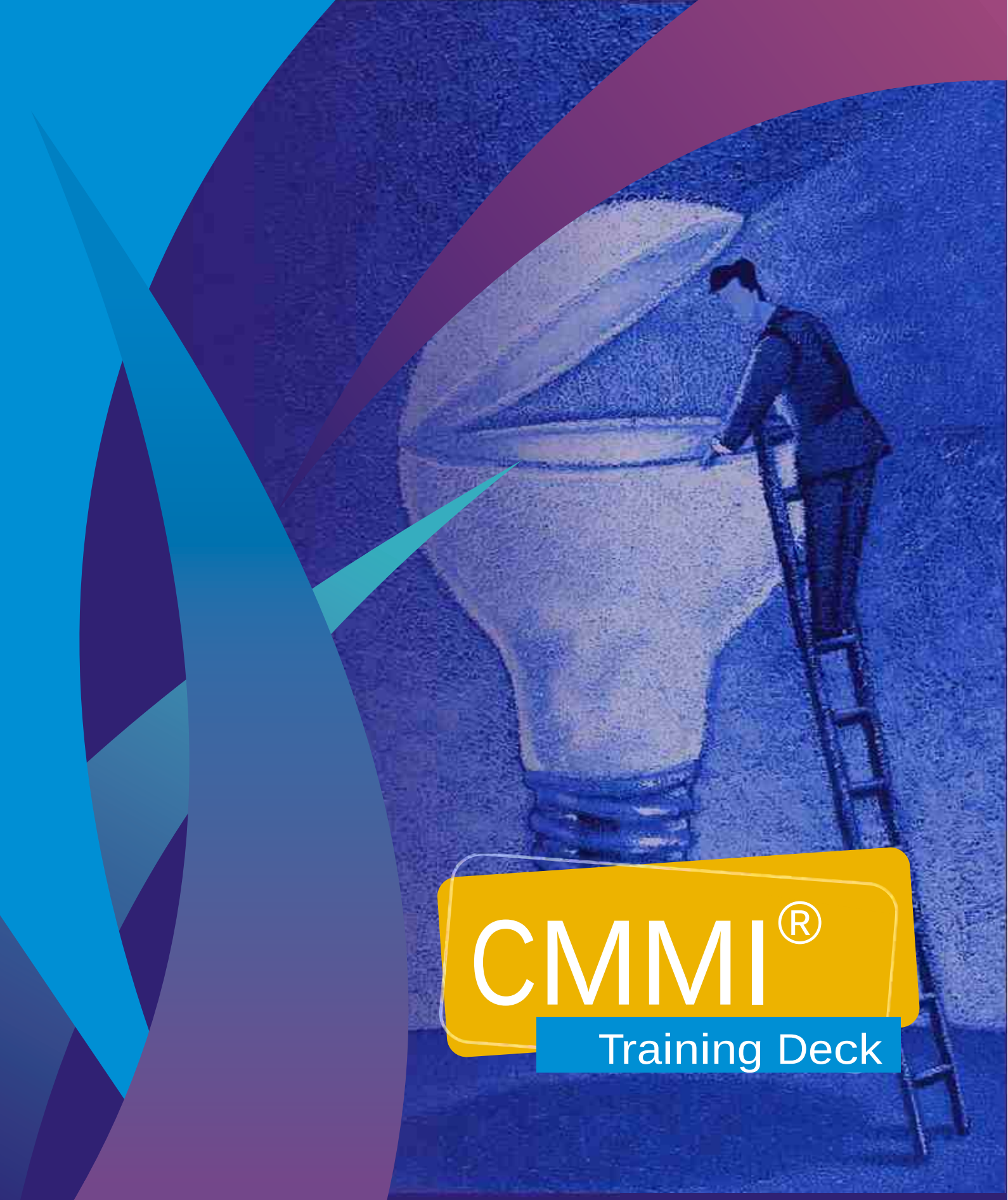

CMMI®

Training Deck

QAI

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QAI USA
Windsor at Metro Center, 2101 Park Center Dr., Suite 200, Orlando, FL 32835-7614
Phone: +407-363-1111
Fax: +407-398-6817
customer_relations@qaiglobal.com

QAI India
1010-12, Ansal Towers, 38 Nehru Place New Delhi - 110019, India Phone: +91- 11- 26219792, 26220580
Fax: +91- 11- 26218974
customer_relations@qaiglobal.com

QAI Singapore
391B Orchard Road #23-01, Ngee Ann City Tower B, Singapore - 238874
Phone:+65-6225-8139 Fax: +65-6225-8137
customer_relations@qaiglobal.com

QAI China
Rm. 1211, No. 498 Guoshoujing Rd. Shanghai Zhangjiang Hi-Tech Park
Pudong New Area, Shanghai, China Zip: 201203
Phone / Fax: +86-21-51314155
customer_relations@qaiglobal.com

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Process Improvement Journey using CMMI®

Process improvement is a systematic and periodic approach to improving the process to make it more effective and efficient i.e. improve quality, timeliness and cost effectiveness. It helps improve quality, and the inputs and outputs that glue these processes together. It is a way of solving process related problems like improving time to market, quality of deliverables, reducing defects etc. Process improvement initiatives impact one or more processes depending on the objective to be achieved. Process improvement can be done at multiple levels for a process, a project, a function, a division, a business unit, entire organization.

One of the most critical ingredients for a successful process improvement initiative is competent people. QAI's CMMI® trainings help in equipping the participants on all elements related to process improvement initiative, quality concepts, CMMI® model and Process Area related aspects.

About CMMI®

The Capability Maturity Model® Integration (CMMI®) has evolved from the learning, feedback and experience of software organizations across the world that deployed various models (ISO, CMM®, etc.) for improving their processes. The CMMI® Product Suite is at the forefront of process improvement because it provides the latest best practices for product and service development and maintenance.

The CMMI® models improve the best practices of previous models in many important ways. CMMI® best practices enable organizations to do the following:

- More explicitly link management and engineering activities to their business objectives
- Expand the scope of and visibility into the product lifecycle and engineering activities to ensure that the product or service meets customer expectations
- Incorporate lessons learned from additional areas of best practice (e.g., measurement, risk management, and supplier management)
- Implement more robust high-maturity practices Address additional organizational functions critical to their products and services More fully comply with relevant ISO standards

Levels of Engagement

Given below are the 3 levels of possible engagements that QAI can have with the organization starting from basic understanding of concepts using elearning to mentoring based customized interventions.

Advanced	• Coaching/workout led • Typically customized interventions • Normally un-canned but can be canned on need basis
Intermediate	• Instructor Led Trainings • Canned workshops but can be customized on need basis • Supplemented with exercises, scenarios and case studies
Basic	• Eleaning led • Canned sessions • Self paced • Built in evaluation

Gearing up for CMMI®

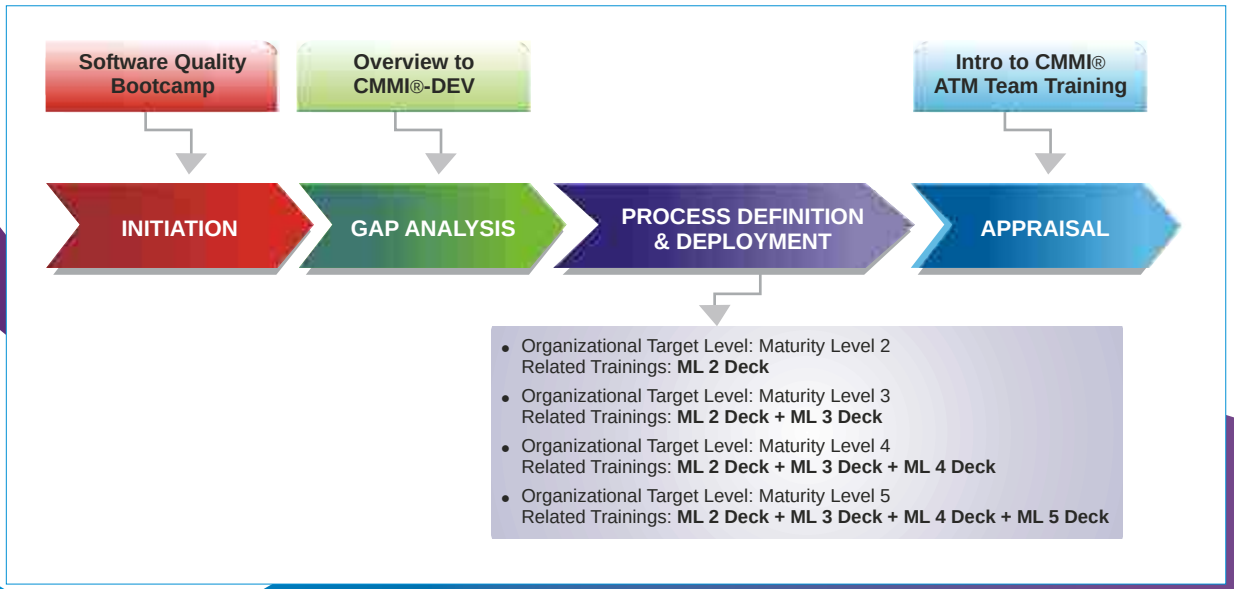
The complete CMMI® training deck has been divided into 4 steps:

Initiation: Focuses on setting up the foundation for quality and process improvement. To help participants understand the terms, concept and philosophy behind quality and process improvement.

Gap Analysis: Focuses on understanding the spirit and philosophy of the model, and thus be equipped to better understand the current organizational gaps/ strengths w.r.t. the model & create a realistic action plan.

Process Definition & Deployment: Focus of this layer is to help the participants understand the expectations of different process areas and thus be able to define processes for the same and implement the same

Appraisal: This layer focuses on the mandatory trainings that the Appraisal Team Member need to attend to be a part of the SCAMPI appraisal.



Essence of Maturity Level 2:
Instilling basic discipline into project management practices.

ML 2 DECK

Process Areas	ILT	ELearning
• Requirements Management • Project Planning • Project Monitoring & Control • Subcontract Management • Process & Product Quality Assurance • Configuration Management • Measurement & AnalysisR	• Internal Auditor Training • Using Metrics for Effective Management • Test Metrics • Introduction to Requirements Management • Practical Approach to Requirements Management • Estimation Basics • Estimation using FPA • Software Estimation using COSMIC FFP • Test Estimation • Essentials of Software Project Management • Configuration Management • Project Management through MS Project 2007I	• Quality Assurance An overview to Software Configuration Management • Tasks in SCM Process • Basic Concepts of Software Project Management • Project Measurement & Metrics • Basic Concepts & Techniques of Estimation • Measuring the Size of Software Products • Outsourcing Project Work • Size Estimation using FPA • Effort and Schedule Estimation • Effort and Schedule Estimation using COCOMO IIQ

Essence of Maturity Level 3:
Developing technical/engineering practices integrating it with management practices and institutionalizing it.

ML 3 DECK

Process Areas	ILT	ELearning
• Requirements Development • Technical Solution • Product Integration • Verification • Validation • Organizational Process Focus • Organizational Process Definition • Organizational Training • Integrated Project Management • Risk Management • Decision Analysis and Resolution	• Practical Software Risk Management • Peer Reviews • Agile Test Strategies & Management • Estimating with Risks • Test Point Estimation • Writing Testable Requirements • Defining and Validating Requirements • Structured Methods of Software Testing • Effective Software Testing – Test Planning • Effective Software Testing – Test Case Design • Effective Test Case Writing • Requirements Based Testing • Test Process Improvement • V&V – A CMMI Approach	• An Introduction to Software Testing • Test Case Design Techniques • Software Testing Strategies • Risk Management • Process Improvement • Formal Technical Reviews

Essence of Maturity Level 4:
Focus is on quantitatively managing project and organization wide performance

ML 4 DECK

Process Areas	ILT	ELearning
• Organizational Process Performance • Quantitative Project Management	• Quantitative Process Management • Quantitative Project Management Made Practical • QC Tools using MINITAB • Demystifying High Maturity - The Statistical Way	• Quantitative Software Process Management

Essence of Maturity Level 5:
Continuously improve project and organizational capability through innovations & do root cause analysis for common causes

ML 5 DECK

Process Areas	ILT	ELearning
• Organizational Innovation and Deployment • Causal Analysis and Resolution	• Defect Prevention • Innovative Problem Solving • Software Six Sigma	• N.A.

Instructor Led Training Courses

Quality Boot Camp

2 DAYS

Workshop Overview

"Belief Systems Changes need to Precede Behaviour changes"

Quality is everyone's responsibility, be it the development staff or a Quality professional. Each person is accountable for the part of code or project professional artifact or service that he/she is expected to deliver to internal or external customers. And Quality counts, for each deliverable. It is the primary distinguishing factor that imparts that competitive edge. The intensive workshop covers the fundamental concepts of Software Quality. It is meant for every software professional in your organization, since it seeks to familiarize the nominees with crucial Quality concepts. No prior knowledge is required for this workshop. It covers the basics of Quality and strives to sensitize the participants to Quality in the context of Software Engineering so that they can:

- Appreciate Quality and its characteristics
- Have a buy-in for the Quality initiatives in the organization
- Understand the importance of process orientation
- Workshop Objective
- To foster the understanding of the concepts of Quality, Quality Assurance and Quality Control, Process and Process Models and provide:
  - Insight into the use of some of the simpler techniques.
  - Understanding of quality principles and approaches that have emerged from the salient works of Quality gurus.
  - In-depth understanding of Quality models like ISO and CMM®.

Who Should Attend

Anyone interested in getting inducted in to Quality concepts. The workshop also works as a foundation course for professionals wanting to appear for the CSQA examination.

Workshop Outline

- Quality concepts
- Project variables, Quality Control and Quality Assurance, Cost of Quality, Workbench, Product and Process Quality
- Software engineering overview
- Lifecycle phases in the context of Quality implementation
- Quality approaches and models
- TQM, learning from gurus
- Testing
- Reviews / Inspections/ Walkthroughs
- Metrics
- Broad coverage of ISO 9001: 1994, ISO 9001:2000, CMM®, CMMI®
- Quality tools
- Quality models

Workshop Benefits

- Helps understand the concepts of Quality, Quality Assurance and Quality Control, Process and Process Models
- To understand Quality principles and approaches as have emerged from the salient works of Quality gurus
- To get a grasp of Quality models like ISO and CMM®.

An Overview to CMMI®

2 DAYS

Workshop Overview

The Capability Maturity Model Integrated (CMMI® for Development Plus IPPD Ver 1.2) is an integrated model to propel process improvements in systems engineering and software engineering. Using this model, organizations will be able to coordinate efforts to improve its capability in both disciplines.

The overview to CMMI® for Development Plus IPPD Ver 1.2 course introduces participants to CMM® Integrated Model and its fundamental concepts. The course discussion emphasizes understanding of the five maturity levels and the 22 Process Areas (PAs) of the model. The course details two representations, namely: Staged and Continuous representation

Workshop Content

Day 1

- Introduction
- CMMI® Framework
- Structure of CMMI® Development
- The Staged Model
- CMMI® Road Map & Appraisals
- Maturity Level 2 Process Areas

Day 2

- Maturity Level 3 Process Areas
- Maturity Level 4 Process Areas
- Maturity Level 5 Process Areas
- Maturity Level 4 Process Areas
- Maturity Level 5 Process Areas

Who Should Attend

- Organizations planning for CMMI® for Development Plus IPPD Ver 1.2 appraisal
- Organizations planning for transition from current SW CMM® level to CMMI® for Development Plus IPPD Ver 1.2 appraisal.
- SEPG(SM) / Appraisal Team Members

Workshop Benefits

The workshop will help the participants to: Understand the CMMI® framework Understand the detailed requirements of the process areas in the CMMI® Make valid judgments regarding the organization's implementation of process areas Identify issues that should be addressed in performing process improvements using the CMMI®

Internal Auditor Training

2 DAYS

Workshop Overview

This course has been designed to train Software professionals in the Principles and Practices of Auditing the organization's Quality System also called process audits. The course shall prepare potential Internal Quality Auditors to conduct, report and audit for compliance to - Predefined QMS and a standard or a model like CMM®, ISO 9001-2000, which is being followed in the organizations.

The course will help you to devise, plan and maintain an effective internal audit program in a software organization. It shall encourage the acquisition of sound and constructive audit skills, and initiate process improvements through correction of non-conformities and preventative actions.

Who Should Attend

The course has been designed for those wishing to :

- Become Internal Quality Auditors (for auditing of software process compliance)
- Acquire sufficient appreciation of internal auditing of processes in a software company
- Enhance Quality through and effective internal audit process
- Extend and develop their previous knowledge of quality, systems and auditing skills
- Use the auditing skills for ISO 9001-2000 or CMM® implementation

Workshop Outline

The program for the workshop covers the following topics:

- Quality Concepts
- Quick recap of CMMI®
- Quick recap of ISO
- The Audit System
- Audit Planning
- Checklists A
- udit Investigation
- Recording Findings
- Audit Reporting
- Corrective Action and Follow-Up

Pre Requisites

- Understanding of Software Project execution process / Software Engineering concepts
- Prior understanding of the ISO 9001-2000 & CMM® model is preferred

Using Metrics for Effective Management

2 DAYS

Workshop Overview

Building a metrics driven business is a Critical Success Factor for the Customer Contact Centers. Data collection is merely a means to an end, the end being management based on numbers and therefore more objective. This, in turn, calls for an understanding of not only what to measure, but also of how to measure. Converting data to information, therefore, is an important skill for every call center manager. This workshop will enable you to identify, measure and track the critical metrics for your business, and to use them to launch successful improvement efforts.

Who Should Attend

- Quality Heads
- Operations Managers
- Transition managers
- Team Leaders
- HR Managers

Workshop Benefits

This workshop will help participants:

- Appreciate the importance of Metrics driven management.
- Create metric dashboards at various levels in the organization.
- Learn how to create a data collection plan.
- Understand how the data collection process is related to people, processes and technology.
- Identify critical metrics for your business environment.
- Apply Six Sigma tools and techniques to the data collection and analysis process.
- Become aware of industry best practices and benchmarks.

Workshop Content

- Data in a contact center - Sources and Types of data
- Information: Making sense of data.
- Contact Center Metrics: Strategic and Tactical.
- Importance of a metric blueprint and management dashboards at each level.
- The role of SLAs in metric preparation.
- Critical Process Metrics: tracking and analyzing data.
- Creating a metrics dashboard.
- Handling Data and Information overload.

Test Metrics

1 DAY

Workshop Overview

What can't be measured can't be managed!

It is essential for test professionals to know how their testing project is progressing and what the quality of the product they are testing is. Metrics and Measurements is a key aspect in both project and test management.

This workshop is based on imparting participants with the principles, concepts and importance of Software Test Metrics

Workshop Benefits

Completion of the course demonstrates participant's ability to:

- Understand the principles of good metrics
- Understand the steps involved in identification of applicable metrics
- Identify the metrics applicable for the project from a test team perspective
- Develop metrics for Testing in the organization
- Use the metrics and analysis techniques for test activities
- Develop improved organization specific metrics program

Workshop Content

- Concept of Measurement
- Setting up of Measurement Program
- Requirements Testability Metrics
- Case study
- Software Testing Metrics

Who Should Attend

The target audience for the program are professionals with minimum of two years of experience with regards to various phases of Software Development Life Cycles, and should be involved with any / all / either of the functions given below:

- Project Management
- Delivery
- Testing
- Quality Process Engineering
- Software Quality Assurance and
- Requirements Engineering and Management

Introduction to Requirements Management

2 DAYS

Workshop Overview

Introduction to Requirements Management provides 2 days of training in requirements engineering and management. The course focuses on eliciting and managing the changing requirements of a project; analyzing the problem, defining the product vision and feature requirements, defining software requirements with use cases, and requirement attributes, and maintaining traceability, change management, and impact analysis for project scope management. In class exercises will give students practical experience in working with requirements.

Workshop Benefits

Completion of the course demonstrates participant's ability to:

- Understand the definition, sources, statistics, common issues, and benefits of requirements
- Understand how to identify the stakeholders
- Understand the requirements life cycle
- Understand the Requirements development, Management and Traceability
- Understand the Types and Classes of Requirements
- Understand the Requirements Engineering Process

Workshop Content

- Software Requirements – The Basics
- What, Why, Who, When, How to of Requirements?
- Types of Requirements
- Classes of Requirements
- Requirements Engineering process
- Requirements Elicitation
- Requirements Analysis
- Requirements Specification
- Requirements Validation
- Requirements Management and Traceability

Who Should Attend

This workshop is focused on the training needs of Software Test Professionals.

Practical Approach to Requirements Management

2 DAYS

Workshop Overview

Today, many organizations recognize Requirements form the basis of the initial estimates and plans; they also form the basis on which the software product is built and validated. The workshop takes a comprehensive look at Software Requirements Management, examines key elements of the Software Requirements Management program and identifies pitfalls where many programs have failed. It presents the techniques that have proved successful in real-world programs, methods for implementing them and strategies for determining if the techniques are being effectively implemented.

Workshop Benefits

While emphasizing on the need for requirements management, the course focuses on the fundamentals of requirements management and how they relate to the system development life cycle from writing the requirements to testing. The objective of this course is to improve the likelihood that products being constructed in Internet time satisfy customer needs.

Who Should Attend

- Software Engineers
- Business Development Personnel
- Project Managers
- Any practitioners interested in upgrading their skill set on Requirement Management

Workshop Content

- Introduction
- Why do Requirements Management? Defining requirements
- The Requirements Management Process - Scope and terms- requirements management in the overall development cycle - Commitment Planning - Requirements Gathering –Requirements Clarification (Preliminary Analysis) - Release Planning (Requirements triage) - Requirements Specifications and Verification – Commitment Acceptance
- Introduction to Requirements Activities - Definitions - Role in Development - Types of Requirements Activities- Uniqueness of Development in Internet Time
- Types of requirements and Requirements Characteristics
- Requirements Elicitation - Introduction - Survey of Techniques- Strategies for Rapid Development - Summary and Comparison
- When is Each Technique Most Applicable?
- Requirements Triage - Introduction - How to Do Triage – Tradeoffs Between Requirements - Schedules and Costs - Tradeoffs Between Requirements, Schedules, Costs, Risks, and ROI - Strategies for Rapid Development - Summary
- Requirements Specification - Introduction - Attributes of a Well-Written SRS - Strategies for Rapid Development
- Manage System Scope, Refine the System Definition
- Manage Changing Requirements - Controlling Requirements “Creep”- Practical Reviews/ Walkthroughs - Role of Inspection Establishing Requirements Matrix and Traceability
- Requirements Across the Product Life cycle
- Institutionalizing requirement management
- Future Directions: Use-Case Modeling
- Managing Software Requirements - Cost/Schedule –Establishing SCM Plan - Dealing with Inserting New Requirements – Ripple Effects

Estimation Basics

2 DAYS

Workshop Objective

Introduce estimation basics to the participants in order to measure, size and scope-out a software-centric project. Helps the participant to understand the various estimation techniques prevalent in the market. "You cannot manage what you cannot measure."

Workshop Benefits

- Optimal resource allocation for cost-effective development: Software size is an important item in many software-centered project management and out-sourcing contracts. Many calculated metrics like productivity and defect rates are functions that have software size as one of their domains.
- Better project tracking: A quality size estimation process provides you with the ability to track the progress of the project through techniques like the earned value analysis.
- Better planning: The most important reason to estimate software size is to provide the ability to make better project plans. A proper size estimate leads to a quality development plan. With a proper estimate of a project size, there exists a basis for determining the effort required and for calculation of a price quotation. Once the required effort is determined, a schedule can then be produced accordingly.

Workshop Content

Introduce theory and practice on the following:

1.Introduction:Course Overview

2.Software estimation: a craft or a science? Definition of the software estimation problem, Terminology and concepts, Elementary terms in statistics and probability, Built to fit

3.Life Cycle Phases and Estimations Overview of the fundamental software development process, Requirements: estimating projects when requirements are known and when they are not known, Estimate scope and effort, Estimate schedules and time, Estimate costs and resources, Estimate quality and reliability, Change Management

4.Estimation Techniques Preliminary estimates, targets, and ranges Calibrating an estimate for your team and organization Estimation by analogy Estimation by expert judgment Estimation by module breakdown Estimation by function and feature points Techniques (COCOMO, statistical methods, etc.)

5.Estimation Repositories Metrics What to collect

6.Building Estimates Parameters affecting Estimates Estimate refinement over the course of a project

7.Case Study and Exercises

Who Should Attend

The intended audience for this course are:

Software professionals, Project Managers, Team Leaders, Quality Control & Quality Assurance Team, Senior Developers responsible for estimation

Estimation Emphasizing - FPA

2 DAYS

Workshop Overview

"Software development costs are signifi cant. And yet for 25 years now, 200 to 300 per cent cost over-runs and up to 100 percent time slippages have been common, frequent, almost universal. It would seem that software development had no pattern, no process, no methodology, or no characteristic behavior."

The course is a mix of case driven, instructor-led, and self paced learning, designed to enable participants learn, experiment and implement the concepts involving application of function point technique for size estimation.

To enable a thorough hands-on of the concepts taught in the class room, the course is structured around a set of formal case studies.

Who Should Attend

The target audience for the program are professionals with minimum of two years of experience with regards to various phases of Software Development Life Cycles, and should be involved with any / all / either of the functions given below:

- Program Management
- Project Management
- Delivery
- Pre Sales and Marketing
- Quality Process Engineering
- Software Quality Assurance and
- Requirements Engineering and Management

Workshop Benefits

Completion of the course demonstrates participant's ability to:

- Understand the principles of good estimation
- Understand the steps involved in a Function Point estimation
- Apply the techniques for Function Point estimation
- Develop metrics for size estimation in the organization
- Know the tools available in the market for estimation

Workshop Content

- Introduction to Estimation
- Overview to Function Points
- Important Concepts
- Case Study Debriefi ng and Case Practice 1
- Counting Data Functions and Case Practice 2
- Counting Transaction Functions for the case study and Case Practice 3
- Determine Value Adjustment Factor
- Calculate Adjusted Function Points and Case Practice 4
- Overview to Full Function Points
- Additional Important Concepts
- COSMIC FFP – Measurement Phase [Rules and Methods]
- CoCoMo 2.0 Estimation Model : Concepts
- CoCoMo 2.0 Estimation Model : Implementation Approach
- Delphi Wide Band Estimation Technique
- Summary and Closure : Sins of Estimation

Software Estimation using COSMIC FFP

2 DAYS

Workshop Objective

This course is designed for all professionals who have a need to estimate by using accepted international standards as commonly required by many Governments and enterprises for out-sourced contracts.

After the completion of the course, the participants would be able to:

- Understand the principles of good estimation
- Understand and apply techniques for COSMIC FFP

Workshop Benefits

Provides an easy and accurate way to size requirements documents using Full Function Point

Workshop Content

1.Overview to Estimation

- Need for Estimations
- Meta Process for Estimation
- Life cycle phases and Estimations
- Background to Estimation Techniques
- Techniques for Size Estimation
- Techniques for Effort Estimation

2.Differences between FFP and other methods

3.Overview to Full Function Points

- Evolution of the concept
- Need for Full Function Point
- Relationship with other estimation mechanisms
- Objectives of Full Function Points
- Benefits of Full Function Points

4.Cosmic FFP – Measurement Phase [Rules & Methods]

- Identifying the sub processes
- Applying the measurement function
- Aggregating Measurement Function Results

Test Estimation

2 DAYS

Workshop Overview

The course is a mix of case driven, instructor-led, and self paced learning, designed to enable participants learn, experiment and implement the concepts involving application of Test Point technique for size estimation. To enable a thorough hands-on of the concepts taught in the class room, the course is structured around a set of formal case studies.

Workshop Benefits

Completion of the course demonstrates participant's ability to:

- Understand the principles of good estimation
- Understand the steps involved in a Test Point estimation
- Understand the Test Size, and Effort Estimation based on UCP
- Understand the Test Size, and Effort Estimation based on FP
- Apply the techniques for Test Size and Effort estimation
- Develop metrics for size estimation of Testing Projects in the organization

Workshop Content

Introduction to Estimation

- Techniques for Size Estimation
- Techniques for Effort Estimation
- Techniques for Schedule Estimation

Overview to Test Points

Some Important Concepts

- System Decomposition
- Process Flow Chart Test Point Estimation

Case Study Debriefing:

Determine the counting scope and application boundary for the case:

- Definition of the purpose of count
- Definition of the counting scope
- Definition of the application boundary
- Boundary Rules
- Counting scope procedures
- Application boundary procedures

Dynamic Test Points

- Understanding Function Dependent Factors
- Understanding Quality Requirements related to Dynamic Quality Criteria
- Counting the Dynamic Test Points

Who Should Attend

The target audience for the program are professionals with minimum of two years of experience with regards to various phases of Software Development Life Cycles, Software Testing, and should be involved with any / all / either of the functions given below:

- Program Management
- Project Management
- Software Testing
- Delivery
- Pre Sales and Marketing
- Quality Process Engineering
- Software Quality Assurance
- Requirements Engineering and Management

Essential Project Management

2 DAYS

Workshop Overview

QAI's Essential Software Project Management (ESPM) course was first introduced a few years ago. Its extraordinary success can be gauged by the fact it has been offered to full houses 22 times as public seminars and 28 times as in-company programs in organizations like Mahindra British Telecom, Modi Xerox, Wipro Systems, Intergraph, Hughes Software, Sonata Software in this short span. And with every offering the program has evolved based on participants' feedback.

Essential Software Management Principles can transform a chaotic endeavor into an orderly step by step process. ESPM provides a framework for Results Management.

The workshop provides a conceptual and practical framework for planning, tracking and controlling software projects. Workshop attendees will be able to understand the statics and dynamics of development and learn about tools and techniques to manage in this context.

Workshop Benefits

ESPM prepares project managers to succeed by demystifying Software Project Management. It addresses the business of software development as a logical process that can be effectively. The workshop provides a conceptual and practical framework for planning, tracking and controlling software projects.

Workshop Content

The workshop provides a conceptual and practical framework for planning, tracking and controlling software projects including:

- Intro to Projects, Management, & Project Management
- Requirement Definition
- Estimation
- Risk Management
- Planning
- Project Monitoring and Control and Reporting
- Team Management
- Project Closure
- Case studies will be done for the following modules:
- Introduction
- Requirements Management
- Estimation
- Risk Management
- Project Planning

Who Should Attend

- Project Managers
- Module Leaders
- Process Group Members
- Team Leaders
- Team Members Trainers

Configuration Management

1 DAY

Workshop Overview

Watts Humphrey in “Managing the Software Process” states -

“The most frustrating software problems are often caused by poor configuration management. The problems are frustrating because they take time to fix, they often happen at the worst time, and they are totally unnecessary. For example, a difficult bug that was fixed at great expense suddenly reappears; a developed and tested feature is mysteriously missing; or a fully tested program suddenly doesn't work.”

Effective Software Configuration Management helps to reduce these problems by identifying items, which need to be controlled for changes, systematically controlling changes, and maintaining traceability of changes throughout the Software Development Life Cycle. By applying Software Configuration Management techniques software development teams can coordinate their efforts and integrate change effectively throughout the operational life of the software.

