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

April 13, 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 providinga 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 the MITC for software developer occupation 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 13, 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
MITC	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.
Software Developer	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 your 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 andthe 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 13, 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)

Software Developer MITC Developed by:

- Miriam Farnbauer, Program Manager, DIAG USA Foundation

- Michael Specchierla, Executive Director, SLOCOE, SLO Partners

DRAFT TEMPLATE v.6
Interagency Committee for Apprenticeship (IACA)
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Name of Subcommittee:	Click or tap here to enter text.
Occupation	Software Developer
Job titles	Application Developer, Application Integration Engineer, Developer, Infrastructure Engineer, Network Engineer, Software Architect, Software Developer, Software Development Engineer, Software Engineer, Systems Engineer
O*NET Codes (include for each job title)	15-1252.00
RAPIDS Codes	1129CB
Created	March.2021
Revision Timeline	

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.

1. LENGTH OF TRAINING

   Minimum length of program and hours of OJT

Type	Hours
Classroom Training	Click or tap here to enter text.
On-the-job Training	Click or tap here to enter text.
Total Hours	Click or tap here to enter text.

2. PROGRAM TYPE

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

   ☑ Competency-Based

   ☐ Hybrid

   Comments: Click or tap here to enter text.

3. 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		
Certificate/ Credential 2		
Certificate/ Credential 3		
License 1		

4. **JOB FUNCTION 1: Software Testing**

Competencies	Core or Optional	RSI (classroom)	OJT (work-based)	Type of Test
Demonstrate how to work with development team to create test plans, including unit testing and integration tasks.				
Demonstrate how to implement testcases and validation testing.				
Demonstrate how to find and fix bugs, including how to interpret tests resultsand make recommendations.				
Demonstrate knowledge of how to support user acceptance testing.				

5. **JOB FUNCTION 2: Software Design**

Competencies	Core or Optional	RSI (classroom)	OJT (work-based)	Type of Test
Identify and demonstrate the processto integrate feedback and recommendations into product development.				
Identify and demonstrate the processto review and provide I put for user documentation.				
Demonstrate the organization's designprinciples used for application development and how to understand and contribute to requirement specification documents.				
Demonstrate how to work with stakeholders to understand requirements.				
Demonstrate how to specify and scope hardware and system requirements.				
Demonstrate how to identify and mitigate security threats and vulnerabilities that may arise from interactions with other systems, external and legacy code.				

6. **JOB FUNCTION 3: Development of Application**

Competencies	Core or Optional	RSI (classroom)	OJT (work-based)	Type of Test
Demonstrate the ability to identify coding languages and standards usedby the organization.				
Identify and demonstrate the application development process including coding, documentation, andtesting.				
Demonstrate the ability to review anapplication's code as part of a peer group.				
Demonstrate the ability to revise and adapt existing code to meet emerging requirements.				

7. **JOB FUNCTION 4: Implement, Support, and Maintain Applications**

Competencies	Core or Optional	RSI (classroom)	OJT (work-based)	Type of Test
Demonstrate how to perform trainingfor end users.				
Demonstrate how to evaluate and fix bugs that may become apparent afterproduct deployment.				
Demonstrate how to develop and write software code.				
Demonstrate the ability to assist in the development of a release plan for an application.				
Demonstrate the ability to transition an application to a new platform.				
Demonstrate the ability to maintain and support applications.				
Demonstrate the ability to evaluate, implement, and document application enhancements.				
Demonstrate the ability to perform system maintenance for applicationsecurity.				
Demonstrate the ability to identifycommon security risks and threats.				

LIST OF NAMES OF SUB-COMMITTEE MEMBERS
Must include industry representatives of employers and employees.

Dr. Keith Clement
Meredith Stowell
Miriam Farnbauer
Michael Speccheria
Jennifer Prado
Kenneth Anyanwu
Annie Tahtinen
Katherine Webster
Oliva Herriford
Keith Koo

Comments, Suggestions, and Feedback: