For L&I Staff Use Only

2/23/23 - EH	*Teri Gardner 2-23-23*
3/9/23 - EH	*Teri Gardner 3-10-23*
L&I Apprenticeship Consultant	L&I Admin

Department of Labor and Industries
Apprenticeship Section
PO Box 44530
Olympia WA 98504-4530

Request for Revision of Standards

TO: Washington State Apprenticeship & Training Council

FROM: **APPRENTI #1982**

Please update our Standards of Apprenticeship to reflect the following changes:

- Additions shall be underlined (underlined).
- Deletions shall be struck through (struck through).
- See attached.

Form must be signed by Committee Chair *and* Secretary *or* Program's Authorized Signer

☐ Chair ☒ Authorized Signer	Date 12/12/2022	☐ Secretary	Date
Print Name: Andrea Anderson		Print Name:	
Signature: *Andrea Anderson*		Signature:	

Approved By: **Washington State Apprenticeship & Training Council**
Signature of Secretary of the WSATC:
Date:

Attach additional sheets if necessary

Occupational Objective(s):	SOC#		Term
			[WAC 296-05-015]
CLOUD OPERATIONS SPECIALIST 1	~~15-1151.00~~	**15-1232.00**	**2000 HOURS**
CLOUD OPERATIONS SPECIALIST 2	~~15-1151.00~~	**15-1232.00**	**2000 HOURS**
CYBERSECURITY ANALYST	~~15-1122.00~~	**15-1212.00**	**2000 HOURS**
IT BUSINESS ANALYST	~~15-1199.08~~	**13-1111.00**	**2000 HOURS**
IT SUPPORT PROFESSIONAL	~~15-1151.00~~	**15-1232.00**	**2000 HOURS**
~~NETWORK OPERATIONS DEVELOPER~~	~~15-1143.00~~		**2000 HOURS**
DEVELOPER OPERATIONS SPECIALIST	**15-1241.00**		
NETWORK SECURITY ADMINISTRATOR	~~15-1142.00~~	**15-1244.00**	**2000 HOURS**
SOFTWARE ANALYST	~~15-1131.00~~	**15-1251.00**	**2000 HOURS**
SOFTWARE DEVELOPER 1	~~15-1133.00~~	**15-1252.00**	**2000 HOURS**
~~SOFTWARE DEVELOPER 2~~	~~15-1133.00~~		~~4000 HOURS~~
SYSTEM ADMINISTRATOR	~~15-1142.00~~	**15-1244.00**	**2000 HOURS**

II. MINIMUM QUALIFICATIONS:

Testing: ~~Meet the minimum score of 85 on the Apprenti online assessment found at www.apprenticareers.org.~~ **None.**

Other: **Candidates who are not United States citizens must demonstrate work eligibility through the duration of the term of apprenticeship.**

~~Note: For more information on how to apply for and enter Apprenti apprenticeship program or find information about education and training that is recognized by Apprenti please visit www.apprenticareers.org.~~

III. CONDUCT OF PROGRAM UNDER WASHINGTON EQUAL EMPLOYMENT OPPORTUNITY PLAN:

A. Selection Procedures:

1. **Apprenti has adopted the selection procedure outlined in WAC 296-05-417(1)(d) "alternate Selection procedure". Persons desiring to become a registered apprentice under Apprenti must first receive an offer of employment or be employed by an employer that is a Registered Training Agent for Apprenti. The candidates are to be selected by the individual employers in accordance with federal and state employment rules.**

~~2.~~ **Apprenti strives to increase diversity in the tech sector by providing Training Agents alternatives to traditional screening methods that disproportionately exclude diverse populations. Apprenti's screening process is designed to reduce bias in the traditional tech sector interviewing process and improve access to tech careers for women, people of color and other minorities, veterans and persons with disabilities. These candidates for apprenticeship typically do not fit the traditional model of already having four-year**

~~baccalaureate degrees in STEM fields. Registered training agents of Apprenti will actively recruit individuals who have been recommended to them by the Apprenti program.~~

~~3. Applicants who meet the minimum score of at least 85 move into the eligible candidate pool. Applicants not meeting the minimum score receive notification and are encouraged to access various free and paid resources available to them to improve their score. These resources include but are not limited to Khan Academy, tech apprenticeship preparatory programs, local Washington State Community and Technical College courses, coding academies, etc. They are also notified that they will be eligible to retake the assessment a second time – immediately if they choose. Those who do not meet the minimum score after the second test must wait 90 days before being allowed a third chance.~~