Who Should Attend

This workshop is suited to a wide range of professionals grappling with complex or evolving systems. This includes:

- Project Managers
- Business Managers
- Quality Managers
- Technical Professionals

Workshop Benefits

This workshop explains the underlying concepts of configuration identification, baselines, configuration control, configuration status accounting, and configuration audits. It provides practical knowledge of techniques and tools for establishing and maintaining the integrity of the items/work products and baselines that are developed or used while developing the software product. These work products include the products delivered to the customer, designated internal work products, acquired products, tools and other items that are used in the creating and describing these work products.

These Software Configuration Management techniques apply equally to the development and support of information systems, commercial software products and embedded applications.

The workshop also familiarizes participants to the Configuration Management requirements of CMMi®.

Workshop Content

- Introduction and Overview
- The Identification Function: A Basis For Change
- The Control Function: Managing Change
- Version and Release Management
- Preparing and updating a SCM Plan
- Functionality of tools

Project Management through MS Project 2007

2 DAYS

Workshop Overview

The course is designed for individuals who want to familiarize themselves with MS Project Professional 2007 and begin planning their projects in MS Project 2007. The course is based upon the best practices of project management as suggested by the PMBOK® from PMI®. The program is an instructor led classroom session with self-paced learning through hands-on practice, which is highly interactive by means of practical exercises and case studies.

What to Bring to the Class

Laptop Computer with appropriate version of MS-Project and MS-Office or access to a PC with the above mentioned software pre-loaded.

Who Should Attend

The course is targeted at individuals who want to use MS Project Professional 2007 to manage projects effectively should enroll in this course, including:

- Project Managers
- Project Leads
- Team Leads
- Team Member
- IT support executives
- PMO Staff
- Manager of Project Managers

Workshop Benefits

At the end of the workshop you’ll be able to:

- Understand the basics of Project Management
- Navigate the Project 2007 interface
- Set up a new project in Project 2007
- Enter and modify milestones and tasks
- Enter duration or work estimates
- Enter dependencies between tasks
- Enter deadlines and constraints
- Define and assign resources
- Level resource utilization
- Optimize the schedule
- Create a Baseline
- Report and track progress
- Generate reports
- Customize field, views, tables and reports within MS Project
- Customize Gantt Chart
- Work with master projects and subprojects

Workshop Content

- Introduction
- Basics of Project Management
- Scheduling Concepts
- Cost Management Concepts
- Introduction to MS Project
- Project Plan Development
- Resource Deployment
- Project Costing
- Progress tracking and Reporting
- Multi-Project Management
- Reporting
- Customization

Practical Risk Management

1 DAY

Workshop Overview

Everybody agrees that software risk management, if done properly, is a good thing to do. Who would not want to identify potential problems early enough to make a difference in the ultimate quality of the product? Barry Boehm believes that “Risk Management helps people avoid disasters, avoid rework, avoid overkill, and stimulate win-win situations on software projects”. According to Dr. Charette, “Risk Management reduces a project’s risk exposure and reducing risk exposure makes good business sense”.

Workshop Benefits

This course provides a conceptual and practical understanding of the methods and tools for Identifying, Analyzing and Managing Software Risks. The course is developed using tried and tested approaches to software risk management. It draws upon QAI’s real life experience and the knowledge of various thought-leaders like Barry Boehm, Capers Jones, Robert Charette and Dale Walter Karolak. The course is greatly influenced by Software Engineering

Who Should Attend

The course is ideal for professionals directly involved with software projects, such as, project managers, team leaders and software engineers. Software Engineering Process Group (SEPGSM) members, Software Quality Assurance (SQA) team members and Testing team members can also benefit from attending this course. Institute’s pioneering efforts in the area of Continuous Risk Management.

Workshop Content

- What is Risk and Software Risk Management?
- Motivation for Software Risk Management
- Reasons we don’t do Software Risk Management SM
- SEI’s Risk Management Paradigm
- Identifying and recording software risks
- Risk Taxonomy
- Tools and methods for identifying and recording risks
- Analyzing and classifying risks
- Tools and methods for analyzing and classifying risks
- Risk Management Plans
- Tracking and controlling risks
- Risk Metrics
- Effective Communications: An enabler to risk management
- Introducing Software Risk Management in your project
- Introducing Software Risk Management in your organization
- Risk Management and the SDLC
- Risk Management in the CMM®
- Other useful tools for successful risk management
- Conclusions and wrap-up

Note: Individual and team exercises will be supported by appropriate papers, case studies and technical reports-to be distributed and discussed as part of the course

Peer Reviews

1 DAY

Workshop Overview

Fagan’s Inspection Method is a six-step highly structured means of performing reviews on intermediate and final software products (specifications, code, documentation, etc). Developed by Michael Fagan, when at IBM, this formal technique is considered amongst the most powerful and effective quality control tool used. Peer Reviews is one of KPA’s (Key Process Areas) of Level 3 of the Software Capability Maturity Model® of the Software Engineering Institute (CMM®). Organizations which have effectively implemented an Inspections process have reported 20% - 40% increase in productivity over the life cycle and considerable reduction in the development time. It also leads to a significant improvement in quality and team spirit.

Workshop Benefits

This workshop will provide participants with a clear understanding of the Inspection technique, differentiating it from other review techniques. The workshop will impart skills for participating in an Inspection as a Leader, Recorder and Author. It will also provide an understanding of the issues involved in implementing Inspections.

Workshop Content

- Quality Concepts - Definition of Quality - Quality Assurance versus Quality Control - Relative Cost of Defects • Reviews - An Overview - Types of Reviews - Review Myths
- Introduction to Fagan’s Inspection Technique - Background - Definition and Objectives - Benefits - Process Overview Fagan’s Inspection Technique - Process Planning - Kick - off (Overview) - Individual
- Checking (Preparation)- Logging - Rework - Follow-up
- Fagan’s Inspection Techniques - Roles - Inspector –Inspection Leader - Reader - Recorder - Author
- Case Study - 1 - Defect Classifi cation - Implementation Issues - Inspection Metrics
- Case Study - 2
- Summary

Participants will perform two code Inspections through case studies. They will also view a QAI video on - ‘Conducting an Inspection’.

Who Should Attend

- Project Managers
- Programmers
- Testers
- Designers
- Analysts
- Quality Assurance personnel

Agile Test Strategies & Management

2 DAYS

Workshop Overview

This course provides two days of experience in managing and controlling Agile Software Testing projects, looking at the underlying philosophy and motivation for this trend in software testing / development and examining the core practices.

The course does not teach any specific tool or technique but provides an introduction to the Agile Methods that will enable the participants to make informed decisions regarding practices that will be effective for their own organizations.

Workshop Benefits

Completion of the course demonstrates participant's ability to:

- Understand the basic concepts of Agile, Scrum and Sprints
- Understand and practice the method of estimation in Agile
- Understand Agile Testing Strategies and Planning
- Know about Test Team dynamics

Who Should Attend

- Participants are expected to have some understanding of basic business practice, and to have been exposed to aspects of the Software Development Lifecycle and Software Testing.
- Participants should have some experience in guiding or leading teams and/or projects.

Workshop Content

Module-1: Agile concepts

Module-2: The Agile Life cycle

- The Scrum process

Module-3: The Scrum Team

- Role of testers in Scrum
- Dynamics of a Sprint
- Skills requirement for testers

Module-4: Agile Engineering practices

Module-5: Agile testing strategies

Module-6: Test strategy planning

- Deciding types of tests

Testing for various life cycle models

- Test planning for a Release

Module-7: Testing in iterations

- Validating bugs

Module-8: Estimation in Agile

- Facts about Estimation
- Agile estimation strategy

Module-9: Testing outside sprints

- Planning for Regression, Workflow, System acceptance testing

Module-10: Test metrics

- Some useful test metrics for Agile projects
- Metric collection and analysis

Module-11: Test automation

- Test automation strategies
- Automation types and tools

Case Studies and exercises

- Release planning with specific testing requirements
- Estimation in Agile – Wide band Delphi and planning poker
- Sprint planning meeting
- Execution of a 90-min sprint

Estimating with Risk

3 DAYS

Workshop Objectives

This course covers aspects related to performing reliable and accurate estimates for in-house and out-sourced projects for efforts, schedules, costs, staffing, and risks that are critical to successful project outcomes. It builds upon the courses of Estimation Basics.

Who Should Attend

- Project Managers
- Business Analysts
- Pre Sales
- Delivery Heads

Workshop Benefits

The benefits of this course are to provide the participants' with a thorough understanding of current state-of-art estimation methods and experience in successfully using estimation methods within their own enterprise context. Specific benefits include:

- In-depth understanding of all dominant methods employed in software industry throughout the world.
- Use of Estimation techniques specific to Life cycle phases
- Excellent planning: The most important reason to accurately estimate software size is to provide the ability to make effective project plans. Accurate and reliable size estimate leads to excellent quality development plan. With an accurate estimate of project size, one will be able to determine optimum effort required and the calculation for a winning price quotation. Once the optimal effort is determined, accurate schedules can then be produced and implemented.

Workshop Content

1. Introduction
- Course Overview

2. Life Cycle and Software Estimation
- Development Life Cycle
- Requirements and its impact on Estimations
- Agile and lean methods
- The spiral model and other iterative approaches
- Change control and its impact on cost estimation

3. Estimation techniques for different types of projects:
- Development
- Support/Maintenance
- Production Support
- Testing

4.Task Complexity / Program complexity method – suitable for Support type of projects

5.Factors affecting Estimation

6.Leading edge estimation methods and tools,
- Evaluating world-class Estimation Methods and Tools
- Review of the most common tools: COCOMO II, SLIM
- Risk based Estimations using Monte Carlo methods

7.Validating and auditing estimation data

8.Estimation process institutionalization and implementation.

Test Point Estimation

2 DAYS

Workshop Overview

Estimations have traditionally been an area of business interest as they have a direct impact on the bottom line. As approximations and estimations go hand in hand, this science is often seen as a price to win. This course is designed to enable participants learn, experiment and implement the concepts involving application of Test Point technique for size estimation.

To enable a thorough hands-on of the concepts taught in the class room, the course is structured around a set of formal case studies.

