyworker. (one (1) apprentice to one (1) journeyworker ratio)

3. APPRENTICE WAGE SCHEDULE & FRINGE BENEFITS

Apprentices shall be paid a progressively increasing schedule of wages and fringe benefits based on a percentage of the current journeyworker wage rate.

Example: Employer Sponsor may change per their terms and conditions of apprenticeship pay.

Computer Support Specialist (Help Desk Technician)	Number of hours	Percent of Journeyworker Wage & Fringe Benefits
Periods 1 to 4	968	50%
Period 5	1040	100%
Journeyworker Status Achieved (end of Period 5)	2008	100%

Employer Sponsor may choose alternate periods and may modify percent of journeyworker wage rate depending on the company's review policies.

4. SCHEDULE OF WORK EXPERIENCE (See attached Work Process Schedule)

5. SCHEDULE OF RELATED INSTRUCTION (See attached Related Instruction Outline)

WORK PROCESS SCHEDULE
 COMPUTER SUPPORT SPECIALIST
 (Existing Title: Help Desk Technician)
 O*NET-SOC CODE: 15-1151.00 RAPIDS CODE: 1131HY

Work Process and Classroom Training Duties and Hours		On-the-Job Learning Hours
Period 1 General Practices - Foundations		
1	Demonstrate a working understanding of the organization's structure, personnel rules, responsibilities and general understanding of work ethics, interpersonal communications and related policies. Understands and practices safety procedures and rules.	16 - 24
2	Demonstrate a working understanding of the goals, mission and vision	16 - 24
3	Demonstrate a working understanding of the organization's office tools such as copiers, fax machines etc. Create document using MS Word for management	16 - 24
Subtotal hours for Period 1		48 - 72
Period 2 General Practices - Computer Basics		
1	Demonstrate a working knowledge of the components of a computer and perform basic troubleshooting on communication issues within a computer.	120 - 160
	Example On-the-Job Duties: Identify the components of standard desktop personal computers. Install and configure computer components. Maintain and troubleshoot peripheral components. Install and configure operating systems.	
2	Demonstrate a working knowledge of the hardware components of a computer and perform basic troubleshooting on hardware related issues	120 - 160
	Example On-the-Job Duties: Install and configure system components. Troubleshoot system components.	
3	Demonstrate a working knowledge of basic networking, to allow the flow of information between multiple computers	120 - 160
	Example On-the-Job Duties: Manage, maintain, troubleshoot, install, operate and configure basic network infrastructure.	
Subtotal hours for Period 2		360 - 480
Period 3 General Practices - Security Basics		
1	Demonstrate knowledge of "best practices" in general network security	120 - 160
	Example On-the-Job Duties: Implement secure network communications. Designate how to manage public key infrastructure and certificates.	
2	Create a security awareness program in the organization which is used to communicate "best practices" for end users	120 - 160
	Example On-the-Job Duties: Establish security best practices for creating and running web-based applications.	
Subtotal hours for Period 3		240 - 320

Period 4 General Practice - Client Operating System Basics		
1	Install and configure client operating systems for the organization.	160 - 200
	Example On-the-Job Duties: Configure User Account Controls. Configure Local Security Policies. Configure Windows Firewall. Configure Windows Defender. Set indexing locations and modify advanced options. Create a library and set security permissions. Create and deploy a search connector.	
2	Maintain and troubleshoot a client operating systems for the organization.	160 - 200
	Example On-the-Job Duties: Prepare to deploy Windows 7 business desktops. Assess and resolve application compatibility issues with Windows 7. Determine the most appropriate method to deploy Windows 7 based upon specific business requirements. Design a standard Windows 7 image by assessing and evaluating the business requirements.	
	Subtotal hours for Period 4	320 - 400
Period 5 General Practice - Demonstrating Learned Competencies		
1	Utilize all of the skills taught during all of the GPs	1040 - 1112
	Example On-the-Job Duties: Maintain and troubleshoot installations of Microsoft Windows. Identify personal computer security concepts. Identify network technologies. Install and manage network connections. Perform networking technologies design principles including adherence to wiring standard and use of testing tools. Design network specific security practices, disaster recovery procedures, data storage technology implementation procedures.	
	Example On-the-Job Duties: Create procedures to enforce organizational security policies. Monitor the security infrastructure and manage security incidents. Use the built-in diagnostics tools to diagnose and resolve system problems. Collect system performance information using Performance Monitor. Configure the Action Center and view messages. Configure Device Manager and control device installation. Run Windows PowerShell commands. Configure Backup and Restore option. Configure the Sync Center.	
	Example On-the-Job Duties: Deploy Windows 7 by using WAIK. Deploy Windows 7 by using WDS. Deploy Windows 7 by using Lite Touch Installation. Deploy Windows 7 by using Zero Touch Installation. Migrate user state by using Windows Easy Transfer and User State Migration Tool 4.0. Design, configure, and manage the Windows 7 client environment. Plan and deploy applications and updates to Windows 7 client computers.	
	Total Work Process Hours (including Period 5 hours)	2008 - 2312