~~4. Eligible candidates are invited to interview with Apprenti. The first interview step confirms whether the applicant understands the opportunity and wishes to proceed. After a brief introduction about the apprenticeship program, the scope of the occupation, and the process, the candidate will be asked a uniform set of questions, and assessed using a standardized rubric.~~

> ~~A. Graduates of an articulated pre-apprenticeship may be granted interview priority with the employer. The candidate must still take the assessment and achieve the minimum score to be considered.~~

~~5.~~2. Persons selected as apprentices by an Approved Training Agent, and who provide verification of the minimum qualifications, can apply to the apprenticeship program. Apprentices will be informed of their rights and responsibilities, under the standards of apprenticeship established for the occupation, and then required to sign an apprenticeship agreement, ~~apprenticeship offer letter,~~ <u>a voluntary disability disclosure, Consent to Release Student Record Information form,</u> and optional media release.

B. <u>Equal Employment Opportunity Plan:</u>

Apprenti strives to increase diversity in the tech sector by providing Training Agents alternatives to traditional screening methods that disproportionately exclude underrepresented populations. Apprenti's screening process is designed to reduce bias in the traditional tech sector interviewing process and improve access to careers for women, people of color and other minorities, veterans and individuals with disabilities. These candidates for apprenticeship typically do not fit the traditional model of already having four-year baccalaureate degrees in STEM fields. To assess readiness for the rigors of apprenticeship and assist employers with sourcing untapped talent, Apprenti uses a basic assessment of math, critical thinking and logic, and soft skills found at <u>www.apprenticareers.org</u>. Registered training agents of Apprenti will actively recruit individuals who have been recommended to them by the Apprenti program.

In addition to providing quality training and an additional avenue to gain employment in technology careers, ~~one of the primary objectives of Apprenti is to increase minority, female, and veteran representation within the technology sector. To this end,~~ Apprenti commits to engage in the following activities:

4. **Provide women, minorities, veterans and persons with disabilities with direction on how to qualify for the Apprenti program by connecting them ~~10~~with external training opportunities, classes, employers and agencies that provide support services.**

IV. <u>TERM OF APPRENTICESHIP</u>:

The term of apprenticeship for all occupations covered by these standards shall be 2000 hours of reasonably continuous employment and demonstrated competency in <u>the work processes outlined in Section VIII.</u> ~~the occupational objectives and the following number of OJT Hours:~~

~~Cloud Operations Specialist 1 – 2000 hours~~
~~Cloud Operations Specialist 2 – 2000 hours~~
~~Cybersecurity Analyst – 2000 hours~~
~~IT Business Analyst – 2000 hours~~
~~IT Support Professional – 2000 hours~~
~~Network Operations Developer – 2000 hours~~
~~Network Security Administrator – 2000 hours~~
~~Technical Sales Specialist – 2000 hours~~
~~Software Analyst – 2000 hours~~
~~Software Developer 1 – 2000 hours~~
~~Software Developer 2 – 4000 hours~~
~~Systems Administrator – 2000 hours~~

V. <u>INITIAL PROBATIONARY PERIOD</u>:

- **[Please renumber section to number/letter/number where appropriate]**

C.

6) ~~Network Operations Developer~~ **<u>Developer Operations Specialist</u>………400**

~~11) Software Developer 2……….............800~~

VII. <u>APPRENTICE WAGES AND WAGE PROGRESSION</u>:

C. **Cloud Operations Specialist 1, Cloud Operations Specialist 2, IT Business Analyst, IT Support Professional, ~~Network Operations Developer~~ <u>Developer Operations Specialist</u>, Network Security Administrator, Technical Sales Specialist, Software Developer 1, Systems Administrator, Cybersecurity Analyst, and Software Analyst:**

~~For Software Developer 2:~~

~~Step~~	~~Hour Range and competency step~~	~~Percentage of journey-level wage rate*~~
~~1~~	~~0000 – 1000 hours~~	~~60%~~
~~2~~	~~1001 – 2000 hours~~	~~70%~~
~~3~~	~~2001 – 3000 hours~~	~~80%~~
~~4~~	~~3001 – 4000 hours~~	~~90%~~

VIII.   WORK PROCESSES:

- **[Please renumber section to number/letter/number where appropriate]**

- **[Please delete section VIII.A. in its entirety and replace with the following]**

A. Network Security Administrator   **Approximate Hours**

1. **Firewalls & Routers ...………………………………………………………………400**
   a. **Install and configure firewalls**
   b. **Install and configure routers**
   c. **Work directly with customers to resolve firewall and security issues**