Who Should Attend

The target audience for the program are professionals with minimum of two years of experience with regards to various phases of Software Development Life Cycles, and should be involved with any / all / either of the functions given below:

- Program Management
- Project Management
- Software Testing
- Delivery
- Pre Sales & Marketing
- Quality Process Engineering
- Software Quality Assurance
- Requirements Engineering & Management

Workshop Benefits

After the completion of the course, the participants would be able to:

- Understand the principles of good estimation
- Understand the steps involved in a Test Point estimation
- Understand the Test Size, and Effort Estimation based on UCP
- Understand the Test Size, and Effort Estimation based on FP
- Apply the techniques for Test Size and Effort estimation
- Develop metrics for size estimation of Testing Projects in the organization

Workshop Content

- Introduction to Estimation
- Overview to Test Points
- Covering Important Points
- Case Study Debriefing
- Dynamic Test Points
- Static Test Points
- Determine Environmental Factor
- Determine Productivity Factors
- Summary & Closure :: Sins of Estimation

Writing Testable Requirements

2 DAYS

Workshop Overview

Substandard requirements increase the cost and time-lines of system development. Consider that 45-56% of system errors are inserted during Requirements definition, and that it costs up to 40% more to correct errors discovered during testing versus the Requirements phase. Writing testable requirements focuses on problem and cost avoidance. This workshop combines lecture and individual and group workshops presented in an interactive format.

Workshop Benefits

Real world examples are utilized to make the information relevant. Learned skills are reinforced in exercises based on the current needs of the attendees, specifically focused on transitioning the skills learned in this workshop to their own work environments.

Workshop Content

The content of the workshop is based on proven writing concepts and tailored to the workshop participants based on their real-world experiences. In this way the participants leave with immediately usable techniques that they can put into practice upon returning to their organizations.

Who Should Attend

Personnel involved in the identification, writing, review, tracing, and testing of requirements, either as a practitioner or a manager. This would include those with dedicated or mixed roles encompassing software engineering, support, development, testing, configuration management, quality assurance, and user/stake holder.

Defining and Validating Requirements

3 DAYS

Workshop Overview

Failure to properly identify and manage requirements is the single most consistent cause of project failure, regardless of project size and organization. The requirements analysis process is defect prone for a variety of reasons. Post-implementation reviews of most information systems projects typically show that 60-75% of all defects encountered during a project, and embedded in the finished systems products, are defects in requirements.

Studies also show a major cost of software development is correcting erroneous and missing requirements. If these changes need to be made to an operational system, they will cost 100 times as much to correct as if requirements are corrected during the requirements gathering phase of software development.

This course covers technically what requirements are and what we really mean by the term “requirements.” It also addresses the challenge of getting valid requirements which is one of the most important issues in avoiding defects. The course further provides a seven-phased process for developing valid requirements and presents effective tools and techniques for defining and validating those requirements.

Who Should Attend

- Project Leaders
- IT Users
- IT Customers
- Business Analysts Developers

Workshop Benefits

The workshop provides participants a better understanding of:

- The requirements review process
- How requirements fit into the software development life cycle
- How prevention is key to reducing the costs associated with software development
- Why requirements defining and validation must be a team effort

Workshop Content

Section 1 - Introduction
Section 2 - Requirements Advocacy
Section 3 - QAI's Requirements Model
Section 4 - Identifying Business Needs
Section 5 - Analyzing Business Requirements
Section 6 - Analyzing Implementation Requirements
Section 7 - Analyzing Constraint Requirements
Section 8 - Resolving Conflicts and Tradeoffs
Section 9 - Verifying Requirements
Section 10 - Validating Requirements
Section 11 - Managing Requirements

Structured Methods of Software Testing

3 DAY

Workshop Overview

This is a foundation course of IT software testing concepts. It provides an excellent overview of the entire software testing professional area. In the Boot Camp for Software Testers Course you will learn the basics needed to become a software tester professional and how testing fits into the software development life cycle. Find out what it takes to be a successful software tester and how testing can add significant value to software development. You will learn the fundamental steps in the testing process: planning, specification, implementation, evaluation, and reporting. In addition, you will study all of the basic aspects of software testing, including a comprehensive overview of tasks, methods, and techniques for effectively testing software in a world-class testing organization.

Workshop Benefits

The course is designed to provide a macro overview of the software testing area by covering roles and responsibilities, test techniques, test planning, and the different types of testing commonly performed. It provides an excellent overview of the entire software testing professional area. It also provides an excellent review for those planning to pursue the Certified Software Test Engineer (CSTE) professional designation.

Workshop Content

- Software Testing Principles and Concepts
- Test Planning
- Executing the Test Plan
- User Acceptance Testing
- Top Ten Software Testing Challenges
- Completing Your Personal Plan of Action

Who Should Attend

Individuals with test responsibilities such as:

- Software Test Managers
- Supervisors
- IT Quality Control professionals who are engaged in software testing at different levels

Effective Software Testing - Test Planning

2 DAY

Workshop Overview

This "how-to" workshop is designed for individuals having responsibility to test software systems. The material is present in a step-by-step format from performing risk analysis through the final test report. The emphasis on this course is test planning.

Each step of the test process includes test templates and checklist. The course begins by having attendees develop a definition of what effective testing means; and concludes by having the attendees develop an action plan to improve software testing in their IT organization.

This is an intermediate level course for an individual who has some test experience and is interested in improving their level of effectiveness and efficiency in testing techniques and test methodology. It is advantageous if the attendee has had at least two or more years of practical experience in software testing, although it is not necessary.

Workshop Benefits

The workshop attendees will learn how to develop an action plan to improve software testing in their IT organization.

Workshop Content

Section 1: Define effective software testing fundamentals.

Section 2: Identify risk associated with software testing.

Section 3: Help you build an effective test plan.

Section 4: Show you how to execute an effective test plan.

Section 5: Record and analyze test results.

Section 6: Define and build an effective test report.

Who Should Attend

- Software Test Managers
- Software Testers
- Software Developers
- Business Analysts
- Project Leaders
- Customers/Users

Effective Software Testing - Test Case Design

2 DAY

Workshop Overview

This "how-to" workshop is intended to help the software quality professional better understand some of the strategies, techniques and models that can be utilized in test case design.

The primary focus will be on Equivalence Partitioning, Boundary Analysis and Decision Tables. Most quality analysts and test engineers have heard these terms but do not make the most of their capabilities. We will cover, step by step, how to perform each.Attendees will practice their new skill sets with supporting exercises. We will also discuss other test case design considerations including test level strategies (unit, integration, system, user acceptance), testing beyond functional requirements (e.g., usability, regression, configuration, performance, security, installation/un-installation), high-level strategies such as risk based, state-based, Implementation-based, and how the Unified Modeling Language (UML) development models can support test case design, including the value of Use Cases to today's quality professional.

Workshop Benefits

This workshop provides practical insight into the design of test cases and the attendee will leave with the ability to effectively create test cases that will allow efficient testing of the application.

Workshop Content

Section 1:
Present test strategies, techniques and models to support test case design with a specific focus on:

- Equivalence Partitioning
- Boundary Analysis
- Decision Tables

Section 2:
Review UML development models for test case design

Who Should Attend

- Software Testers
- Software Test Managers
- Software Developers
- Business Analysts
- Project Leaders
- Customers/Users

Effective Test Case Writing

2 DAY

Workshop Overview

The success of testing in any project is dependent on how well the Test Cases are designed, written and maintained for the project. This course outlines the various ways in which Test Cases can be effectively written and traced to its corresponding requirements.

Workshop Benefits

This workshop will help participants:

- Understand the various Test Documents used and the phases in the lifecycle where they are created
- Understand the concept of Test Cases and Test Scenarios
- Generate Test Cases from Requirement Specifications
- Understand and generate a Requirement Traceability Matrix
- Understand the best practices in Test Case writing

Workshop Content

- Introduction to Testing Fundamentals and Test ware
- Fundamentals of Test Case Writing
- Generating Test Cases

Who Should Attend

The course is appropriate for both Novice and Experienced Testers under the following categories:

- Test Engineers
- Quality Assurance Specialists
- Software Knowledgeable Individuals

Requirements Based Testing

1 DAY

Workshop Overview

One of the basic activities in Testing includes comparing of the Expected Output with the Actual Output. The source for getting the Expected Output is the Requirements. Unfortunately, most specifications are not sufficiently detailed to define the Expected Results or Outputs. This course presents a set of practical, yet rigorous, techniques for testing requirements to ensure that your project's requirements are complete, consistent, accurate, and unambiguous.

Workshop Benefits

Completion of the course demonstrates participant's ability to:

- Understand the Requirement Based Testing (RBT) process
- Understand and appreciate the need for Requirement based Testing
- Identify important ambiguities in requirements specifications before coding starts
- Translate requirements specifications into cause-effect graphs to verify accuracy and completeness
- Design a set of test cases to validate that all requirements are implemented
- Quantify and accurately measure the progress of your testing efforts

Workshop Content

- Introduction to Requirement Based Testing
- Initial RBT Steps
- Environmental Data Constraints
- Defining the Test Completion Criteria
- Additional Points of Integration
- Introduction to Code-Based Testing
- Tuning the RBT Process by Project Type
- Management Considerations
- Course Wrap-Up

Who Should Attend

Novice and Experienced Testers such as the following:

- Test Engineers
- Quality Assurance Specialists
- Software Knowledgeable Individuals
- Test Leads

Test Process Improvement

1 DAY

Workshop Overview

This one day workshop provides an insight to the basics of software test automation. The course is designed for those who already have a good understanding of software testing and provides a clear picture on when and how to go in for test automation. The participants will get an insight into the importance of Test Automation in the Testing process, understand the various automation tools available in the market and how to select the appropriate tools for the project requirements.

The course is a mix of case driven, instructor-led, and self paced learning, designed to enable participants learn, experiment and implement the concepts involving application of techniques for size estimation, effort estimation and schedule estimation To enable a thorough hands-on of the concepts taught in the class room, the course is structured around a set of formal case studies.

Workshop Benefits

Completion of the course demonstrates participant's ability to:

- Understand the principles of Process Improvement
- Understand the need for focusing on Testing
- Understand issues faced with Testing Process
- Understand the steps involved in Test Process Improvement
- Build familiarization with Test Process Improvement Models of TPI and TMM

Workshop Content

- Introduction to Process Improvement
- Introduction to Testing Process Models
- Coverage of TPI
- Coverage of TMM
- Coverage of TMMi
- Making Model Choice

Who Should Attend

Professionals with minimum of two years of experience with regards to various phases of Software Development Life Cycles and Software Testing, and should be involved with any / all / either of the functions given below:

- Project Management
- Quality Process Engineering
- Software Quality Assurance

V&V - A CMMI® Approach

1 DAY

Workshop Overview

The meanings and requirements of the terms "verification" and "validation" are often confusing to engineers and project managers. The course is a mix of exercise driven, instructor-led, and self paced learning, designed to enable participants understand and implement the concepts, the definition and implementation techniques for verification and validation.