RELATED INSTRUCTION OUTLINE
 COMPUTER SUPPORT SPECIALIST
 (Existing Title: Help Desk Technician)
 O*NET-SOC CODE: 15-1151.00 RAPIDS CODE: 1131HY

Listed below are standard hours needed to complete Related Instruction in the Computer Support Specialist (Help Desk Technician) Apprenticeship Program training courses. Instructional hours may vary depending on the apprentice's competency and learning style through New Horizons Computer Learning Centers Mentored Learning training modality. Mastery of the subject matter is monitored through successfully completing certification exams.

Related Instruction Outline		Related Instruction Hours
Period 1: General Practices - Foundations		
1	New apprenticeship orientation session	2- 4
2	MS Word Level 1	Up to 8
Period 2: General Practices - Computer Basics		
1	CompTIA A+ Essentials	55
2	CompTIA A+ Practical Application	55
3	Comp TIA Network +	55
4	Passing the certification exams for CompTIA A+ Essentials	8
5	Passing the certification exams for CompTIA A+ Practical Application	8
6	Passing the certification exams for CompTIA Network +	8
Periods 3 and 4: General Practice – Security Basics and Client Operating System Basics		
1	CompTIA Security +	42
2	Microsoft 6292: Installing and Configuring Windows 7 Client	32
3	Microsoft 6294: Planning and Managing Windows 7 Desktop Deployments and Environments	55
4	Passing the certification exam for Microsoft 6292 (70-680)	8
5	Passing the certification exam for Microsoft 6294 (70-686)	8
Period 5: General Practice - Demonstrating Learned Competencies		
	No Additional Related Instruction	Not applicable
Related Instruction Suggested Hours:		271
Related Instruction Maximum Hours:		346

APPENDIX A

WORK PROCESS SCHEDULE
NETWORK AND COMPUTER SYSTEMS ADMINISTRATOR
(Existing Title: Network Support Technician)
O*NET-SOC CODE: 15-1142.00 RAPIDS CODE: 1132HY

This schedule is attached to and a part of these Standards for the above identified occupation.

1. TERM OF APPRENTICESHIP

The term of the occupation shall be one-year (1) with a minimum OJL attainment of 2060 OJL hours supplemented by the required hours of related instruction.

2. RATIO OF APPRENTICES TO JOURNEYWORKERS

Three (3) apprentices may be employed in each shop/department and/or jobsite employing a qualified journeyworker. (Three (3) apprentices to one (1) journeyworker ratio)

3. APPRENTICE WAGE SCHEDULE AND FRINGE BENEFITS

Apprentices shall be paid a progressively increasing schedule of wages and fringe benefits based on a percentage of the current journeyworker wage rate.

Example: Employer Sponsor may change per their terms and conditions of apprenticeship pay.

Network and Computer Systems Administrator	Number of hours	Percent of Journeyworker Wage & Fringe Benefits
Periods 1 to 6	1020	50 %
Period 7	1040	100 %
Journeyworker Status Achieved (end of Period 7)	2060	100 %

Employer Sponsor may choose alternate periods and may modify percent of journeyworker wage rate depending on the company's review policies.

4. SCHEDULE OF WORK EXPERIENCE (See attached Work Process Schedule)

5. SCHEDULE OF RELATED INSTRUCTION (See attached Related Instruction Outline)

WORK PROCESS SCHEDULE
 NETWORK AND COMPUTER SYSTEMS ADMINISTRATOR
 (Existing Title: Network Support Technician)
 O*NET-SOC CODE: 15-1142.00 RAPIDS CODE: 1132HY