2. **Security System Logs…………………………………………………………………....400**
   a. **Review monitoring & Security system logs (intrusion detection system, firewall system logs, etc) for issues**
   b. **Remediate identified issues**
   c. **Work with team to coordinate remediation of identified issues**
   d. **Track identified issues for resolution**
   e. **Troubleshoot identified issues**

3. **Security Services...400**
   a. **Configure & troubleshoot Intrusion Preventions Systems (IPS)**
   b. **Configure & troubleshoot Intrusion Detection Systems (IDS)**
   c. **Configure & troubleshoot URL Filters**
   d. **Configure & troubleshoot Distributed Denial of Service Protection (DDOS)**
   e. **Compose & write detailed design and customer documentation as required**

4. **Site to Site IPSVPN…………………………………………………………….....200**
   a. **Configure & troubleshoot Internet Protocol Security Virtual Private Networks (IPSVPN) on router platforms**

5. **VPN...200**
   a. **Install remote access Virtual Private Network (VPN) solutions**
   b. **Configure remote access Virtual Private Network (VPN) Solutions**
   c. **Troubleshoot remote access Virtual Private Network (VPN) solutions**

6. **DMVPN 200**
   a. **Configure Dynamic Multipoint Virtual Private Network (DMVPN) topologies**
   b. **Troubleshoot Dynamic (DMVPN) topologies**

7. **Perform other duties as assigned 200**

                                                                Total Hours: 2000

Competency Schedule:

Competency Step	**Required Competency for Progression**

Pre-OJT RSI to OJT	Completion of RSI with a grade of 75% or greater
Step 1 to Step 2	Apprentice must meet or exceed 60% of competencies listed in the work processes.
Graduation	Apprentice must meet or exceed 85% of competencies listed in the work processes.

- **[Please delete competency schedule for VIII.B. and replace with the following]**

B. **Software Developer 1**

~~Competency Schedule:~~

~~Competency Step~~	~~Required Competency for Progression~~
~~1. Pre-OJT RSI to OJT~~	~~Minimum grade of 75% in RSI coursework~~
~~2. Step 1 to Step 2~~	~~Minimum 60% code submission acceptance rate~~
~~3. Graduation~~	~~Minimum 80% code submission acceptance rate~~

Competency Schedule:

Competency Step	Required Competency for Progression
1. Pre-OJT RSI to OJT	Completion of RSI with a grade of 75% or greater
2. Step 1 to Step 2	Apprentice must meet or exceed 60% of competencies listed in the work processes.
3. Graduation	Apprentice must meet or exceed 85% of competencies listed in the work processes.

- **[Please delete section VIII.C. in its entirety, including the Competency Schedule]**

- **[Please delete section VIII.D. in its entirety and replace with the following]**

D. **IT Support Professional:**   **Approximate Hours**

   1. **Hardware** **400**
      a. **Laptop and desktop component installations and configuration**
      b. **Audio & Video installation and configuration**
      c. **Peripheral installation and configuration**
      d. **Cloud infrastructure architecture configuration**
      e. **Troubleshoot hardware issues**
      f. **Perform inventory management and asset control**

2. Networking **500**
    a. Wired network device installation and configuration
    b. Wireless network device installation and configuration
    c. Network service management
    d. Monitor network performance and security
    e. Troubleshoot network issues

3. Software **500**
    a. Operation system deployment and configuration
    b. Cloud/hybrid cloud migration and configuration
    c. Desktop software application installation
    d. Malware client security software management
    e. Backup and restore data
    f. User access control and permissions
    g. Troubleshoot operation system and software application issues

4. Workflow Management & Organizational Processes **400**
    a. Open, manage and close trouble tickets
    b. Purchasing and license management
    c. Research issues resolution
    d. Document issue resolution

5. Perform other duties as assigned **200**

Total Hours: 2000

Competency Schedule:

Competency Step	Required Competency for Progression
1. Pre-OJT RSI to OJT	**Completion of RSI with a grade of 75% or greater**
2. Step 1 to Step 2	**Apprentice must meet or exceed 60% of competencies listed in the work processes.**
3. Graduation	**Apprentice must meet or exceed 85% of competencies listed in the work processes.**

- **[Please delete section VIII.E. in its entirety and replace with the following]**

E. Systems Administrator: **Approximate Hours**

    1. Server Administrator **500**

      a. **Deploy and manage Linux distributions/ Windows Server**
      b. **Update and monitor system components**
      c. **Storage solution management**
      d. **Manage file and print services**
      e. **Security encryption and audit configuration**
      f. **Monitor and configure network services**
      g. **Create availability and disaster recovery plan(s)**
      h. **Troubleshoot server issues and package compatibility**

