

## SA03 - Software Quality Assurance and Testing Techniques

### OVERVIEW

Software systems that fail to provide full functionality, performance or otherwise do not meet user needs can reduce profit, productivity and result in costly rework. Optimizing Software Quality Assurance and Testing practices results in cost-effective and high-quality software.

This fast-paced interactive course will offer you the information, resources and methodology you need to implement in your own organization to develop a structured software quality and testing process that works for you.

The course provides the necessary skills and hands-on practice to define, design and implement a software quality system using proven techniques tailored for your life cycle model. In addition, the course will expose you to an array of ideas that you can incorporate immediately - all offered to help you streamline every aspect of your testing process, assuring on-time delivery with a solid product.

### AUDIENCE

- Test Engineers
- Quality Engineers
- Systems Analysts
- IT Professionals
- Project Managers
- Team Leaders

### DURATION

- The duration of this course is: **2 days (14 hours)**

### COURSE OBJECTIVES

- Discovering quality problems
- Streamlining the process
- Applying life cycle models
- Determining the appropriate project standards
- Conducting peer reviews
- Gain consensus from the entire testing team within your enterprise
- Become more accurate when estimating time and resources needed for testing
- Measure the quality of your product and effectiveness of your development/quality processes
- Use your existing sources to generate test cases and test data
- Meet internal challenges such as lack of resources, insufficient involvement by stakeholders and support from management
- Know what to test, what kind of test to conduct, where to glean the data, how and what to track, and how to record results
- Ship a more reliable product at a reduced cost

**COURSE OUTLINE****Module 1: Introduction to Quality Assurance**

- Defining the purpose of Software Quality Assurance (SQA)
- The Software Process Framework
- Recognizing the responsibilities of SQA

**Module 2: Planning for SQA**

- Aligning SQA with the organizational quality system
- Defining the roles and responsibilities within SQA
- Implementing best practices and industry standards
- Choosing the right industry practices for your organization
- Developing a workable plan for quality products

**Module 3: Implementing Verification and Validation Approaches**

- Applying static verification techniques for error detection
- Implementing dynamic validation methods
- Validating the tests product requirements and functionality

**Module 4: Applying Configuration Management (CM)**

- Defining the components of a CM system
- Identifying work products
- Managing and controlling products for consistency
- Assessing and managing components with release management
- Communicating product status using reports
- Ensuring quality by controlling CM components
- Tracking change requests

**Module 5: Fundamentals of Testing**

- Why is Testing Necessary?
- What is Testing?
- Seven Testing Principles
- Fundamental Test Process
- The Psychology of Testing
- Code of Ethics

**Module 6: Testing Throughout the Software Life Cycle**

- Software Development Models
- Test Levels
- Test Types
- Maintenance Testing

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### Module 7: Static Techniques

- Static Techniques and the Test Process
- Review Process
- Static Analysis by Tools

### Module 8: Test Design Techniques

- The Test Development Process
- Categories of Test Design Techniques
- Specification-based or Black-box Techniques
- Structure--based or White-box Techniques
- Experience-based Techniques
- Choosing Test Techniques