

Interagency Committee for Apprenticeship (IACA)
Occupational Framework for Registered Apprenticeship

April 5, 2021

Dear Information Technology (IT) Colleagues,

Rapidly advancing technology, tremendous economic change, and COVID-19 pandemic response has moved workers online and increased the need for a prepared IT workforce. This is true across economic sectors with employers seeking to hire qualified and skilled employees.

Unfortunately workforce gaps remain in essential IT positions like data analyst, networks, and cybersecurity. Industry and technology-based occupations seek a match with skilled workforce; but significant challenges remain to finding and hiring qualified talent. One particular challenge is understanding currently needed high demand skills that would make a difference in providing a talent pool of numerous prospective new employees for your organization. We request your feedback and insight as an IT subject matter expert to help us meet these challenges. The California Interagency Advisory Committee on Apprenticeship (IACA) IT Subcommittee represents education, training providers, and industry. We focus on leveraging registered apprenticeships to support high demand IT talent workforce needs.

We have developed key Model Industry Training Competencies (MITCs) to better align education/training programs with labor market needs. Attached is a survey which includes MITCs for networking and computer systems administration and help desk-client services occupations found across California for your review. We seek your input on the skills and competencies you seek in prospective employees. What knowledge and abilities are valued by today's IT employer/industry?

Please complete the survey to share whether you agree or disagree with the skills and competencies identified. We encourage you to leave comments and suggestions. We anticipate the survey to take approximately 15 minutes of your time and remain open through June 5, 2021. Thank you very much for your feedback and suggestions!

Comments and Suggestions: We seek IT industry feedback on the following questions:

Question #1: Do you agree/disagree with the skills and competencies identified on the MITCs below?

MITC	Strongly Agree	Agreed	Neutral	Disagree	Strongly Disagree
Networking and Computer Systems Administration	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
Help Desk-Client Services	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.

Question #2: Do you have any comments, suggestions, feedback to make regarding the MITC provided? Anything missing or require further clarification?

Click or tap here to enter text.

Question #3: Do you have any suggestions to make regarding additional competencies/skills to include that fit your specific industry/employer needs?

Click or tap here to enter text.

Question #3: Do you have any suggestions to make regarding additional competencies/skills to include that fit your specific industry/employer needs?

Click or tap here to enter text.

Question #4: What is your sense of professional industry/employer support for these MITCs and the registered apprenticeship workforce development model?

Click or tap here to enter text.

Your input is deeply appreciated and thanks for your participation! Please return feedback to kclement@mail.fresnostate.edu and TArefain@dir.ca.gov by **June 5, 2021** so we can finish the proposed MITC templates and distribute across California industry and employers. If you have any additional questions, comments, or suggestions on these MITCs or ways to align and implement a registered apprenticeships solution at your place of business, feel free to reach out to us at the above e-mail addresses.

Thank you for your time and feedback.

Question #4: What is your sense of professional industry/employer support for these MITCs and the registered apprenticeship workforce development model?

Click or tap here to enter text.

Your input is deeply appreciated and thanks for your participation! Please return feedback to kclement@mail.fresnostate.edu and TArefain@dir.ca.gov by **June 5, 2021** so we can finish the proposed MITC templates and distribute across California industry and employers. If you have any additional questions, comments, or suggestions on these MITCs or ways to align and implement a registered apprenticeships solution at your place of business, feel free to reach out to us at the above e-mail addresses.

Thank you for your time and feedback.

Best regards,

- Dr. Keith Clement, Professor, Fresno State and IACA IT Subcommittee Chair
- Tsegay Arefaine, Strategic Business Advisor, Division of Apprenticeship (DAS)

Networking and Computer Systems Administration MITC Developed by:

- Kenneth Anyanwu, Success Coordinator, SEIU Local 1000
- Michael Specchierla, Executive Director, SLOCOE, SLO Partners
- Keith Koo, Managing Partner, Guardian Insight Group

Help Desk-Client Services MITC Developed by:

- Kenneth Anyanwu, Success Coordinator, SEIU Local 1000
- Michael Specchierla, Executive Director, SLOCOE, SLO Partners
- Keith Koo, Managing Partner, Guardian Insight Group

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Name of Subcommittee:	Click or tap here to enter text.
Occupation	Network and Computer Systems Administrator
Job titles	Network Specialist; IT Associate; IT Specialist
O*NET Codes (include for each job title)	15-1142.00
RAPIDS Codes	1132HY
Created	Feb. 2021
Revision Timeline	2/8/21

EEO CONSIDERATIONS

Include here considerations to expand access to the proposed apprenticeable occupation(s) for California's historically underrepresented and underutilized populations through strategic outreach, recruitment, selection, use of pre-apprentice linkage and/or other support. This may include:

- 1. Description of key barriers to entry and/or advancement in this proposed apprenticeable occupation(s) for California's historically underrepresented and underutilized populations.*
- 2. Description of internal processes that ensure equity and inclusion in access and promotion for this proposed apprenticeable occupation(s) for California's historically underrepresented and underutilized populations.*
- 3. Identification of relevant pre-apprentice linkage agreements.*
- 4. Any relevant participant reporting showing inclusion rates of underrepresented and underutilized populations.*

This statement should be reviewed by the EEOC and Pre-Apprenticeship Subcommittees before submission to IACA.