Work Process and Classroom Training Duties and Hours		On-the-Job Learning Hours
Period 1 General Practices - Foundations		
1	Demonstrate a working understanding of the organization's structure, personnel rules, responsibilities and general understanding of work ethics, interpersonal communications and related policies. Understands and practices safety procedures and rules.	8 - 20
2	Demonstrate a working understanding of the goals, mission and vision	16 - 24
3	Demonstrate a working understanding of the organization's office tools such as copiers, fax machines etc.	16 - 24
Subtotal hours for Period 1		40 - 68
Period 2 General Practices - Computer Basics		
1	Demonstrate a working knowledge of the components of a computer and perform basic troubleshooting on communication issues within a computer.	80 - 160
	Example On-the-Job Duties: Identify the components of standard desktop personal computers. Install and configure computer components. Maintain and troubleshoot peripheral components. Install and configure operating systems.	
2	Demonstrate a working knowledge of the hardware components of a computer and perform basic troubleshooting on hardware related issues	60 - 120
	Example On-the-Job Duties: Install and configure system components. Troubleshoot system components.	
3	Demonstrate a working knowledge of basic networking, to allow the flow of information between multiple computers	80 - 160
	Example On-the-Job Duties: Manage, maintain, troubleshoot, install, operate and configure basic network infrastructure.	
Subtotal hours for Period 2		220 - 440
Period 3 General Practices - Security Basics		
1	Demonstrate knowledge of "best practices" in general network security.	80 - 160
	Example On-the-Job Duties: Implement secure network communications. Designate how to manage public key infrastructure and certificates.	
2	Create a security awareness program in the organization which is used to communicate "best practices" for end users	80 - 160
3	Create an asset tag inventory of all equipment, and verify following license agreements on software, under the jurisdiction of the IT Department	80 - 160

	Example On-the-Job Duties: Configure User Account Controls. Configure Local Security Policies. Configure Windows Firewall. Configure Windows Defender. Set indexing locations and modify advanced options. Create a library and set security permissions. Create and deploy a search connector.	
	Subtotal hours for Period 3	240 - 480
Period 4 Client Operating System Basics		
1	Install and configure client operating systems for the organization.	100 - 160
	Example On-the-Job Duties: Configure User Account Controls. Configure Local Security Policies. Configure Windows Firewall. Configure Windows Defender. Set indexing locations and modify advanced options. Create a library and set security permissions. Create and deploy a search connector.	
	Subtotal hours for Period 4	100 - 160
Period 5 Network Operating Systems		
1	Demonstrate a working knowledge of how to configure and troubleshoot network operating systems.	60 - 120
	Example On-the-Job Duties: Install and configure servers. Configure and troubleshoot domain name system (DNS) . Configure and manage Windows Internet Name Service (WINS) . Configure and troubleshoot Dynamic Host Configuration Protocol (DHCP). Configure and troubleshoot IPv6 Transmission Control Protocol/Internet Protocol (TCP/IP) . Configure and troubleshoot Routing and Remote Access. Install, configure, and troubleshoot the Network Policy Server Role service.	
2	Demonstrate a working knowledge of how to configure and troubleshoot Active Directory.	60 - 120
	Example On-the-Job Duties: Configure Active Directory Domain Services. Perform backup and restore, and monitor and troubleshoot Active Directory related issues.	
3	Demonstrate a working knowledge of how to configure and troubleshoot identity and access solutions.	60 - 120
	Example On-the-Job Duties: Configure, identity, and access solutions with Windows Server 2008 Active Directory. Describe identity and access solutions. Configure Active Directory Certificate Services. Deploy and manage certificates.	
4	Plan and administer Windows Server 2008	60 - 120
	Example On-the-Job Duties: Plan for both Windows Server installation and upgrades. Plan and implement network connectivity by using Internet Protocol version 4 (IPv4)-related technologies and plan a migration strategy to IPv6. Plan the deployment of Active Directory related services.	
	Subtotal hours for Period 5	240 - 480

Period 6 General Practices - Advanced Networking		
1	Perform basic Cisco Networking.	60 - 120
	Example On-the-Job Duties: Monitor and distribute traffic on an Ethernet Local Area Network (LAN) and identify switched LAN technology solutions to Ethernet networking issues.	
2	Interconnect Cisco devices.	60 - 120
	Example On-the-Job Duties: Configure and troubleshoot network and expand the switched network from a small LAN to a medium-sized LAN. Use multiple switches, to support VLANs, trunking, and spanning tree.	
3	Recognize security threats in a network.	60 - 120
	Subtotal hours for Period 6	180 - 360
Period 7 Demonstrating Learned Competencies Learned		
1	Utilize all of the skills taught during all of the GPs and document ways to improve the company's current Active Directory design.	1040 – 1044
	Example On-the-Job Duties: Configure Network Access Protection. Configure Internet Protocol security (IPsec). Monitor and troubleshoot IPsec. Configure and manage Distributed File System. Configure and manage storage technologies. Configure availability of network resources and content. Configure server security compliance.	
	Example On-the-Job Duties: Configure Active Directory Lightweight Directory Services. Configure Active Directory Federation Services. Configure Active Directory Rights Management Services. Maintain access management solutions. Troubleshoot identity and access solutions.	
	Example On-the-Job Duties: Create a plan for file and print services to meet an organization's printing, file storage, and access needs. Create a plan to secure the Windows Server environment. Create local and remote administration strategies for administering a Windows Server environment. Create a monitoring plan for the Windows Server environment. Create a plan that will help mitigate the effects of various disaster scenarios on the IT infrastructure. Create a plan for using virtualization in a Windows Server environment.	
	Design a system to identify fundamental concepts of computer security and security threats. Implement secure network communications. Manage public key infrastructure (PKI) and certificates.	
	Example On-the-Job Duties: Use the Cisco command-line interface to discover neighbors on the network and managing the router's startup and configuration procedures. Implement and troubleshooting Open Shortest Path First (OSPF) and Enhanced Interior Gateway Routing Protocol (EIGRP) routing. Access Control Lists, Network Address Translation (NAT) , Page Attribute Table (PAT) , and IPv6 Associated Certification.	