2. **Software and Network Management...500**
      a. **Implement and manage network solutions**
      b. **Installing/uninstalling using package managers**
      c. **Building software components from source repositories**
      d. **Clustering and virtualization options for Linux systems**
      e. **Configuring virtual machines using e.g., VirtualBox, VMWare, Xen**
      f. **Balance network load**

3. **Users and Group Management...300**
      a. **Configure domain controller(s)**
      b. **Implement and manage group policy**
      c. **Maintain active directory domain services**
      d. **Supervise and monitor active directory certificate and rights management**

4. **Mail, Directory, and Services Collaboration...200**
      a. **Plan and configure mailbox and client access servers**
      b. **Manage groupware and services (e.g., Zimbra, Horde, OpenXchange)**

5. **Ticket Management and Documentation 300**
      a. **Work within existing task assignment and record-keeping systems**
      b. **Open, respond, manage, and close tickets**
      c. **Document resolution information**
      d. **Update documentation on configuration and status of servers**
      e. **Research past resolutions and clean up notes/records on architecture and data flow diagrams or related documents**

6. **Perform other duties as assigned...200**

Total Hours: 2000

Competency Schedule:

Competency Step	Required Competency for Progression
1. Pre-OJT RSI to OJT	**Completion of RSI with a grade of 75% or greater**
2. Step 1 to Step 2	**Apprentice must meet or exceed 60% of competencies listed in the work processes.**
3. Graduation	**Apprentice must meet or exceed 85% of competencies listed in the work processes.**

- **[Please delete section VIII.F. in its entirety and replace with the following]**

F. Cloud Operations Specialist 1:   **Approximate Hours**

 1. **Customer Support** **800**
  a. **Communicate with customers to identify and scope issues**
  b. **Determine appropriate resolution tier (resolve or escalate)**
  c. **Gather information from customers as needed to demonstrate the problem or determine appropriate fix**
  d. **Test and implement fix**
  e. **Manage customer account access and authenticate identity**
  f. **Communicate with customers on resolution, how to avoid recurrence, and any future action items**

 2. **Cloud Services Management** **600**
  a. **Create and configure hosting, storage, and computing accounts in cloud services**
  b. **Access and transfer data between systems and services**
  c. **Write basic scripts to facilitate configuration and updates to cloud accounts**
  d. **Use shell scripts to automate common tasks**
  e. **Troubleshoot availability and performance issues**
  f. **Coordinate with engineering team for more complex issues requiring escalation**

 3. **Ticket Management and Documentation** **400**
  a. **Work within existing task assignment and record-keeping systems**
  b. **Open, respond, manage, and close tickets**
  c. **Document resolution information**
  d. **Update documentation on configuration and status of servers**
  e. **Research past resolutions and clean up notes/records on architecture and data flow diagrams or related documents**

 4. **Perform other duties as assigned** **200**

               Total Hours: 2000

Competency Schedule:

Competency Step	Required Competency for Progression
1. **Pre-OJT RSI to OJT**	**Completion of RSI with a grade of 75% or greater**
2. **Step 1 to Step 2**	**Apprentice must meet or exceed 60% of competencies listed in the work processes.**
3. **Graduation**	**Apprentice must meet or exceed 85% of competencies listed in the work processes.**

- **[Please delete section VIII.G. in its entirety and replace with the following]**

G. IT Business Analyst: **Approximate Hours**

1. **IT Business Needs Assessment and Analysis 300**
   a. **Implement and manage a service request system or other task assignment tool**
   b. **Build business cases, identify requirements, and gather user stories/cases**
   c. **Understand and advise on business and legal risks of data collection and presentation as appropriate, including assessment of internal/external stakeholders and scope of release of information reported**
   d. **Interact with relevant stakeholders to define scope, parameters, and types of data needed to build reports or identify vendor solutions**
   e. **Delineate roles and access/clearance to any data sources that may be needed**
   f. **Research and evaluate industry trends, best practices, and new technologies and integrate this knowledge into current and future work activities**
   g. **Create and maintain project and process documentation**

2. **Data and Process Modeling and Reporting 500**
   a. **Develop and design information gathering, analysis, and insight processes and required data/information inputs**
   b. **Apply Agile methodology to process mapping and project planning**
   c. **Create and maintain databases and the reporting tools that feed them**
   d. **Administer and maintain database server tools, security, and user accounts**
   e. **Manipulate data with SQL queries**
   f. **Work with data warehouse / ETL (extraction, transformation, and load) tools and packages to ensure integrity, transaction monitoring, and performance of reports/models**
   g. **Map and integrate data relationships and cross-reference with key values or other unique identifiers**