Workshop Benefits

Completion of the course demonstrates participant's ability to:

- Understand the concepts of Verification and Validation
- Understand the organization and responsibilities of Verification and Validation
- Understand the Definition and Implementation of Verification and Validation processes
- Develop metrics for Verification and Validation in the organization
- Develop improved organization specific Verification and Validation process
- Know the common tools available in the market for Verification and Validation

Workshop Content

- What is Verification?
- What is Validation?
- Objectives of V&V
- Traditional V&V versus CMMI® V&V
- V&V and CMMi® Representations explained
- V&V – Specific Practices explained
- V&V Generic Practices explained
- V&V Planning
- Dynamic V&V
- Elements of V&V Plan
- V&V Execution and Analysis
- V&V in Product Development
- V&V in Project Development
- Tracking and Monitoring V&V
- V&V and Traceability Matrix
- Defect Management
- Tools
- Metrics
- Implementing V&V in a Testing Project
- Summary
- Q&A session

Who Should Attend

The target audience for the program are professionals with minimum of one year of experience with regards to various phases of Software Development Life Cycles, and should be involved with any / all / either of the functions given below:

- Project Management
- Software Quality Control
- Software Delivery
- Pre Sales and Marketing
- Quality Process Engineering
- Software Quality Assurance
- Requirements Engineering and Management

Quantitative Process Management

1 DAY

Workshop Overview

This workshop provides an excellent illustration of how to achieve such goals by using Software measurements and data analysis.

Who Should Attend

It is expected that participants will have some understanding of process and metrics such as:

- Project Managers
- Software Engineers (with at least 3 years experience)
- Software QA Professionals (SEPG/SQA)
- Experienced support professionals (IT support, Training)

Workshop Benefits

The course provides:

- Practical guidelines for implementing metrics and analyzing them using simple statistical methods.
- A defect prevention system, using problem solving tools that have been applied to achieve process improvement and defect prevention in several organizations.
- A method to build an information system in your organization using available metrics and integrate metrics with software project management and thereby establish SPC in your projects.
- Help in Quantitative Process Management, Defect Prevention and Change Management.

Workshop Content

- Business objectives and process characteristics
- Process versus metrics
- Measurement Scales
- Product and Process Metrics
- Creating control charts
- Using EXCEL
- Normal and other distributions
- Understanding variation
- Common causes versus. special causes
- Applying quantitative and statistical techniques in managing projects
- Identifying process and sub-processes for analysis
- Typical metrics used in development projects
- Typical metrics used in maintenance/support projects
- Goal setting, strategy and actions
- Natural limits versus. Goals
- Process capability control charts using project data
- Process stability considerations
- Identifying common causes versus. special causes
- Bringing process under control
- 7 QC tools
- Organization process performance
- Collecting data and Scrubbing data
- Determining organization performance/capability
- Defining performance models
- Implementing mature measurement program
- Understanding QPM and OPP process areas of CMM
- Typical work-products of the practices of CMMI Maturity Level 4 Process Areas
- Implementation framework and Pitfall avoidance

Quantitative Project Management Made Practical

2 DAYS

Workshop Overview

The workshop seeks to share the terminology and concepts behind Quantitative Project Management (QPM), how you can apply quantitative and simple statistical techniques to manage your project more effectively

Workshop includes a mix of lectures, experience sharing and hands –on exercises.

Workshop Benefits

- You will be able to understand principles behinid using quantitative and simple statistical techniques in software projects
- You will be able to understand variation in the process and to use control charts effectively to make decisions and manage the projects effectively
- You will be able to understand how to use organisation performance and performance models capability
- You will know the expectation from CMMI with respect to QPM

Workshop Content

- Introduction
- Overview of quantitative/statistical terms
- Statistical techniques: Understanding Variation – Control Charts, Distributions and Run charts
- Process Performance Baselines and Models
- Tying it all together for Project Management
- Interpreting QPM in CMMI
- Discussion of relationships between CMMI high maturity Process areas: OPP, QPM, OID, CAR
- Summary

Who Should Attend

Staff who are involved in project planning, tracking & monitoring.

QC Tools using Minitab

2 DAYS

Workshop Overview

This workshop provides the understanding on the basics of statistics with an emphasis on collecting correct Measures, Measurement and Metrics and understanding QC tools for data analysis.

The workshop provides hands on experience on sampling/segmentation/stratification of data, and analyzing the data using QC Tools.

The workshop is composed of lectures and scenario based exercises. It provides practical experience to the participant, along with the concept knowledge and usage of MINITAB for implementing the QC tools.

Workshop Benefits

The Basic tools of quality initiate the quality journey and guide the industry towards delivery excellence and continuous process improvement. Process Improvement involves measurement and measurement is integral to the management of organizations, projects, processes, and products. "What cannot be measured cannot be managed" and "What cannot be managed cannot be improved".

Typical challenges faced by organization are realization of benefits after implementing a measurement system. Though organizations capture lot of data it may or may not be aligned to business goal or it may not be analyzed properly to make informed decisions.

Workshop Content

- Introduction
- Overview to Metrics and Measures
- Basics of Statistics
- Sampling and Stratification of data
- Introduction to MINITAB
- Introduction & Understanding of QC Tools including (Concept & Application of the tool, How to make it, interpret it and use it to take informed decisions)
  - Process Flow Chart
  - Cause & Effect Diagram / Fishbone Diagram
  - Histogram
  - Control Charts
  - Pareto Analysis
  - Scatter Diagram
  - Run Charts
- Case Study
- Analyzing and interpreting data through QC Tools using MINITAB

Who Should Attend

- Metrics Council/ Team Member
- Professionals working in IT professionals involved in and interested in data analysis & problem solving
- SEPG/ SQA/ Quality Team
- Project Managers

Demystifying High Maturity - The Statistical Way

3 DAYS

Workshop Overview

This workshop provides details on what is high maturity and its characteristics. It provides detailed explanation of the concepts and practices at maturity levels 4-5 as well as examples of how statistical methods and tools can be applied to assist in the implementation of these practices. The workshop provides hands on experience on hypothesis testing, Process-Performance Baselines, Process-Performance Models, Control Charts, Regression Analysis and other statistical techniques.

The workshop is composed of lectures and exercises and provides a practical hands-on experience to the participants. The concept knowledge and a level of tool usage would also be provided. After attending the course, the participant will understand the concepts and issues related to CMMI levels 4 and 5 from theoretical, empirical, and practical perspectives.

Workshop Benefits

This course is a one of its kind to help the organizations understand the nuances of implementing High Maturity. The course goes beyond theoretical knowledge and focuses a lot on actual implementation with plenty of hands on experience of real life situations faced by the organizations in implementing High Maturity.

Workshop Content

- Introduction
- SEI's expectations from High Maturity Organizations
- Establishing a strong measurement framework (ML2)
- High level GQM
- Concept of Y = f(x)
- Introduction to SPC concepts
- Introduction to MINITAB
- Statistical Tools using MINITAB
- Control Charts
- Advanced statistical concepts (hypothesis testing, ANOVA, correlation etc)
- Developing Process Performance Baselines, Process Performance Models
- Interpreting High Maturity Process Areas
- High Maturity Practices Common Pitfalls
- Industry best practices

Who Should Attend

Those organizations that are aiming to achieve CMMI levels 4 and 5.

Defect Prevention

2 DAYS

Workshop Overview

In most organizations, Software teams rely on Defect Detection and Rework to ensure the quality of deliverables but Defect Prevention is often a neglected component of Software Quality Assurance. In an average project, more than 40 % of the total effort is spent on finding and fixing the defects. Investing in a comprehensive Defect Prevention Program can provide huge payback in terms of faster, better and cheaper deliveries.

This Training gives practical guidelines for establishing and implementing a Defect Prevention Framework, Processes and Methodologies in your organization. It is designed to sensitize participants on the strategic importance of Defect Prevention in Software Development and how Defect Prevention practices can help organizations reduce Cycle time and cost of Software Development and provide better quality products to Customers.

Who Should Attend

The target audience for the program are Software professionals with minimum of two years of experience with regards to various phases of Software Development Life Cycles, and should be involved with any / all / either of the functions given below:

- Software Project Managers
- Software Project Engineers
- SEPG /SQA professionals
- Quality Process Engineering
- Software Quality Assurance

Workshop Benefits

This course is designed to help you:

- Appreciate the value and need for Defect Prevention initiatives.
- Identify and Estimate potential defects and plan for prevention.
- Equip you with Tools and Techniques for effective Defect Management.
- Devise, plan and maintain an effective Defect Prevention program in your organization.
- Compute and Articulate the ROI from your Defect Prevention initiatives.

Workshop Content

The program for the workshop covers the following topics:

- The Business Motivation for Defect Prevention
- Cost of Quality Concepts
- Understanding Defects
- How do we measure Defects?
- Practices and Tools for Defect Analysis
- Defect Prevention as a Continuous Improvement Process
- Defect Prevention Techniques- Some Industry Best practices
- Defect Prediction
- How to establish a Defect Prevention Program- a holistic approach to effective Defect Management

Innovative Problem Solving

3 DAY

Workshop Overview

Innovative Problem Solving workshop A 3-day workshop for individuals, followed by post-workshop project work. The workshop will provide participants with the knowledge and skills necessary to resolve complex inventive problems.

This workshop will sensitize participants to generating elegant solutions to tricky problems. The concepts are derived from TRIZ and systems thinking.

Workshop Content

Day-1 Session

- Types of Problems
  - Mini problem
  - Maxi problem
- System of Powerful Thinking
  - Kaleidoscope Model of Perspectives
  - RCA+(Root Conflict Analysis) or Problem Flow Network
    - Modeling the current situation to unravel the root conflicts
    - Group Exercise on RCA+ or Problem Flow Network
  - Hill Model
    - Analogy Thinking
  - Tongs Model
    - Reveal the barriers or contradictions

Day-2: Morning session

- System of Powerful Thinking (cont)
  - Ideality
  - Identify the strategic roadmap towards state of perfection
  - Resources
  - Identify the readily available resources that can be leveraged to resolve the problem

Day-2: Afternoon session

- System of Powerful Thinking (cont)
  - Identifying and Resolving Contradictions
    - Formulating Contradictions as Element-Name of Parameter-Value of Parameter (ENV) Model
    - Rules for Selecting Contradiction for resolution
- Identify the Main Production Process (MPP)
- Choose the Contradiction that will help achieve the Main Production Process (MPP) and meet the Most Desired Result (MDR)
- Apply principles of resolving Contradiction
- Compare solution directions with Ideal Final Result (IFR)
- Group Exercise on Resolving Contradictions

Day-3: Morning session

- System of Powerful Thinking (cont)
  - Houdini Model
    - Test the strength of solutions under additional constraints

Day-3: Afternoon session

- System of Powerful Thinking (cont)
  - Resolving Secondary Problems
    - Concept generation
- Generate Action Plans

Software Six Sigma

2 DAYS

Workshop Overview

The software industry today faces a challenging environment worldwide, characterized by ROI focused customers, increased pricing pressures and intense competition. Other business imperatives include the ability to manage projects across diverse locations and technology platforms, and the need to continuously move up the value chain. In order to respond to these challenges, the industry needs to strive for customer delight through zero defects, achieve operational excellence through predictable processes and adopt an ROI based approach to all initiatives. What is needed, therefore, is institutionalizing a management approach that ensures not just Engineering Excellence but also Business Excellence. In short, it time to adopt Six Sigma!