	Example On-the-Job Duties: Implement and troubleshooting OSPF and EIGRP routing. Access Control Lists, NAT, PAT, and IPv6 Associated Certification.	
	Subtotal hours for Period 7	1040 - 1044
	Total Work Process Hours	2060 - 3032

RELATED INSTRUCTION OUTLINE
 NETWORK AND COMPUTER SYSTEMS ADMINISTRATOR
 (Existing Title: Network Support Technician)
 O*NET-SOC CODE: 15-1142.00 RAPIDS CODE: 1132HY

Listed below are standard hours needed to complete Related Instruction in the Network and Computer Systems Administrator Apprenticeship Program training courses. Instructional hours may vary depending on the apprentice's competency and learning style through New Horizons Computer Learning Centers Mentored Learning training modality. Mastery of the subject matter is monitored through successfully completing certification exams.

Work Process and Classroom Training Duties and Hours		Related Supplemental Training Hours
Period 1 General Practices - Foundations		
1	New apprenticeship orientation session	2 - 4
2	Effective Use of Time Management	4 - 8
Period 2 General Practices - Computer Basics		
1	CompTIA A+ Essentials	32 - 55
2	CompTIA A+ Practical Application	32 - 55
3	CompTIA Network +	32 - 55
4	Passing the certification exams for CompTIA A+ Essentials	4 - 8
5	Passing the certification exams for CompTIA A+ Practical Application	4 - 8
6	Passing the certification exams for CompTIA Network +	4 - 8
Period 3 General Practices - Security Basics		
1	CompTIA Security +	32 - 55
2	Microsoft 6292: Installing and Configuring Windows 7 Client	21 -32
3	Passing the certification exam for Microsoft 6292 (70-680)	4 - 8
4	Microsoft 6421: Configuring and Troubleshooting a Windows Server 2008 Network Infrastructure	32 - 55
5	Microsoft 6425: Configuring and Troubleshooting Windows Server 2008 Active Directory Domain Services	32 - 55
6	Microsoft 6426: Configuring and Troubleshooting Identity and Access Solutions with Windows Server 2008 Active Directory	21 -32
7	Microsoft 6430: Planning and Administering Windows Server 2008	32 - 55
8	Passing the certification exam for Microsoft 6421 (70-642)	4 - 8
9	Passing the certification exam for Microsoft 6425 and 6426 (70-640)	4 - 8
10	Passing the certification exam for Microsoft 6430 (70-646)	4 - 8
Period 4 General Practices - Advanced Networking		
1	Cisco® ICND 1: Interconnecting Cisco Networking Devices (CCENT)	32 - 55
2	Cisco® ICND 2: Interconnecting Cisco Networking Devices (CCNA)	32 - 55
3	Employer Sponsor Elective Certification Class	32 - 55
4	Passing the certification exam for Cisco ICND 1	4 - 8
5	Passing the certification exam for Cisco ICND 2	4 - 8
6	Passing the Employer Sponsor Elective Certification Class	4 - 8
Minimum Related Instruction Hours		408
Maximum Related Instruction Hours		706

APPENDIX A

WORK PROCESS SCHEDULE
COMPUTER SYSTEMS ANALYST
O*NET-SOC CODE: 15-1121.00 RAPIDS CODE: 2017HY

This schedule is attached to and a part of these Standards for the above identified occupation.

1. TERM OF APPRENTICESHIP

The term of the occupation shall be one and one half years (18 Months) with a minimum OJL attainment of 2240 Hours supplemented by the required hours of related instruction.

2. RATIO OF APPRENTICES TO JOURNEYWORKERS

Three (3) apprentices may be employed in each shop/department and/or jobsite employing a qualified journeyworker. (Three (3) apprentices to one (1) journeyworker ratio)

3. APPRENTICE WAGE SCHEDULE

Apprentices shall be paid a progressively increasing schedule of wages based on a percentage of the current journeyworker wage rate.

Example: Employer Sponsor may change per their terms and conditions of apprenticeship pay.

