|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **SKILLS FRAMEWORK FOR INFOCOMM TECHNOLOGY SKILLS MAP – Quality ENGINEERING manager** | | | | | | |
| **Sector** | Infocomm Technology | | | | | |
| **Track** | Product Development | | | | | |
| **Sub-track** | Quality, Risk and Security | | | | | |
| **Occupation** | Quality Specialist | | | | | |
| **Job Role** | **Quality Engineering Manager** | | | | | |
| **Job Role Description** | The Quality Engineering Manager establishes suitable quality standards at each stage of the development process and evaluates suitability of matrices to assess quality. He/She determines types and variations of quality tests to fulfil business needs and requirements, as well as ensures that testing processes comply with applicable regulatory and relevant quality testing requirements. He synthesises product performance against user feedback to prioritise quality measures for testing and manages the conduct of quality tests on quality measures under different operational and usage conditions. He recommends new technologies, tools and infrastructures, practices, and changes to processes, as well as guides the automation of quality testing.  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 Engineering Manager 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** | Determine quality standards at each stage of the development process to ensure quality of outputs | | | | |
| Synthesise user requirements and expectations to determine suitable quality standards for end products | | | | |
| Determine the suitability of including international standards and best practices in quality standards | | | | |
| Evaluate suitability of quality matrices | | | | |
| Oversee the development of user guides on quality standards | | | | |
| Address issues of non-compliance with quality standards and specifications | | | | |
| Review appropriateness and suitability of quality standards in the development process and for end products | | | | |
| **Develop quality testing processes** | Determine types and variations of quality tests for each phase of the product development process or lifecycle to fulfil business needs and requirements | | | | |
| Assess objectives of quality tests for feasibility and relevancy to each phase of the development process or lifecycle | | | | |
| Review steps in the quality test process against test objectives | | | | |
| Ensure quality testing processes complies with regulatory and other relevant requirements | | | | |
| Develop quality systems for the organisation | | | | |
| **Develop plans to execute quality testing** | Synthesise product performance against user feedback to prioritise quality measures for testing | | | | |
| Determine quality testing objectives, assumptions, and hypotheses | | | | |
| Determine timelines, test environment, tools and approaches required, work allocation and responsibilities in quality testing | | | | |
| Review test plans for refinements to ensure robustness of testing | | | | |
| Review test scenarios for compliance with established testing procedures and guidelines | | | | |
| **Perform quality testing** | Manage the conduct of quality tests across phases of the product development process or lifecycle on quality measures under different operational and usage conditions | | | | |
| Provide technical inputs on quality gaps to the development team to improve product quality | | | | |
| Develop quality systems to mitigate or prevent failure from occurring or to enable early detection of failure | | | | |
| Validate operating and usage conditions in which performance of quality measures drops | | | | |
| Develop reports documenting quality testing outcomes for the relevant development teams | | | | |
| Recommend new technologies, tools, and infrastructures, as well as practices and changes to processes | | | | |
| Guide the development of tools to automate quality testing for suitable types of tests | | | | |
| Evaluate automated test cases and codes for enhancements | | | | |
| Ensure the conduct of applicable security tests with relevant functional teams | | | | |
| Manage the resolution of quality issues to ensure achievement of quality standards in an Agile Environment | | | | |
| **Manage people and organisation** | Manage the budget expenditure and allocation across teams and projects | | | | |
| Track the team’s achievements and key performance indicators | | | | |
| Propose new operational plans, including targeted budgets, work allocations and staff forecasts | | | | |
| Optimise the use of resources | | | | |
| Develop learning roadmaps to support the professional development of the team | | | | |
| Manage the performance and development process, including providing coaching and development opportunities to maximise the potential of each individual | | | | |
| Coach team members on Agile practices and values | | | | |
| **Skills and Competencies** | **Technical Skills and Competencies** | | | **Critical Core Skills** | | |
| Learning and Development\* | | Level 4 | Communication | | Advanced |
| Manpower Planning\* | | Level 4 | Collaboration | | Advanced |
| People and Performance Management\* | | Level 4 | Decision Making | | Intermediate |
| Performance Management\* | | Level 4 | Developing People | | Intermediate |
| Problem Management\* | | Level 4 | Problem Solving | | Advanced |
| Process Improvement and Optimisation\* | | Level 4 |  | | |
| Quality Engineering\* | | Level 4 |
| Quality Standards\* | | Level 5 |
| Software Testing\* | | Level 4 |
| Stakeholder Management\* | | Level 4 |
| Test Planning\* | | Level 4 |
| Agile Coaching | | Level 4 |
| Agile Software Development | | Level 4 |
| AI Ethics and Governance | | Level 4 |
| Applications Development | | Level 4 |
| Budgeting | | Level 4 |
| Business Agility | | Level 4 |
| Business Needs Analysis | | Level 4 |
| Business Performance Management | | Level 4 |
| Networking | | Level 4 |
| Partnership Management | | Level 4 |
| Process Validation | | Level 4 |
| Product Management | | Level 3 |
| Project Management | | Level 4 |
| Quality Assurance | | Level 4 |
| Software Design | | Level 4 |
| Strategy Implementation | | Level 4 |
| **Programme Listing** | For a list of Training Programmes available for the ICT sector, please visit: www.skillsfuture.sg/skills-framework/ict | | | | | |
|  |  |  | |  |  | |
| 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). | | | | | | |