This workshop seeks to provide participants with an understanding of Six Sigma implementation in a software development environment. QAI Faculty are all certified Master Black Belts or Black Belts, and have wide ranging experience not only as Business leaders but also as Quality Leaders, leading and managing Six Sigma as well as ISO and CMM® initiatives.

Workshop Content

- Why Six Sigma?
- What is Six Sigma?
- What is My Sigma?
- How Six Sigma?
- Where Six Sigma?
- Model Projects
- Deploying Six Sigma
- Complements and Supplements
- Managing and Sustaining Six Sigma
- Where else Six Sigma?

Workshop Benefits

This workshop will help participants:

- Familiarize with Concept of Six Sigma, its Methodologies and Tools and applications.
- Enable to prepare a road-map for launching Six Sigma: Where, Who, When, How.
- Understand Key Success Factors and Challenges during launch, deployment and sustenance.
- Understand how to apply Six Sigma methodology in SDLC (Software Development Life Cycle) as well as Supporting Business Processes.
- Understand synergy between Six Sigma and frameworks such as CMM®/CMMI®/ PCMM®.
- Select the right methodology (DMAIC/DMADV).

Who Should Attend

- Managers and Executives
- Human resources staff
- Those responsible for improving workforce management practices
- Members of People CMM® assessment teams
- Software Engineering Process Group (SEPG(SM)) managers, members

Elearning Courses

Quality Assurance

9 HOURS

Workshop Overview

Quality is a key measure of project success. Software producers want to be assured of the product quality before delivery. For this, they need to plan and perform a systematic set of activities called Software Quality Assurance (SQA).

SQA helps ensure that quality is incorporated into a software product. It aims at preventing errors and detecting them as early as possible. SQA provides confidence to software producers that their product meets the quality requirements. SQA activities include setting up processes and standards, detecting and removing errors, and ensuring that every project performs project SQA activities.

Who Should Attend

- Quality Assurors
- EPG Members
- Internal Auditors

Workshop Benefits

This course will enable you to:

- Describe SQA, its activities, goals, and responsibilities.
- Explain SQA payoffs and tradeoffs.
- Discuss the role of SQA at each stage of the software project life cycle and at the project management level.
- Identify the people who constitute the quality team and specify the options for organizing the quality team.
- Describe the components of an SQA Plan.
- Explain how to launch SQA and the problems that are encountered during the launch.

You receive a **certificate of completion** after successfully completing this course.

Workshop Content

Software Quality Assurance course includes:

- What is Software Quality Assurance
- Payoffs and Tradeoffs of SQA
- Quality through the Software Process
- The Quality Team
- Components of an SQA Plan
- Launching SQA Successfully

This course has been co-authored by the internationally recognized consultant and authority on software engineering—Dr. Roger S. Pressman

An Overview to Configuration Management

9 HOURS

Workshop Overview

Changes are an inevitable part of any software project. If these changes are not managed properly, there is an adverse impact on cost, schedule, and quality.

Poorly managed changes result in inconsistent work products, increase in errors, and confusion and rework. Software configuration management (SCM) provides a disciplined approach to change management, spanning the entire software process.

SCM involves managing a software configuration, which is the collection of interrelated items required to understand and create software.

Workshop Content

An Overview to Software Configuration Management course includes:

- The Relevance of SCM
- Basic Concepts of SCM
- The SCM Process
- Planning for SCM in a project

This course has been co-authored by the internationally recognized consultant and authority on software engineering—Dr. Roger S. Pressman.

Workshop Benefits

This course will enable you to:

- Explain the importance of software configuration management (SCM)
- Explain various tasks in the SCM process
- Plan for SCM tasks in a software project.

You receive a **certificate of completion** after successfully completing this course.

Who Should Attend

- Configuration controller
- Team Leader
- Developers
- Testers
- Project Manager

Tasks in SCM Process

9.5 HOURS

Workshop Overview

Change management in the software context is done using the disciplined approach of software configuration management (SCM). In software projects where changes are not managed by implementing the SCM process, there is a possibility of low productivity, more rework, and more errors.

To be able to plan for SCM as a part of project management, it is necessary to understand the tasks in the SCM process. The five tasks of the SCM process are configuration identification, change control, version control, configuration auditing, and reporting. These tasks relate to software configuration items (SCIs) and can be seen as concentric layers that apply to SCIs as the project progresses.

Who Should Attend

- Configuration controller
- Team Leader

Workshop Benefits

This course will enable you to:

- Explain the configuration identification task of the SCM process.
- Explain the change control task of the SCM process.
- Explain the version control task of the SCM process.
- Explain the configuration auditing task of the SCM process.
- Explain the reporting task of the SCM process

You receive a **certificate of completion** after successfully completing this course.

Workshop Content

The Tasks in the SCM Process course includes:

- Configuration Identification
- Change Control
- Version Control
- Configuration Auditing
- Reporting

This course has been co-authored by the internationally recognized consultant and authority on software engineering—Dr. Roger S. Pressman.

Basic Concepts of Project Management

8.5 HOURS

Workshop Overview

Software project management is the discipline used for managing projects effectively. It is a challenging activity and plays a critical role in the success of a project.

Estimation is one of the key aspects of software project management. It helps in estimating the work to be done and the effort required. However, as the project progresses, there are gaps between the planned and actual estimates. Project monitoring and control are required to ensure that the project targets are achieved.

Workshop Content

Basic Concepts of Software Project Management course includes:

- An Overview of Software Project Management
- Team Organization
- Project Scheduling

This course has been co-authored by the internationally recognized consultant and authority on software engineering—Dr. Roger S. Pressman.

Workshop Benefits

This course will enable you to:

- Explain what software project management involves and why it is important.
- Explain how teams can be organized for working effectively on a project.
- Explain what a project schedule is and how it is created and used.

You receive a **certificate of completion** after successfully completing this course.

Who Should Attend

- Project Manager
- Team Leader
- EPG Members

Project Measurement & Metrics

3.5 HOURS

Workshop Overview

Measurement is critical for successful management of software projects. Measurement forms the basis of planning as it is used to establish achievable project targets. It is a key for developing accurate estimates.

Measurement helps to monitor the progress of a project. For this, the data on the status of activities, resource utilization, and the technical quality of the work done is required. This data is compared with the plans to measure the deviations from the plan and to identify the areas that need corrective action.

Software professionals, therefore, need to understand which entities to measure in a software project and what are the various types of relevant measurements and metrics.

Who Should Attend

- Project Managers
- Team Leaders
- Quality Assurors
- EPG Members

Workshop Benefits

This course will enable you to:

- Explain how measurement is a foundation for software project management.
- Describe the measurement and metrics required for managing software projects.

You receive a **certificate of completion** after completing successfully this course.

Workshop Content

Software Project Measurement and Metrics course includes:

- Measurement as a Foundation for Software Project Management
- Types of Measurements in Software Projects

This course has been co-authored by the internationally recognized consultant and authority on software engineering—Dr. Roger S. Pressman.

Basic Concepts & Techniques of Estimation

6.5 HOURS

Workshop Overview

Projects planned and executed based on inadequate resources and unrealistic deadlines lead to poor quality and overshooting of budgets and schedules.

For software projects to be successful, it is important to set realistic targets that can be achieved. These targets should be based on an estimate of the work to be done and the effort required for it. The product scope should be well defined for establishing reliable estimation. There are multiple estimation techniques that can be used to arrive at effort and schedule estimates. Project monitoring and control is also required to ensure that the project targets remain achievable.

Who Should Attend

- Business Analyst
- Project Manager
- Team Leader
- EPG Members

Workshop Benefits

This course will enable you to:

- Explain the importance of estimation for project planning and the need to revise the estimates as a project progresses.
- Explain what the product scope is and why it should be defined for project estimation and planning.
- Explain how the technique of grammatical parse is used for the functional decomposition of a product.
- Explain the two main approaches that are followed for estimation.

You receive a **certificate of completion** after successfully completing this course.

Workshop Content

Basic Concepts and Techniques of Estimation course includes:

- The Importance of Estimation in Software Project Management
- Defining the Product Scope
- The Grammatical Parse Technique
- Estimating Using the Empirical & Decomposition Methods

This course has been co-authored by the internationally recognized consultant and authority on software engineering —Dr. Roger S. Pressman.

Measuring the Size of Software Products

6.5 HOURS

Workshop Overview

Project managers and software engineers often have to prepare estimates for effort and schedules. For this, they need to have a good understanding of the amount of work involved in a project. The time and effort required for the project activities can be measured based on the size of the product to be built.

It is necessary to know the size of the product in order to estimate the cost and the duration required to build it. This estimation helps in planning the project effectively. In addition, knowledge of the product size for different projects enables us to compare the quality and the costs across projects. Two approaches are used to measure the size of a software product—lines of code (LOC) and function points (FP).

Who Should Attend

- Business Analyst
- Project Manager
- Team Leader
- EPG Members

Workshop Benefits

This course will enable you to:

- Explain the importance of measuring the software product sizeand the characteristics of lines of code (LOC) and function points (FP).
- Explain the basic procedure for computing function points.
- Explain how to convert the number of source code statements to function points (FP) using the backfiring technique.

You receive a **certificate of completion** after successfully completing this course.

Workshop Content

Measuring the Size of Software Products course includes:

- Measurement of Software Product Size
- Basic Procedure for Computing Function Points
- The Backfiring Technique

This course has been co-authored by the internationally recognized consultant and authority on software engineering—Dr. Roger S. Pressman.

Outsourcing Project Work

5 HOURS

Workshop Overview

To build software product, project managers need to select the most suitable development approach. For this, they need to compare alternative development approaches, such as building the product in-house or outsourcing it.

Outsourcing refers to the use of products and services from third parties for building a part or whole of the software product. There are several options for outsourcing, each of which has a different impact on project planning and management.

Who Should Attend

- Project Manager
- Team Leader
- EPG Members
- Senior Management

Workshop Benefits

This course will enable you to:

- Explain the various outsourcing options and the aspects that help project managers select the most suitable option for a project.
- Explain how alternative development approaches can be compared using the decision tree and the expected value techniques.

