VANTAGEPOINT
I.T. TRAINING & CONSULTING
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Certified Software Quality Engineer (CSQE)

Course Specifications

Course length: 4.0 day(s)

Course Description

Course Objective: You will describe software quality concepts that will prepare you for the CSQE certification.

Target Student: This course is intended for software quality professionals with a minimum of two years' experience who wish to seek certification to validate their professional experience with an industry credential, and also for software professionals such as programmers and engineers who are seeking to widen their knowledge of methodologies, standards, and processes that are implemented to improve software quality in order to move into a software quality role.

Prerequisites: Students should be familiar with software development practices and basic principles of software testing, the software testing life cycle, and testing approaches and types. Students also need to have a basic understanding of creating test plans, creating and executing test cases, and managing incidents.

You can obtain the required level of skills and knowledge by taking the following suggested course:

- *Introduction to Software Testing*

Course Objectives

Upon successful completion of this course, students will be able to:

- describe basic concepts of quality and benchmarking.
- describe the importance of leadership skills in ensuring quality.
- describe effective team management skills.
- describe the professional and social responsibilities of a quality assurance professional.
- evaluate the various process standards and models to ensure quality.
- describe software project management.
- describe the various SDLC models and system architecture.
- describe software requirements engineering.
- describe designing, analyzing, and developing software using various tools and methods.
- describe a software quality management system.

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- analyze various software testing techniques, levels, and strategies.
- describe different software testing plans, environments, tools, and inspection techniques.
- evaluate various steps involved in verifying and validating software documentation and deliverables.
- describe software metrics and analytical techniques.
- describe the concepts of software configuration management.

Course Content

Lesson 1: Understanding Quality and Benchmarking

Topic 1A: Introduction to Quality

Topic 1B: Understand Software Quality and Benchmarking

Lesson 2: Examining Leadership Skills

Topic 2A: Introduction to Organizational Leadership

Topic 2B: Analyze Conflict Resolution

Topic 2C: Evaluate Communication Management

Topic 2D: Examine Issues with Communication

Lesson 3: Examining Team Management Skills

Topic 3A: Examine Team Dynamics

Topic 3B: Examine Team Decision-Making Tools

Lesson 4: Summarizing Professional and Social Responsibility

Topic 4A: Examine Professional Codes of Ethics

Topic 4B: Examine the Sarbanes-Oxley Act

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Lesson 5: Evaluating Process Standards and Models

Topic 5A: Introduction to International Standards

Topic 5B: Introduction to the CMMI Model

Lesson 6: Examining Software Project Management

Topic 6A: Examine the Software Project Scope, Plan, and Process

Topic 6B: Examine Software Projects Tracking

Topic 6C: Examine Software Project Risk

Lesson 7: Understanding Software Development Life Cycle (SDLC) Models and the System Architecture

Topic 7A: Introduction to Software Development Life Cycle (SDLC) Models

Topic 7B: Understand Agile Models

Topic 7C: Analyze the Software Systems Architecture

Lesson 8: Examining Software Requirements Engineering

Topic 8A: Introduction to Software Requirements Engineering

Topic 8B: Analyze Software Requirements Elicitation

Topic 8C: Understand Software Requirements Analysis

Topic 8D: Examine Software Requirements Management

Lesson 9: Describing Software Analysis, Design, and Development

Topic 9A: Introduction to Software Design Methodologies

Topic 9B: Identify Software Product Quality Attributes

Topic 9C: Analyze Software Product Reusability

Topic 9D: Introduction to Software Development Tools and Methods

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Topic 9E: Examine Software Maintenance Management

Lesson 10: Examining the Software Quality Management System

Topic 10A: Understand the Software Quality Management System

Topic 10B: Examine the Software Outsourcing Paradigm

Topic 10C: Analyze Software Quality Methodologies

Topic 10D: Evaluate Software Process and Product Audits

Lesson 11: Analyzing Software Testing Techniques, Levels, and Strategies

Topic 11A: Understand Software Verification and Validation

Topic 11B: Examine Software Test Strategies

Topic 11C: Examine Testing Types and Levels

Lesson 12: Analyzing Software Test Processes and Reviews Management

Topic 12A: Examine Software Test Plans and Design

Topic 12B: Examine Software Test Coverage Specifications

Topic 12C: Identify Software Code Coverage Techniques

Topic 12D: Identify Software Test Environments and Tools

Topic 12E: Examine Software Reviews and Inspection Techniques

Lesson 13: Evaluating Software Verification and Validation Documentation and Deliverables

Topic 13A: Assess Software Test Execution Documentation

Topic 13B: Examine Software Deliverables

Lesson 14: Examining Software Metrics and Analysis

Topic 14A: Understand Metrics and the Measurement Theory

Topic 14B: Measure Software Process and Product Metrics

Topic 14C: Employ Analytical Techniques

Topic 14D: Introduction to Software Quality Analysis Tools

Lesson 15: Understanding Software Configuration Management

Topic 15A: Analyze the Software Configuration Infrastructure

Topic 15B: Understand Software Configuration Identification

Topic 15C: Examine Configuration Control and Status Accounting

Topic 15D: Examine Configuration Audits

Topic 15E: Evaluate Product Release and Distribution

Appendix A: CSQE Certification Mapping