3. **Data Visualization and Analysis 800**
   a. **Install and configure data reporting/business intelligence tools**
   b. **Connect and merge data sources**
   c. **Verify data integrity and accuracy**
   d. **Cognitive and perceptually-aware design of data visualizations**
   e. **Build charts and representations of data in static and interactive environments**
   f. **Identify and highlight key metrics/performance indicators/decision triggers**
   g. **Configure hierarchies, filters, and other action parameters**
   h. **Produce and present visualizations and business intelligence insight reports in multiple formats as required (e.g., PDF, PowerPoint, animation/video, text narrative)**

4. **Vendor Solutions Management..200**
   a. **Given use cases and business needs, assess software/service vendor options.**
   b. **Advise or perform requirements elicitation, bid/RFP processes.**
   c. **Deploy production software and services**
   d. **Conduct user acceptance testing of chosen solution**

5. **Perform other duties as assigned 200**

Total Hours: 2000

Competency Schedule:

Competency Step	Required Competency for Progression
Pre-OJT RSI to OJT	Completion of RSI with a grade of 75% or greater
Step 1 to Step 2	Apprentice must meet or exceed 60% of competencies listed in the work processes
Graduation	Apprentice must meet or exceed 85% of competencies listed in the work processes

- **[Please delete section VIII.H. in its entirety and replace with the following]**

H. Cloud Operations Specialist 2:   **Approximate Hours**

1. **Client Sales/account management**...**200**
   a. **Gather information on existing solution/application**
   b. **Provide information on available cloud products and services**
   c. **Develop migration plans for new customers**

2. **Project Management** **300**
   a. **Estimate timelines to completion**
   b. **Track and coordinate activities of service units (technical, accounting, contracting, etc.)**
   c. **Report on status and outcomes internally and externally**

3. **Customer Support** **200**
   a. **Communicate with customers to identify and scope issues**
   b. **Determine appropriate resolution tier (resolve or escalate)**
   c. **Gather information from customers as needed to demonstrate the problem or determine appropriate fix**
   d. **Test and implement fix**
   e. **Manage customer account access and authenticate identity**
   f. **Communicate with customers on resolution, how to avoid recurrence, and any future action items**

4. **Cloud Services Management**..**700**
   a. **Create and configure hosting, storage, and computing accounts in cloud services**
   b. **Access and transfer data between systems and services**
   c. **Write basic scripts to facilitate configuration and updates to cloud accounts**
   d. **Use shell scripts to automate common tasks**
   e. **Troubleshoot availability and performance issues**
   f. **Coordinate with engineering team for more complex issues requiring escalation**

5. **Ticket Management and Documentation**...**400**
   a. **Work within existing task assignment and record-keeping systems**
   b. **Open, respond, manage, and close tickets**
   c. **Document resolution information**

     d. **Update documentation on configuration and status of servers**
     e. **Research past resolutions and clean up notes/records on architecture and data flow diagrams or related documents**

6. **Perform other duties as assigned** **200**

                                                          Total Hours: 2000

Competency Schedule:

Competency Step	Required Competency for Progression
Pre-OJT RSI to OJT	**Completion of RSI with a grade of 75% or greater**
Step 1 to Step 2	**Apprentice must meet or exceed 60% of competencies listed in the work processes**
Graduation	**Apprentice must meet or exceed 85% of competencies listed in the work processes**

- **[Please delete section VIII.I. in its entirety and replace with the following]**

I.   **Developer Operations Specialist:**   **Approximate Hours**

1. **Network Management** **600**
     a. **Maintain networks by providing critical network support to diagnose, mitigate impact, and resolve large-scale networking events**
     b. **Troubleshoot network routing, interconnectivity, platforms, performance, and configurations issues, including necessary low level application interaction, Unix systems, and new age networking software tools**
     c. **Lead network projects in the areas of network sustaining engineering, network**
     d. **deployment/implementation, network scaling, technology refresh, best practices application, and/or network optimization**
     e. **Partner with Network/Infrastructure engineers to resolve and plan for service issues and roll out new designs and products**
     f. **Assure compliance with standards and policies**

2. **Cloud Services Management** **300**
     a. **Access and transfer data between systems and services**
     b. **Troubleshoot availability and performance issues**
     c. **Work in and with data center teams to resolve configuration and onsite hardware issues**