LENGTH OF TRAINING

Minimum length of program and hours of OJT

Type	Hours
Classroom Training	270 (semester) hours (15 semester units or 22.5 quarter units of IT or closely related course work)
On-the-job Training	1040 hours (6 months)
Total Hours	1310 hours

1. PROGRAM TYPE

Detail industry definition and criteria for "Competency-Based" and "Hybrid" programs for this

occupation.

☐ Competency-Based

☒ Hybrid

Comments: Civil service entities are governed by merit-based hiring practices, wherein minimum qualifications are largely time-based or education-based.

2. CERTIFICATIONS, LICENSURE, AND OTHER CREDENTIAL REQUIREMENTS

List of credential details including Earned Before, During or After Apprenticeship. This should include identifying licensure requirements for occupations in information technology and other industries where there is DCA oversight.

Certification Name	Type	Credentialing Agency(s)
Certificate/ Credential 1	After Apprenticeship	Cisco CCENT Certification Exam
Certificate/ Credential 2		
Certificate/ Credential 3		
License 1		

3. JOB FUNCTION: General Practices - Computer Basics

Competencies	Core or Optional	RSI (classroom)	OJT (work-based)	Type of Test
Demonstrate a working knowledge of the components of a computer and perform basic troubleshooting on communication issues within a computer.	Core	Yes	Yes	
Demonstrate a working knowledge of the hardware components of a computer and perform basic troubleshooting on hardware related issues.	Core	Yes	Yes	
Demonstrate a working knowledge of basic networking, to allow the flow of information between multiple computers	Core	Yes	Yes	
Demonstrate a working knowledge of basic networking, to allow the flow of information between multiple computers.	Core	Yes	Yes	

4. JOB FUNCTION: General Practices – Security Basics

Competencies	Core or Optional	RSI (classroom)	OJT (work-based)	Type of Test
Demonstrate working knowledge of “bestpractices” in general network security.	Core	Yes	Yes	
Demonstrate working knowledge of organization’s security awareness program which is used to communicate “best practices” for end users.	Core	No	Yes	
Understand the organizations asset management program. Working knowledge of how assets are distributed and assigned, administration rights and other roles to comply with the asset licensing agreements.	Core	No	Yes	

5. JOB FUNCTION: Client & Networking Operating Systems Basics

Competencies	Core or Optional	RSI (classroom)	OJT (work-based)	Type of Test
Install and configure client operating systems for the organization.	Core	Yes	Yes	
Demonstrate a working knowledge of how to configure and troubleshoot network operating systems.	Core	No	Yes	
Demonstrate a working knowledge of how to configure and troubleshoot Active Directory.	Core	No	Yes	
Demonstrate a working knowledge of how to configure and troubleshoot identity and access solutions.	Core	Yes	Yes	
Plan 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.	Core	Yes	Yes	

7. JOB FUNCTION: Advanced Networking

Competencies	Core or Optional	RSI (classroom)	OJT (work-based)	Type of Test
Perform basic Cisco Networking. Monitor and distribute traffic on an Ethernet Local Area Network [LAN] and identify switched LAN technology solutions to Ethernet networking issues.	Core	Yes	Yes	
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.	Core	Yes	Yes	
Recognize security threats in a network.	Core	Yes	Yes	

8. JOB FUNCTION: General Practices – Foundations

Competencies	Core or Optional	RSI (classroom)	OJT (work-based)	Type of Test
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	Optional	No	Yes	
Demonstrate a working understanding of the goals, mission and vision.	Optional	No	Yes	
Demonstrate a working understanding of the organization's office tools such as copiers, fax machines etc. Create documents using MS Office (Word, Excel, and Power Point) for management.	Core	Yes	Yes	

LIST OF NAMES OF SUB-COMMITTEE MEMBERS

Must include industry representatives of employers and employees.

Dr. Keith Clement
Kenneth Anyanwu
Miriam Farnbauer
Michael Specchierla
Meredith Stowell
Annie Tahtinen
Katherine Webster
Olivia Herriford
Keith Koo
Liga Hallstrom
Paul Giacomotto
Tsegay Arefaine
Jennifer Prado

Comments, Suggestions, and Feedback