Computer Systems Analyst	Number of hours	Percent of Journeyworker Wage
Period 1	40	
Period 2	220	12%
Period 3	940	54%
Period 4	1040	100%
Journeyworker Status Achieved	2240	

Employer Sponsor may choose alternate periods and may modify Percentage of journey level pay rate depending on their companies review policies.

4. SCHEDULE OF WORK EXPERIENCE (See attached Work Process Schedule)

5. SCHEDULE OF RELATED INSTRUCTION (See attached Related Instruction Outline)

WORK PROCESS SCHEDULE
 COMPUTER SYSTEMS ANALYST
 O*NET-SOC CODE: 15-1121.00 RAPIDS CODE: 2017HY

Work Process and Classroom Training Duties and Hours		On-the-Job Learning Hours
Period 1 General Practices - Foundations		
1	Demonstrate a working understanding of the organization's structure, personnel rules, responsibilities and general understanding of work ethics, interpersonal communications and related policies. Understands and practices safety procedures and rules.	8 - 20
2	Demonstrate a working understanding of the goals, mission and vision	16 - 24
3	Demonstrate a working understanding of the organization's office tools such as copiers, fax machines etc.	16 - 24
Period 2 General Practices - Computer Basics		
1	Demonstrate a working knowledge of the components of a computer and perform basic troubleshooting on communication issues within a computer.	80 - 160
	<u>Example On-the-Job Duties:</u> Identify the components of standard desktop personal computers. Install and configure computer components. Maintain and troubleshoot peripheral components. Install and configure operating systems.	
2	Demonstrate a working knowledge of the hardware components of a computer and perform basic troubleshooting on hardware related issues	60 - 120
	<u>Example On-the-Job Duties:</u> Install and configure system components. Troubleshoot system components.	
3	Demonstrate a working knowledge of basic networking, to allow the flow of information between multiple computers	80 - 160
	<u>Example On-the-Job Duties:</u> Manage, maintain, troubleshoot, install, operate and configure basic network infrastructure.	
Period 3 General Practices - Security Basics		
1	Demonstrate knowledge of "best practices" in general network security	80 - 160
	<u>Example On-the-Job Duties:</u> Implement secured network communications. Designate how to manage public key infrastructure and certificates.	
2	Create a security awareness program in the organization which is used to communicate "best practices" for end users	80 - 160
	<u>Example On-the-Job Duties:</u> Establish security best practices for creating and running web-based applications. Set a policy to enforce organizational security policies. Design systems for monitoring the security infrastructure and manage security incidents.	
3	Create an asset tag inventory of all equipment, and verify following license agreements on software, under the jurisdiction of the IT Department	80 - 160
	<u>Example On-the-Job Duties:</u> Configure User Account Controls. Configure Local Security Policies. Configure Windows Firewall. Configure Windows Defender. Set indexing locations and modify advanced options. Create a library and set security permissions. Create and deploy a search connector.	

Period 3 Client Operating System Basics		
1	Install and configure client operating systems for the organization.	100 - 160
Period 3 Network Operating Systems		
1	Demonstrate a working knowledge of how to configure and troubleshoot network operating systems	60 - 120
	<u>Example On-the-Job Duties:</u> Install and configure servers. Configure and troubleshoot DNS. Configure and manage WINS. Configure and troubleshoot DHCP. Configure and troubleshoot IPv6 TCP/IP. Configure and troubleshoot Routing and Remote Access. Install, configure, and troubleshoot the Network Policy Server Role service.	
2	Demonstrate a working knowledge of how to configure and troubleshoot Active Directory	60 - 120
	<u>Example On-the-Job Duties:</u> Configure Active Directory Domain Services. Perform backup and restore, and monitor and troubleshoot Active Directory related issues.	
3	Demonstrate a working knowledge of how to configure and troubleshoot identity and access solutions	60 - 120
	<u>Example On-the-Job Duties:</u> Configure, identity, and access solutions with Windows Server 2008 Active Directory. Describe identity and access solutions. Configure Active Directory Certificate Services. Deploy and manage certificates.	
4	Demonstrate a working knowledge of how to configure and troubleshoot IIS and terminal services	60 - 120
	<u>Example On-the-Job Duties:</u> Describe the IIS 7.0 modular architecture and workloads. Describe the three methods for installing IIS 7.0 and Install IIS 7.0 using each of the three identified methods.	
	<u>Example On-the-Job Duties:</u> Install and configure the TS role, TS settings, and TS Licensing Role. Identify when to use the per-user and per-device licensing modes, and identify the appropriate licensing scope and configure forest, domain, and workgroup licensing. Configure TS connection properties using TS console and Group Policy. Troubleshoot TS connection properties for a single user and multiple users. Identify the considerations for the types of applications that can be installed in a TS environment.	
5	Plan and administer Windows Server 2008	60 - 120
	<u>Example On-the-Job Duties:</u> Plan for both Windows Server installation and upgrades. Plan and implement network connectivity by using IPv4-related technologies and plan a migration strategy to IPv6. Plan the deployment of Active Directory related services.	
6	Design a Windows Server 2008 Network Infrastructure	60 - 120
	<u>Example On-the-Job Duties:</u> Describe key components of network infrastructure design. Describe how to design a secure network. Design a plan for allocating IP addresses to workstations and servers. Design an appropriate name resolution system that incorporates Domain Name System (DNS). Optimize a name resolution system that incorporates DNS and Windows Internet Name Service (WINS). Design a solution for network access using Network Access Protection (NAP) solution.	
7	Design a Windows Server 2008 Active Directory Infrastructure	60 - 120
	<u>Example On-the-Job Duties:</u> Design an Active Directory infrastructure and services in Windows Server.	