3. **Software Development** **300**
     a. **Develop, update, and customize scripts for deploying configurations across devices**
     b. **Automate standard and routine processes using scripts**
     c. **Retrieve and manipulate data files such as logs to monitor performance**

4. **Ticket Management and Documentation** **400**
     a. **Work within existing task assignment and record-keeping systems**
     b. **Open, respond, manage, and close tickets**
     c. **Document resolution information**
     d. **Update documentation on configuration and status of servers**

      e. Research past resolutions and clean up notes/records on architecture and data flow diagrams or related documents

      f. Develop and present on policies and standard operating procedures

5. DevOps Process Implementation **200**
      a. Develop, deliver/deploy, and maintain applications
      b. Automate build, test, and packaging code
      c. Develop CICD Pipeline to deploy applications
      d. Monitor environments and specific applications
      e. Integrate testing protocols and security measures within CICD pipeline
      f. Package containerized applications on single node and/or in a cluster

6. Perform other duties as assigned **200**

Total Hours: 2000

Competency Schedule:

Competency Step	Required Competency for Progression
Pre-OJT RSI to OJT	**Completion of RSI with a grade of 75% or greater**
Step 1 to Step 2	**Apprentice must meet or exceed 60% of competencies listed in the work processes**
Graduation	**Apprentice must meet or exceed 85% of competencies listed in the work processes**

- **[Please delete section VIII.J. in its entirety and replace with the following]**

J. Technical Sales Specialist: **Approximate Hours**

1. Client Solicitation **700**
      a. Manage leads in a timely manner across wide geographical boundaries
      b. Conduct discussion to learn and qualify opportunities
      c. Understand customer pain points
      d. Gather technical requirements
      e. Correlate business value to customer needs

2. Develop Technical Solutions **500**
      a. Gather information on existing solution/application
      b. Provide information on available cloud products and services
      c. Develop migration plans for new customers

3. Project Management **300**
      a. Estimate timelines to completion
      b. Track and coordinate activities of service units (technical, accounting, contraction, etc.)
      c. Report on status and outcomes internally and externally

4. Ticket Management and Documentation **300**
      a. Work within existing task assignment and record-keeping systems.

b. **Open, respond, manage, and close tickets**
c. **Document resolution information**
d. **Update documentation on configuration and status of servers**
e. **Research past resolutions and clean up notes/records on architecture and data flow diagrams or related documents**
f. **Develop and present on policies and standard operating procedures**

5. **Perform other duties as assigned** **200**

Total Hours: 2000

Competency Schedule:

Competency Step	Required Competency for Progression
Pre-OJT RSI to OJT	**Completion of RSI with a grade of 75% or greater**
Step 1 to Step 2	**Apprentice must meet or exceed 60% of competencies listed in the work processes**
Graduation	**Apprentice must meet or exceed 85% of competencies listed in the work processes**

- **[Please delete section VIII.K. in its entirety and replace with the following]**

K. **Cybersecurity Analyst:**   **Approximate Hours**

1. **Design, Build, and Test Networks** **200**
   a. **Assist in the selection of appropriate design solutions to ensure compatibility of system components**
   b. **Assist in developing security policies and protocols, including network security policies and protocols**
   c. **Develop plans to safeguard computer files against accidental or unauthorized modification, destruction, or disclosure and to meet emergency data processing needs**
   d. **Perform risk assessments and execute tests of data processing system to ensure functioning of data processing activities and security measures**
   e. **Assist in the development of computer or information security policies or procedures**

2. **Configure and Protect Cloud Data Stores and Local Databases** **200**
   a. **Monitor current reports of computer viruses to determine when to update virus protection systems**
   b. **Apply cybersecurity functions (e.g. encryption, access control, and identity management) to secure confidential information as it is being transmitted and to keep out tainted digital transfers**
   c. **Monitor use of data files and regulate access to safeguard information in computer files**
   d. **Use Intrusion Detection Systems (IDS), firewalls, and honeypots**

3. <u>Analyze Security Requirements and Configure Networked Systems</u>.....................**400**
   a. <u>Communicate with stakeholders to identify and scope issues</u>
   b. <u>Analyze organization's cyber defense policies and configurations and evaluate compliance with regulations and organizational directives</u>
   c. <u>Implement security configuration parameters on network devices and other technologies</u>
   d. <u>Identify potential conflicts with implementation of any cyber defense tools (e.g. tool and signature testing and optimization).</u>

