

Certified Software Quality Engineer Preparation On Demand, Web-Based Course Offered by The Westfall Team

Certified Software Quality Engineer (CSQE)

Preparation course is an on demand, web-based course design to be a comprehensive, in-depth review of the topics in the ASQ's Certified Software Quality Engineer (CSQE) Body of Knowledge. This course:

- Helps CSQE candidates prepare for and perform well on the ASQ CSQE exam
- Provides an excellent knowledge base for anyone interested in implementing or improving Software Quality Engineering techniques and practices in their organization

This course includes:

- For each sub-section of the CSQE Body of Knowledge:
 - One or more videos
 - An additional information section with links to papers, webinars, videos and/or other materials
 - A three question practice quiz
- Introductory materials including information on the class, the CSQE certification and the CSQE Exam
- A bibliography of reference materials and websites
- A extensive glossary that can be printed to take into the exam as a reference
- Three complete 160 item practice exams that match the distribution of topic areas on the actual exam

[Click here to learn more about the Certified Software Quality Engineer \(CSQE\) certification from ASQ.](#)

Method of Instruction: This course is taught through online videos. Students can use practice quizzes and exams to verify their understanding of the materials and gain confidence before taking the ASQ exam. Each sub-section also has an Additional Study section with

Target Audience: CSQE exam candidates, software quality engineers, developers, testers, project managers, functional managers, requirements analyst, and other software stakeholders who will be involved in planning and managing software projects, developing software and/or assuring its quality.

Registration: The registration cost for this course is \$1195.00 per student. If your organization has 3 or more students to register, you can receive a \$100 discount off each registration (making the price per student \$1,095),

To register for this course call 972-867-1172 or email lwestfall@westfallteam.com with your contact information.

Free Sample: [Click here to view a free sample sub-section from this course and log-in as a guest](#)

Outline: This course follows the outline of the Software Quality Engineering Body of Knowledge as defined by ASQ. This online version includes all of the information taught in our instructor lead course plus additional bonus features.

I. General Knowledge

A. Benefits of Software Quality Engineering within the Organization

- Definition of Quality
- Benefits of SQE within the Organization
- Cost of Fixing Defects
- Quality and Customer Satisfaction

B. Ethical & Legal Compliance

1. ASQ Code of Ethics for Professional Conduct
2. Legal & Regulatory Issues

C. Standards & Models

- ISO and IEEE Standards
- CMMI

D. Leadership Skills

1. Organizational Leadership
 - Introduction to Leadership
 - Organizational Change Management
 - Motivation and Recognition
 - Knowledge Transfer
 - Mentoring and Coaching
2. Facilitation Skills
 - Facilitation, Conflict Resolution and Negotiation Skills
 - Meeting Management

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3. Communication Skills
 - Communication Methods
 - Listening
 - Interviewing
 - Cultural & Communication

E. Team Skills

1. Team Management
 - Team Roles & Responsibilities
 - Team Development & Group Dynamics
 - Diverse, Distributed Environments & Virtual Teams
2. Team Tools

II. Quality Management System

A. Quality Management System

1. Quality Goals & Objectives
 - Quality Goals & Objectives
 - Quality Management Documentation
 - Quality Planning
2. Customers & Other Stakeholders
3. Outsourcing
 - Introduction to Outsourcing
 - Acquisition
 - Outsourcing Process
4. Business Continuity, Data Protection & Data Management
 - Business Continuity
 - Data Protection
 - Data Management

B. Methodologies (for Quality Management)

1. Cost of Quality (COQ) & Return on Investment (ROI)
 - Cost of Quality
 - Return on Investment
2. Process Improvement
 - Benchmark & (PDCA)
 - Six Sigma & DMAIC
 - Lean
3. Corrective Action Procedures
4. Defect Prevention

C. Audits

1. Audit Types
 - Introduction to Audits

- Types of Audits
2. Audit Roles & Responsibilities
 - Client & Auditor Roles & Responsibilities
 - Auditee Roles & Responsibilities
 3. Audit Process
 - Audit Initiation, Planning & Preparation
 - Audit execution
 - Audit Report and Follow-Up

III. System & Software Engineering Processes

A. Life Cycle & Process Models

1. Waterfall Software Development Life Cycle
 - Software Life Cycle & Process Models
 - Waterfall Software Development Life Cycle
2. Incremental/Iterative Software Development Life Cycle
 - Spiral Model
 - Incremental/Iterative Software Development Life Cycles
3. Agile Software Development Life Cycle
 - Agile
 - Scrum
 - Other Methods
 - Choosing a Model

B. Systems Architecture

- Define a Systems Architecture
- Types of System Architectures
- Web Architectures

C. Requirements Engineering

1. Product Requirements
 - Requirements Engineering - Introduction
 - Functional Requirements
 - Interface Requirements
 - Performance Requirements
 - Globalization Requirements
 - Design Constraints
2. Data & Information Requirements
3. Quality Requirements
4. Compliance Requirements
5. Security Requirements
6. Requirements Elicitation Methods
 - Elicitation Techniques

