

Software Quality Essentials

For any one involved in the software industry, the statistics on software quality make depressing reading:

- Software can contain as many as 20 to 30 defects for every 1,000 lines of code¹
- Poor quality software costs US businesses as much as \$60 billion each year²
- US developers spend as much as 60% their available time simply fixing software errors³
- 15% of the global developer workforce writing software that will never be deployed or used³

This one-day course provides participants with a brief but comprehensive introduction to the ins and outs of software quality. The course is designed to both inform participants and stimulate them to develop an action plan for improving software quality in their organisations.

Course Features

- Concise but comprehensive coverage of the topic
- Content is suitable for both technical and non-technical staff
- Generic content, not linked to a specific methodology or improvement framework

Participant Benefits

- Participants gain a clear understanding of the underlying problems leading to poor software quality and workable solutions
- Provides an introduction to the topic that can be used as the basis for advanced training

Who Should Attend

- Software Development Managers, Project Managers and Project Sponsors
- Testers, Developers and Quality Assurance staff
- Methodologists and Process Improvement Staff

Course Duration

2 days

Contact

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Course Agenda

Some Popular Assumptions About Quality

- Quality is a Measure of Goodness
- Quality Cannot Be Measured
- Cost of Quality
- Quality is Expensive
- Quality Can be Tested Into a Product After It Has Been Created
- Quality is a People Problem

The Quality Triangle

- Identifying Gaps Between Quality Perspectives
- Aligning Quality Perspectives
 - The Value-Based Approach
 - The Process Improvement Approach

Software Product Quality

- The Software Quality Triangle
 - Gaps Between Software Quality Perspectives
 - Quality Triangle Shapes
- Measuring Software Product Quality
- The ISO 9126 Standard for Software Quality Characteristics

Software Process Quality

- The Software Development Life Cycle (SDLC)
- The SDLC and the Software Quality Triangle
- Defect Injecting Activities
- Defect Removing Activities
- Removing Defects Throughout the SDLC
- Measuring Software Process Quality

Software Process Improvement

- Modelling Software Processes
 - Work Products, Process Roles and Activities
 - Process Disciplines and Product Life-Cycles
- The Plan-Do-Check-Act (PDCA) Cycle
- Process Capability Levels
 - Level 1 - Ad-Hoc Process
 - Level 2 - Managed Process
 - Level 3 - Defined Process
 - Level 4 - Measured Process
 - Level 5 - Improving Process



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Software Process Improvement (cont.)

- Software Process Improvement Frameworks
 - ISO/IEC 15504: Information Technology - Software Process Assessment (SPICE)
 - Capability Maturity Model Integration (CMMI)

Software Quality and Risk

- Software Products and Risk
 - Software Product Risk Factors
 - Limitations of Software Testing
 - Identifying a Software Product Risk Profile
- Software Process and Risk
 - Sources of Risk in the Processes Environment
 - Technology
 - Projects
 - Organisations
 - Contracts
 - Risk Reduction Process Disciplines

Software Quality Management Techniques

- Repair, Rework and Scrap
- Quality Appraisal
 - Walkthroughs, Reviews and Inspections
 - Testing
- Defect Prevention
 - Early Requirements Validation
 - Configuration Management
 - Error Analysis
- Quantitative Quality Management

Software Quality Assurance

- Quality Assurance Compared to Quality Management
- Quality and Independence
- The Role of Quality Assurance
 - Monitor the Software Process
 - Ensure Compliance With Procedures and Standards
 - Alert Management When Deviations From Procedures and Standards Occur

¹ Sustainable Computing Consortium

² National Institute of Science and Technology (NIST)

³ Capers Jones