Period 3 General Practices - Advanced Networking		
1	Perform basic Cisco Networking	60 - 120
	<u>Example On-the-Job Duties:</u> Monitor and distribute traffic on an Ethernet LAN and identify switched LAN technology solutions to Ethernet networking issues.	
2	Interconnect Cisco devices	60 - 120
	<u>Example On-the-Job Duties:</u> Configure and troubleshoot network and expand the switched network from a small LAN to a medium-sized LAN. Use multiple switches, to support VLANs, trunking, and spanning tree.	
3	Recognize security threats in a network	60 - 120
Period 4 Demonstrating Learned Competencies Learned		
1	Utilize all of the skills taught during all of the GPs and document ways to improve the company's current Active Directory and network design	1040
	Resolve all of the issues on client machines in the final project	
	<u>Example On-the-Job Duties:</u> Configure Network Access Protection. Configure IPsec. Monitor and troubleshoot IPsec. Configure and manage Distributed File System. Configure and manage storage technologies. Configure availability of network resources and content. Configure server security compliance.	
	<u>Example On-the-Job Duties:</u> Configure Active Directory Lightweight Directory Services. Configure Active Directory Federation Services. Configure Active Directory Rights Management Services. Maintain access management solutions. Troubleshoot identity and access solutions.	
	<u>Example On-the-Job Duties:</u> Create a plan for file and print services to meet an organization's printing, file storage, and access needs. Create a plan to secure the Windows Server environment. Create local and remote administration strategies for administering a Windows Server environment. Create a monitoring plan for the Windows Server environment. Create a plan that will help mitigate the effects of various disaster scenarios on the IT infrastructure. Create a plan for using virtualization in a Windows Server environment.	
	<u>Example On-the-Job Duties:</u> Configure common features for IIS 7.0 and validate functionality of configured features.	
	<u>Example On-the-Job Duties:</u> Install and configure TS Web Access role service, and configure TS Web Access to make TS programs available through a Web site. Configure, monitor, and troubleshoot TS Gateway properties and connectivity issue. Resolve client connectivity issues by verifying end-user configuration. Configure and monitor resource allocation policies using WSRM based on the environment.	
	<u>Example On-the-Job Duties:</u> Design a system to identify fundamental concepts of computer security and security threats. Implement secure network communications. Manage public key infrastructure (PKI) and certificates.	
	<u>Example On-the-Job Duties:</u> Design a solution for operating system deployment and maintenance. Design the deployment of file services. Design print services in Windows Server 2008. Design high availability for applications and services.	
	<u>Example On-the-Job Duties:</u> Use the Cisco command-line interface to discover neighbors on the network and managing the router's startup and configuration procedures. Implement and troubleshooting OSPF and EIGRP routing. Access Control Lists, NAT, PAT, and IPv6 Associated Certification.	
	<u>Example On-the-Job Duties:</u> Implement and troubleshooting OSPF and EIGRP routing. Access Control Lists, NAT, PAT, and IPv6 Associated Certification.	
Total Work Process Hours		2240 - 3428

RELATED INSTRUCTION OUTLINE
 COMPUTER SYSTEMS ANALYST
 O*NET-SOC CODE: 15-1121.00 RAPIDS CODE: 2017HY

Listed below are standard hours needed to complete Related Instruction in the Computer Systems Analyst Apprenticeship Program training courses. Instructional hours may vary depending on the apprentice's competency and learning style through New Horizons Computer Learning Centers Mentored Learning training modality. Mastery of the subject matter is monitored through successfully completing certification exams.