4. <u>Monitor and Configure Access Control, Authentication, Encryption, and Cryptographic Systems, including Intrusion Detection and Penetration Testing</u>..........................**300**
   a. <u>Modify computer security files to incorporate new software, correct errors, or change individual access status</u>
   b. <u>Test computer system operations</u>
   c. <u>Monitor and configure access control systems</u>
   d. <u>Monitor and configure authentication systems</u>
   e. <u>Monitor and configure cryptographic systems</u>
   f. <u>Coordinate with engineering team for more complex issues requiring escalation</u>

5. <u>Conduct security and risk assessments and system audits</u>.......................................**300**
   a. <u>Implement security measures</u>
   b. <u>Conduct security assessments and coordinate with team to correlate threat assessment data</u>
   c. <u>Perform risk and vulnerability assessments of relevant technology focus areas</u>
   d. <u>Maintain deployable cyber defense audit toolkit and conduct system audits</u>

6. <u>Develop and implement incident response and business continuity plans</u> **400**
   a. <u>Confer with users to discuss issues such as computer data access needs, security violations, and programming changes</u>
   b. <u>Develop incident response plan</u>
   c. <u>Implement incident response plan</u>
   d. <u>Develop and implement a business continuity plan</u>

7. <u>Perform other duties as assigned</u> **200**

Total Hours: 2000

<u>Competency Schedule:</u>

Competency Step	Required Competency for Progression
<u>Pre-OJT RSI to OJT</u>	<u>Completion of RSI with a grade of 75% or greater</u>
<u>Step 1 to Step 2</u>	<u>Apprentice must meet or exceed 60% of competencies listed in the work processes</u>
<u>Graduation</u>	<u>Apprentice must meet or exceed 85% of competencies listed in the work processes</u>

- **[Please delete section VIII.L. in its entirety and replace with the following]**

L. Software Analyst: **Approximate Hours**

1. **Project Definition**..**100**
   a. **Identify and capture stakeholder requirements using customer interviews and surveys**
   b. **Build multiple use cases to describe each action that a user will take in the new system**
   c. **Understand and contribute to requirement specification documents.**
   d. **Interpret functional requirements**
   e. **Participate in team meetings**
   f. **Estimate effort and complexity for assignments**
   g. **Prioritize assigned work**
   h. **Participate in code quality review**
   i. **Write acceptance criteria**
   j. **Demo software functionality using wireframes or mockup prototyping**

2. **Software Design** **100**
   a. **Work with stakeholders to understand requirements**
   b. **Specify and scope hardware and system requirements**
   c. **Identify and mitigate security threats and vulnerabilities that may arise from interactions with other systems, external and legacy code.**
   d. **Identify logic changes**
   e. **Identify user interface changes**
   f. **Identify process changes**
   g. **Identify data changes**
   h. **Track assigned work responsibilities across team members**

3. **Development and Implementation** **400**
   a. **Develop and write software code**
   b. **Complete programming tasks**
   c. **Configure programming environment**
   d. **Maintain existing feature(s)**
   e. **Create new feature(s) as directed by senior team members**
   f. **Write efficient queries to produce desired results**
   g. **Implement computational algorithms for workflows and calculations**
   h. **Write code comments and annotations or engage functional programming techniques as appropriate**
   i. **Implement design patterns**
   j. **Create necessary data models**

4. **Software Testing** **800**
   a. **Work with development team to create test plans**
   b. **Perform unit testing and fix errors or bugs in a test-driven development model**
   c. **Write automated tests**
   d. **Select manual/black box testing strategies**
   e. **Supervise user/customer beta testing and feedback**
   f. **Identify and prioritize (find and fix) flaws, bugs, and design problems**

g. **Replicate and validate problems**
h. **Gather related information and data about the problems**
i. **Select a resolution strategy**
j. **Modify software programs to improve performance and/or debug**
k. **Execute security tests**
l. **Execute unit test functionality**
m. **Execute integration tests**
n. **Execute user acceptance tests**
o. **Test software performance**
p. **Perform revision, repair, or expansion of existing programs to increase operating efficiency or adapt to new requirements**

5. Deployment and Maintenance..**400**
   a. **Maintain version control and code repositories**
   b. **Resolve merge conflicts**
   c. **Create and update technical and user documentation**
   d. **Perform training for end users**
   e. **Package and deploy applications (publish to server)**
   f. **Review logs, telemetry, and user feedback reports to identify potential issues or flaws**
   g. **Keep apprised of changes to external systems that may break functionality or compatibility with the software product, such as APIs or data sources**
   h. **Ensure compliance with licensing requirements**
   i. **Ensure distribution platform operation (e.g., website, kiosk, retail distributors)**