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- User Stories & Storyboards
 - Use Cases
 - 7. Requirements Evaluation
 - Analysis Models
 - Requirements Validation
 - Requirements Prioritization
- D. Requirements Management**
1. Requirements Change Management
 2. Bi-Directional Traceability
- E. Analysis, Design & Development**
1. Design Methods
 - Steps in Design & Development
 - Design Concepts
 - Analysis & Design Process
 - Design Methods
 2. Quality Attribute & Design
 3. Software Reuse
 4. Software Development Tools
- F. Maintenance Management**
1. Maintenance Types
 2. Maintenance Strategies
 3. Customer Feedback Management
- IV. Project Management**
- Project Defined
 - Project Management Process
- A. Planning, Scheduling & Deployment**
1. Project Planning
 - Inputs to Project Planning
 - Traditional Project Planning
 - Agile Planning
 - Estimates and Forecasts
 - Estimation Methods
 - Activity Networks
 - Schedule, Resource & Budget
 2. Work Breakdown Structure (WBS)
 - Traditional Work Breakdown Structure
 - Agile Equivalent to a WBS
 3. Project Deployment
- B. Tracking & Control**
1. Phase Transition Control
 - Tracking & Control
 - Transition Tracking
2. Tracking Methods
 - Earned Value
 - Other Tracking Methods
 3. Project Reviews
 - Status Reviews
 - Phase End Reviews
 - Post Project Reviews, Retrospectives & Reflections
 4. Program Reviews
- C. Risk Management**
1. Risk Management Methods
 - Risk Defined
 - Risk Management Process
 - Risk Identification
 - Risk Analysis
 - Risk Planning
 - Risk Reduction Leverage
 - Risk Action & Tracking
 2. Software Security Risk
 - Software Security Threats
 - Software Security Risk Management
 3. Safety & Hazard Analysis
 - Software Safety Risk
 - Hazard Analysis
 - FMEA & Safety Risk Mitigation
- V. Software Metrics & Analysis**
- A. Process & Product Measurement**
1. Terminology
 - Metric & Measurement Defined
 - Metric Validity & Reliability
 - Explicit vs. Derived Measures
 - Variation & Statistics
 2. Software Product Metrics
 - Selecting Product Metrics
 - Product Size Metrics
 - Product Complexity Metrics
 - Product Quality Metrics
 - Test Coverage Metrics
 - Requirements Volatility
 - Reliability Volatility Metrics
 - Other Product Metrics
 3. Software Process Metrics

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- Cost & Cycle Time Metrics
 - Customer Satisfaction Metrics
 - Problem Report & Defect Metrics
 - Software Process Capability
4. Data Integrity
 - Measurement Data Collection
 - Measurement Data Integrity
 - Human Factors & Measurement

B. Analysis & Reporting Techniques

1. Metrics Reporting Tools
 - Types of Graphs
 - Metrics Reports
2. Classic Quality Tools
 - Flow Charts & Check Sheets
 - Cause-and-Effect Diagram
 - Pareto Chart & Scatter Diagrams
 - Run Charts & Histograms
 - Control Charts
3. Problem Solving Tools
 - Problem Solving Tools
 - Root Cause Analysis

VI. Software Verification & Validation

A. V&V Theory

1. V&V Methods
2. Software Product Evaluation
 - Software Work Product V&V
 - Risk-Based V&V
 - Software V&V Plan

B. Test Planning & Design

1. Test Strategies
 - Testing In the Life Cycle
 - White, Grey & Black-Box Testing
 - Other Testing Strategies
2. Test Plans
3. Test Design
 - Equivalence Classed
 - Boundary Testing
 - Fault Insertion & Fault-Error Handling
4. Software Test
 - Levels of Software Testing
 - Functional Software testing
 - Performance & Resource Utilization Testing

- Usability Testing
 - Regression Testing
5. Tests of External Products
 6. Test Coverage of Specification
 - Specification Coverage
 - Domain Coverage
 - Configuration Coverage
 7. Code Coverage Techniques
 8. Test Environments
 - Types of Test Environments
 - Controlling Test Environments
 9. Test Tools
 10. Test Data Management

C. Reviews & Inspections

- Management and V&V Reviews
- Technical Reviews & Pair Programming
- Benefits of Peer Reviews
- Selecting Peer Reviewers
- Types of Peer Reviews
- Desk Checks & Walk-Throughs
- Inspections

D. Test Execution Documentation

- Test Execution
- Test Cases & Procedures
- Test Execution/Results Documents

VII. Software Configuration Management

- Configuration Management Defined
- Software Configuration Management Planning

A. Configuration Infrastructure

1. Configuration Management Team
2. Configuration Management Tools
3. Library Processes
 - SCM Libraries
 - Library Processes

B. Configuration Identification

1. Configuration Items
 - Configuration Identification Activities
 - Product Partitioning
 - Configuration Items
 - Identification Methods
2. Software Builds & Baselines

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- Software Builds
- Baselines

C. Configuration Control & Status Accounting

1. Item Change & Version Control
 - Configuration Control
 - Item Change Control
 - Version Control
2. Configuration Control Boards (CCB)
 - Configuration Control Boards
 - CCB Process
 - Multiple Levels of CCBs
3. Concurrent Development

4. Status Accounting

D. Configuration Audits

E. Release & Distribution

1. Product Release
 - Product Release
 - Product Propagation
2. Customer Deliverables
 - Customer Deliverables
 - Production & Delivery
3. Archival Processes

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