Related Instruction Outline		Related Instruction Hours
Period 1: General Practices - Foundations		
1	New apprenticeship orientation session	2- 4
2	Effective Use of Time Management	8
Period 2: General Practices - Computer Basics		
1	Comp TIA A+ Essentials	55
2	Comp TIA A+ Practical Application	55
3	Comp TIA Network +	55
4	Testing	8
5	Testing	8
6	Testing	8
Period 3: General Practices - Security Basics		
1	CompTIA Security +	42
Client Operating System Basics		
2	Microsoft 6292: Installing and Configuring Windows 7 Client	32
3	Passing the certification exam for Microsoft 6292 (70-680)	8
Network Operating Systems		
4	Microsoft 6421: Configuring and Troubleshooting a Windows Server 2008 Network Infrastructure	55
5	Microsoft 6425: Configuring and Troubleshooting Windows Server 2008 Active Directory Domain Services	55
6	Microsoft 6426: Configuring and Troubleshooting Identity and Access Solutions with Windows Server 2008 Active Directory	32
7	6427A: Configuring and Troubleshooting Internet Information Services in Windows Server 2008	32
8	6428A: Configuring and Troubleshooting Windows Server 2008 Terminal Services	20
9	Microsoft 6430: Planning and Administering Windows Server 2008	55
10	Microsoft 6435A: Designing a Windows Server® 2008 Network Infrastructure	55
11	Microsoft 6436A: Designing a Windows Server 2008 Active Directory Infrastructure and Services	55
12	Testing	8
13	Testing	8
14	Testing	8
15	Testing	8
16	Testing	8

Period 4: General Practices - Advanced Networking		
1	Cisco® ICND 1: Interconnecting Cisco Networking Devices (CCENT)	55
2	Cisco® ICND 2: Interconnecting Cisco Networking Devices (CCNA)	55
3	Employer Sponsor Elective Certification Class	55
4	Passing the certification exam for Cisco ICND 1	8
5	Passing the certification exam for Cisco ICND 2	8
6	Passing the Employer Sponsor Elective Certification Class	8
Demonstrating Learned Competencies Learned		
7	Resolve all of the issues on client machines in the final project	8
Related Instruction Suggested Hours:		687
Related Instruction Maximum Hours:		879

*Maximum time frame allows for students to attend Mentored Learning training sessions, Traditional Instructor Led Training sessions, and/or On-line Live training sessions. Maximum time frame allows for students to repeat sessions where necessary for mastery of skills.

APPENDIX A

WORK PROCESS SCHEDULE
COMPUTER SUPPORT SPECIALIST - DESKTOP SUPPORT TECHNICIAN
O*NET-SOC CODE: 15-1151.00 RAPIDS CODE: 2018HY

This schedule is attached to and a part of these Standards for the above identified occupation.

1. TERM OF APPRENTICESHIP

The term of the occupation shall be one-year (1) with a minimum OJL attainment of 2128 OJL hours supplemented by the required hours of related instruction.

2. RATIO OF APPRENTICES TO JOURNEYWORKERS

Three (3) apprentices may be employed in each shop/department, and/or jobsite employing a qualified journeyworker. (3 to 1 ratio)

3. APPRENTICE WAGE SCHEDULE

Apprentices shall be paid a progressively increasing schedule of wages based on a percentage of the current journeyworker wage rate.

Example: Employer Sponsor may change per their terms and conditions of apprenticeship pay

Computer Support Specialist (Desktop Support Technician)	Number of hours	Percentage of journey-level rate
Period 1	48	
Period 2	360	19%
Period 3	680	51%
Period 4	1040	100%
Journeyworker Status Achieved	2128	

Employer Sponsor may choose alternate periods and may modify Percentage of journey level pay rate depending on their companies review policies.

4. SCHEDULE OF WORK EXPERIENCE (See attached Work Process Schedule)

5. SCHEDULE OF RELATED INSTRUCTION (See attached Related Instruction Outline)

WORK PROCESS SCHEDULE
 COMPUTER SUPPORT SPECIALIST - DESKTOP SUPPORT TECHNICIAN
 O*NET-SOC CODE: 15-1151.00 RAPIDS CODE: 2018HY