6. **Other duties as assigned** **200**

Total Hours: 2000

Competency Schedule:

Competency Step	Required Competency for Progression
Pre-OJT RSI to OJT	**Completion of RSI with a grade of 75% or greater**
Step 1 to Step 2	**Apprentice must meet or exceed 60% of competencies listed in the work processes**
Graduation	**Apprentice must meet or exceed 85% of competencies listed in the work processes**

IX.   RELATED/SUPPLEMENTAL INSTRUCTION:

B.
[Please renumber]

1. **Network Security Administrator**   ~~372~~ **370**

2. ~~Software Developer 2~~
   a.   ~~Steps 1 and 2, 0 to 2000 hours   728~~
   b.   ~~Steps 3 and 4, 2000 to 4000 hours   392~~

4. IT Support Professional   ~~280~~ **308**

~~9.   Network Operations Developer~~   ~~520~~
9.   **Developer Operations Specialist**   **640**

11. Cybersecurity Analyst   ~~380~~ **400**

X.   ADMINISTRATIVE/DISCIPLINARY PROCEDURES:

A.3. [Please adjust citations to proper number/letter/number format ad renumber where needed]

3. **Evaluation and progression of the apprentice during OJT shall consist of the following steps:**
    a. Apprentices and journeyworkers (mentors) will use the competency checklist to discuss and evaluate progress during regular check-in meetings and will update the competency checklist as appropriate.
    b. The Journeyworker (mentor) and/or manager reports apprentice progress to Apprenti at the 2-, 5- and 10-month check in with Apprenti.
    c. The Journeyworker (mentor) and/or manager will provide Apprenti with confirmation of the apprentice's successful completion of competency objectives.
    d. The Apprenticeship Coordinator will review all relevant information to ensure the apprentice has met all requirements of the apprenticeship before recommending approval to the Apprenticeship Committee.

B.3. [Please adjust citations to proper number/letter/number format and renumber where needed]

When violations of these Standards by apprentices and/or employers occur, they will be acted upon by the Apprenticeship Coordinator and/or the Committee as outlined below.

1.   **The Apprenticeship Coordinator will first and always attempt to resolve issues by communicating with all parties concerned.**

~~1.~~ **2.** Apprentices shall report their OJT hours to the Apprenti program electronically at least once per week. Failure to report OJT hours in a timely manner may result in disciplinary action up to and including cancellation.

3.   Apprentices shall attend at least 90% of RSI. Apprentices shall be on time to class. Unexcused absences greater than 10% of RSI or repeated tardiness may result in disciplinary action up to and including cancellation **of the apprenticeship agreement**. Apprentices may request an excused absence by contacting both Apprenti and their instructor in advance. Excused absences require the approval of Apprenti. Apprenti is not obligated to approve excused absence requests; approval decisions will take into account factors including the reason for the request, number of requests, nature of work missed, make-up assignment plans, and apprentice performance.

4.   Apprentices are required to successfully complete competency assessments or benchmarks on time. Deadlines for the completion of competencies shall be provided

in writing to the apprentice at the time of their registration. Competency completion deadlines may be extended but will never be advanced.

a.   ~~In the event an apprentice is unsuccessful in completing a competency requirement to progress to a new wage step, Apprenti and the registered training agent shall work together to provide additional educational support in the deficient subject matter area(s).~~

b.   ~~The apprentice will be required to retake the competency test or elevate their OJT performance to the required competency benchmark within 45 days of the failed competency deadline. If the apprentice fails to complete the competency requirement in the allotted 45 days, they may appear before the Apprenticeship Committee for potential disciplinary action, up to and including cancellation of their apprenticeship agreement.~~

5.   **In the event an apprentice is unsuccessful in completing a competency requirement to progress to a new wage step, the apprentice, Apprenti and the registered training agent shall work together to identify and/or provide additional educational support in the deficient subject matter area(s).**

6. ~~5~~. **Failure of the apprentice to maintain Employment may result in termination of apprenticeship agreement.**

7.   **Disciplinary action procedures are as follows:**
1st infraction: A written warning outlining expectations
2nd infraction: Development of a corrective action plan by the Apprenti Training Director and Apprentice
3rd infraction: Cause for cancellation of the apprenticeship agreement
    i.   **If the Committee request the apprentice to attend a regular Committee meeting, the apprentice shall be notified via phone call and emailed 30 days prior to the meeting.**
    ii.   **The apprentice may attend meeting in whatever manner is most accessible for the apprentice. IE. Video meeting platform, phone call, etc.**