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| **SKILLS FRAMEWORK FOR INFOCOMM TECHNOLOGY SKILLS MAP – Quality Engineer** | | | | | | |
| **Sector** | Infocomm Technology | | | | | |
| **Track** | Product Development | | | | | |
| **Sub-track** | Quality, Risk and Security | | | | | |
| **Occupation** | Quality Specialist | | | | | |
| **Job Role** | **Quality Engineer** | | | | | |
| **Job Role Description** | The Quality Engineer identifies user requirements and expectations to inform quality standards for end-products, and analyses product development processes to identify relevant quality standards. He/She incorporates relevant and suitable international standards into product development processes, quality standards and testing processes. He identifies quality-testing types and variations based on business needs and requirements and develops testing processes. He identifies suitable measures of quality for testing and contributes to the development of test scenarios and plans. He conducts various quality tests, and analyses data to identify operating and usage conditions in which performance of quality measures starts to decline. He also automates quality testing for applicable and suitable tests.    He works in a team setting and is proficient in programming languages required by the organisation. He is familiar with international quality standards, and uses test automation frameworks and tools, as well as applicable quality testing and analysis tools.    The Quality Engineer possesses strong analytical ability with excellent communication and interpersonal skills. He is highly meticulous in nature, curious and work dynamically. | | | | | |
| **Critical Work Functions and Key Tasks** | **Critical Work Functions** | **Key Tasks** | | | | |
| **Develop quality standards** | Analyse product development processes to identify quality standards at each stage of the process | | | | |
| Identify user requirements and expectations to develop quality standards for end products | | | | |
| Develop quality standards that incorporates international standards and best practices in quality | | | | |
| Identify matrices to assess for quality | | | | |
| Develop user guides on quality standards to define requirements, specifications, guidelines, and characteristics of processes and products | | | | |
| Analyse compliance level to quality standards and identify areas for change | | | | |
| Conduct assessments of existing quality standards against evolving user requirements, business needs and regulatory changes | | | | |
| **Develop quality testing processes** | Identify quality testing types and variations for each phase of the product development process or lifecycle based on business needs and requirements | | | | |
| Identify objectives of quality tests for each phase of the development process or lifecycle | | | | |
| Outline steps in the quality test process required to achieve test objectives | | | | |
| Identify applicable and relevant international standards and practices | | | | |
| Develop quality testing processes for each phase of the development process or lifecycle | | | | |
| **Develop plans to execute quality testing** | Identify suitable quality measures for testing based on product attributes valued most by users | | | | |
| Develop test plans | | | | |
| Develop quality testing approaches and steps to satisfy test objectives | | | | |
| Create test scenarios that complies with established testing procedures and guidelines | | | | |
| Work with relevant teams to plan for quality testing based on established testing procedures and guidelines | | | | |
| **Perform quality testing** | Conduct quality tests across phases of the product development process or lifecycle to assess performance of quality measures under different operational and usage conditions | | | | |
| Analyse data from quality tests to determine optimal operational and usage conditions | | | | |
| Utilise tools to test and analyse factors leading to failure of quality standards | | | | |
| Identify operating and usage conditions in which performance of quality measures drops | | | | |
| Document quality testing outcomes | | | | |
| Provide suggestions to improve performance of quality measures | | | | |
| Develop tools to automate quality testing for suitable types of tests | | | | |
| Implement automated test cases and codes for quality testing | | | | |
| Conduct applicable security testing with relevant functional teams | | | | |
| Address quality issues and impediments to achieving quality standards in an Agile environment | | | | |
| **Skills and Competencies** | **Technical Skills and Competencies** | | | **Critical Core Skills** | | |
| Process Improvement and Optimisation\* | | Level 3 | Communication | | Intermediate |
| Quality Engineering\* | | Level 3 | Collaboration | | Intermediate |
| Quality Standards\* | | Level 4 | Decision Making | | Basic |
| Software Testing\* | | Level 2,  Level 3 | Digital Fluency | | Intermediate |
| Test Planning\* | | Level 2,  Level 3 | Problem Solving | | Intermediate |
| Agile Software Development | | Level 3 |  | | |
| AI Ethics and Governance | | Level 2,  Level 3 |
| Applications Development | | Level 3 |
| Business Needs Analysis | | Level 3 |
| Business Performance Management | | Level 3 |
| Networking | | Level 3 |
| Partnership Management | | Level 3 |
| Performance Management | | Level 4 |
| Problem Management | | Level 3 |
| Process Validation | | Level 3 |
| Product Management | | Level 3 |
| Project Management | | Level 3 |
| Quality Assurance | | Level 3 |
| Software Design | | Level 3 |
| Stakeholder Management | | Level 2,  Level 3 |
| Strategy Implementation | | Level 3 |
| **Programme Listing** | For a list of Training Programmes available for the ICT sector, please visit: www.skillsfuture.sg/skills-framework/ict | | | | | |
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| The information contained in this document serves as a guide.  \*Note: Technical Skills and Competencies (TSCs) with an asterisk (\*) refer to Priority Skills (i.e., TSCs to be prioritised for this role). | | | | | | |