Work Process and Classroom Training Duties and Hours		On-the-Job Learning Hours
Period 1 General Practices - Foundations		
1	Demonstrate a working understanding of the organization's structure, personnel rules, responsibilities and general understanding of work ethics, interpersonal communications and related policies. Understands and practices safety procedures and rules.	16 - 24
2	Demonstrate a working understanding of the goals, mission and vision	16 - 24
3	Demonstrate a working understanding of the organization's office tools such as copiers, fax machines etc. Create document using MS Word for management	16 - 24
Subtotal hours for Period 1		48 - 72
Period 2 General Practices - Computer Basics		
1	Demonstrate a working knowledge of the components of a computer and perform basic troubleshooting on communication issues within a computer.	120 - 160
	Example On-the-Job Duties: Identify the components of standard desktop personal computers. Install and configure computer components. Maintain and troubleshoot peripheral components. Install and configure operating systems.	
2	Demonstrate a working knowledge of the hardware components of a computer and perform basic troubleshooting on hardware related issues	120 - 160
	Example On-the-Job Duties: Install and configure system components. Troubleshoot system components.	
3	Demonstrate a working knowledge of basic networking, to allow the flow of information between multiple computers	120 - 160
	Example On-the-Job Duties: Manage, maintain, troubleshoot, install, operate and configure basic network infrastructure.	
Subtotal hours for Period 2		360 - 480
Period 3 General Practices - Security Basics		
1	Demonstrate knowledge of "best practices" in general network security	120 - 160
	Example On-the-Job Duties: Implement secure network communications. Designate how to manage public key infrastructure and certificates.	
2	Create a security awareness program in the organization which is used to communicate "best practices" for end users	120 - 160
	Example On-the-Job Duties: Establish security best practices for creating and running web-based applications.	
Subtotal hours for Period 3		240 - 320

Period 4 General Practice - Client Operating System Basics		
1	Install and configure client operating systems for the organization.	160 - 200
	Example On-the-Job Duties: Configure User Account Controls. Configure Local Security Policies. Configure Windows Firewall. Configure Windows Defender. Set indexing locations and modify advanced options. Create a library and set security permissions. Create and deploy a search connector.	
2	Maintain and troubleshoot client operating systems for the organization.	160 - 200
	Example On-the-Job Duties: Prepare to deploy Windows 7 business desktops. Assess and resolve application compatibility issues with Windows 7. Determine the most appropriate method to deploy Windows 7 based upon specific business requirements. Design a standard Windows 7 image by assessing and evaluating the business requirements.	
Subtotal hours for Period 4		320 - 400
Period 5 General Practice - Demonstrating Learned Competencies		
1	Utilize all of the skills taught during all of the GPs	1040 - 1112
	Example On-the-Job Duties: Maintain and troubleshoot installations of Microsoft Windows. Identify personal computer security concepts. Identify network technologies. Install and manage network connections. Perform networking technologies design principles including adherence to wiring standard and use of testing tools. Design network specific security practices, disaster recovery procedures, data storage technology implementation procedures.	
	Example On-the-Job Duties: Create procedures to enforce organizational security policies. Monitor the security infrastructure and manage security incidents. Use the built-in diagnostics tools to diagnose and resolve system problems. Collect system performance information using Performance Monitor. Configure the Action Center and view messages. Configure Device Manager and control device installation. Run Windows PowerShell commands. Configure Backup and Restore option. Configure the Sync Center.	
	Example On-the-Job Duties: Deploy Windows 7 by using WAIK. Deploy Windows 7 by using WDS. Deploy Windows 7 by using Lite Touch Installation. Deploy Windows 7 by using Zero Touch Installation. Migrate user state by using Windows Easy Transfer and User State Migration Tool 4.0. Design, configure, and manage the Windows 7 client environment. Plan and deploy applications and updates to Windows 7 client computers.	
Total Work Process Hours (including Period 5 hours)		2008 - 2312

RELATED INSTRUCTION OUTLINE
COMPUTER SUPPORT SPECIALIST - DESKTOP SUPPORT TECHNICIAN
O*NET-SOC CODE: 15-1151.00 RAPIDS CODE: 2018HY

Listed below are standard hours needed to complete Related Instruction in the Computer Support Specialist - Desktop Support Technician Apprenticeship Program training courses. Instructional hours may vary depending on the apprentice's competency and learning style through New Horizons Computer Learning Centers Mentored Learning training modality. Mastery of the subject matter is monitored through successfully completing certification exams.

Related Instruction Outline		Related Instruction Hours
Period 1: General Practices - Foundations		
1	New apprenticeship orientation session	2-4
2	MS Word Level 1	Up to 8
Period 2: General Practices - Computer Basics		
1	CompTIA A+ Essentials	55
2	CompTIA A+ Practical Application	55
3	Comp TIA Network +	55
4	Passing the certification exams for CompTIA A+ Essentials	8
5	Passing the certification exams for CompTIA A+ Practical Application	8
6	Passing the certification exams for CompTIA Network +	8
Periods 3 and 4: General Practice – Security Basics and Client Operating System Basics		
1	CompTIA Security +	42
2	Microsoft 6292: Installing and Configuring Windows 7 Client	32
3	Microsoft 6294: Planning and Managing Windows 7 Desktop Deployments and Environments	55
4	Passing the certification exam for Microsoft 6292 (70-680)	8
5	Passing the certification exam for Microsoft 6294 (70-686)	8
Period 5: General Practice - Demonstrating Learned Competencies		
	No Additional Related Instruction	Not applicable
Related Instruction Suggested Hours:		271
Related Instruction Maximum Hours:		346