You receive a **certificate of completion** after successfully completing this course.

Workshop Content

Outsourcing Project Work course includes:

- Outsourcing Options in Software Projects
- Comparing the Costs of Alternative Development Approaches

This course has been co-authored by the internationally recognized consultant and authority on software engineering—Dr. Roger S. Pressman.

Size Estimation using FPA

7.5 HOURS

Workshop Overview

QAI Global Institute is happy to bring you the Software Size Estimation Using FPA course. You can access this course anytime, anywhere, through the Internet.

Software size is an important input for estimating the effort, schedule, and cost of software. However, factors such as ever-expanding user requirements and the variety of software tools available today make it difficult to estimate the software size.

Function point analysis (FPA) is a structured technique for software size estimation and helps overcome these difficulties. The FPA technique involves viewing the functionality of software from the users' perspective and then estimating the size based on the required functionality.

Who Should Attend

- Business Analyst
- Project Manager
- Team Leaders
- EPG Members

Workshop Benefits

This course will enable you to:

- Explain the basic concepts of function point analysis (FPA).
- Estimate software size by using the Detailed FPA technique.

You receive a **certificate of completion** after successfully completing this course.

Workshop Content

Software Size Estimation Using FPA course includes:

- An Overview of FPA
- Detailed FPA Technique

Effort and Schedule Estimation

9 HOURS

Workshop Overview

The success of any software project largely depends on effective estimation of project effort, time, and cost. Estimation helps in setting realistic targets for completing a project. The most important estimation that is required to be fairly accurate is that of effort and schedule. This enables you to obtain a reasonable idea of the project cost.

You can carry out effort and schedule estimation with the help of certain estimation models at each phase of the software development life cycle (SDLC).

Who Should Attend

- Project Manager
- Team Leaders
- EPG Members

Workshop Benefits

This course will enable you to:

- Explain the basic concepts related to effort and schedule estimation for a software project.
- Describe the process used for estimating the effort and schedule for a software project.
- Describe the different models available for estimating the effort and schedule for software projects.

You receive a **certificate of completion** after successfully completing this course.

Workshop Content

Software Effort and Schedule Estimation course includes:

- The Basic Concepts of Effort and Schedule Estimation
- Process for Effort and Schedule Estimation
- Effort and Schedule Estimation Models

Effort and Schedule Estimation using COCOMO II

7.5 HOURS

Workshop Overview

Today, the constant innovations in the software development industry are testimony to the ever-increasing speed at which technology becomes obsolete. While more companies continue to diversify and add IT to their portfolio, reduction in the cost of hardware is another factor that fuels the growth of software development. This has, in turn, led to increased pressure on software development organizations to lower their development and maintenance costs.

All this makes it imperative that software organizations follow sound practices not only during the development stage but also during the estimation stage. Incorrect estimates result in delays and customer dissatisfaction. The Constructive Cost Model (COCOMO) II is one of the most commonly used estimation model that allows one to estimate the cost, effort, and schedule for a software project. COCOMO II comprises of three models that estimators can use at different stages of the project depending on the amount of information available.

Who Should Attend

- Business Analyst
- Project Manager
- Team Leaders
- EPG Members

Workshop Benefits

This course will enable you to:

- Explain the basic concepts of COCOMO II model.
- Understand how to use the Application Composition model for effort estimation.
- Understand the Early Design model and how to use it for effort and schedule estimation.
- Understand the Post-Architecture model and how to use it for effort and schedule estimation

You receive a **certificate of completion** after successfully completing this course.

Workshop Content

Effort and Schedule Estimation Using COCOMO II course includes:

- An Overview of COCOMO II
- Application Composition Model
- Early Design Model
- Post-Architecture Model

An Introduction to Software Testing

4.5 HOURS

Workshop Overview

Errors get introduced during the software process for various reasons, such as missed or misunderstood requirements, poor processes, and undetected mistakes. The errors that reach the customers are called ‘defects’. From the customer’s perspective, defects indicate poor quality of the product. For delivering good-quality software products, it is, therefore, necessary to detect and remove the errors.

Testing is a useful quality filter for detecting errors so that they can be removed. It is an integral part of the software process and is considered necessary for producing good-quality software.

Who Should Attend

- Developers
- Testers

Workshop Benefits

This course will enable you to:

- Explain the importance of software testing.
- Explain the objectives and principles of software testing.
- Explain the limitations of software testing.

You receive a **certificate of completion** after successfully completing this course.

Workshop Content

An Introduction to Software Testing course includes:

- The Importance of Software Testing
- The Objectives and Principles of Software Testing
- The Limitations of Software Testing

This course has been co-authored by the internationally recognized consultant and authority on software engineering —Dr. Roger S. Pressman.

Test Case Design Techniques

9 HOURS

Workshop Overview

Testing a software program is essential to detect underlying errors in it. In a software project, the success of testing depends on the test cases used. To reduce the turnaround time and project duration, it is important to design an effective set of test cases that enable detection of the maximum number of errors.

Who Should Attend

- Developers
- Testers

Workshop Content

Test Case Design Techniques course includes:

- An Overview of Test Case Design
- Flow Graph Notation
- Basis Path Testing
- Control, Structure Testing
- Black-Box Techniques

This course has been co-authored by the internationally recognized consultant and authority on software engineering —Dr. Roger S. Pressman.

Workshop Benefits

This course will enable you to:

- Describe the relevance of test case design and the two broad approaches used for it.
- Explain flow graph notation, its importance, and how to draw flow graphs for programs involving simple conditions.
- Explain basis path testing and the steps involved in it.
- Explain control structure testing and its types.
- Explain two important black-box techniques—equivalence partitioning and boundary value analysis.

You receive a **certificate of completion** after successfully completing this course.

Testing Strategies

9.5 HOURS

Workshop Overview

Testing is an essential activity in a software process. Planning for software testing involves establishing an overall testing strategy for a project.

The testing strategy includes organizing testing at three levels—unit, integration, and high-order. It also involves procuring tools to automate testing and identifying the people who will perform testing. In addition, planning is required for debugging—the process of diagnosing and fixing the problems detected during testing.

Who Should Attend

- Developers
- Testers

Workshop Content

Software Testing Strategies course includes:

- Planning for Software Testing
- An Overview of the Testing Strategy
- Unit Testing
- Integration Testing
- High-order Testing
- Roles-and Organization for Testing
- Debugging

This course has been co-authored by the internationally recognized consultant and authority on software engineering —Dr. Roger S. Pressman.

Workshop Benefits

This course will enable you to:

- Explain the factors to consider for planning effective software testing.
- Explain the broad issues to consider while deciding a testing strategy for a software project.
- Explain unit testing and the aspects to consider while deciding a strategy for it.
- Explain integration testing and the aspects to consider while deciding a strategy for it.
- Explain high-order testing and the aspects to consider while deciding a strategy for it.
- Explain the role of a tester and various options for organizing the testing activity.
- Explain what debugging involves.

You receive a **certificate of completion** after successfully completing this course.

Risk Management

7 HOURS

Workshop Overview

Risks are inherent in any project and should be managed as part of software project management. Proactive risk management is a rational approach and contributes to project success. This is because it involves identifying the risks before they become problems and planning how to mitigate, monitor, and manage them. However, most project managers have a reactive approach to risks. They do not identify the risks in advance and take necessary actions only when these risks become problems. This leads to crisis.

To plan and manage risks effectively, project managers need to understand the basic concepts related to risks and risk management.

Risk management should be done using an evolutionary and iterative paradigm because risks keep evolving and changing as projects progress.

Who Should Attend

- Project Manager
- Team Leader
- EPG Members
- Senior Management

Workshop Benefits

This course will enable you to:

- Explain why risk management is important in software project management.
- Explain the basic concepts related to risks.
- Explain the risk management model.
- Identify risks using the generic risk checklist.

You receive a **certificate of completion** after successfully this course.

Workshop Content

Risk Management course includes:

- Risk Management in the Context of Software Project Management
- Basic Concepts Related to Risks
- The Risk Management Model
- Identifying Risks

This course has been co-authored by the internationally recognized consultant and authority on software engineering —Dr. Roger S. Pressman.

Process Improvement

7 HOURS

Workshop Overview

To create high-quality software on time and within budget, it is important to go through a series of predictable steps, which are like a road map. This road map is called a software process. Software processes form the harness for the technical methods used to build software and are essential for project planning and execution. They are defined to meet certain objectives, such as product quality or ability to meet a schedule.

When a process is implemented, it is necessary to check whether the process is actually achieving what it was intended to and how it can be improved. Software process improvement is an ongoing activity that helps to continuously improve the quality of software built by an organization. Various process improvement and process assessment models are available for evaluating and improving processes.

Who Should Attend

- EPG Head
- Project Manager
- EPG Members
- Quality Assurors
- Internal Auditors

Workshop Benefits

This course will enable you to:

- Explain what software process improvement is and the various approaches adopted for it.
- Describe the steps involved in a generic cyclical software process improvement model.
- Explain how quality models can be used for assessment and process improvement by using the example of Software Capability Maturity Model® of Software Engineering Institute, Carnegie Mellon University. (®Capability Maturity model is registered in the U. S. Patent and Trademark Office by Carnegie Mellon University.)
- Explain the use of the Pareto principle to decide the focus of process improvement efforts.

You receive a **certificate of completion** after successfully completing this course.

Workshop Content

Software Process Improvement course includes:

- An Introduction to Software Process Improvement
- Cyclical Model for Software Process Improvement
- Quality models for Process Assessment and Improvement
- The Pareto Principle

This course has been co-authored by the internationally recognized consultant and authority on software engineering —Dr. Roger S. Pressman.

Formal Technical Reviews

7 HOURS

Workshop Overview

Software products are built using a software process, and errors get introduced during the process for various reasons. The errors that are not detected and fixed during the software process reach customers and are called 'defects'. Defects are often costlier to fix than errors and also damage the developer's reputation. Therefore, it is necessary to reduce the errors in the end products.

In order to deliver products of good quality, we need 'quality filters' that can be used to detect errors. Formal technical reviews (FTRs) are powerful quality filters.

Who Should Attend

- Developers, Testers
- System Analyst
- Team Leaders
- Project Manager
- Business Analyst
- EPG Members

Workshop Benefits

This course will enable you to:

- Explain the importance of reviews as a quality filter.
- Discuss the types of reviews along a formality spectrum.
- Describe the steps of a review process.
- Discuss the roles of the people involved in a review process.
- Explain how to conduct effective FTRs.

You receive a **certificate of completion** after successfully completing this course.

Workshop Content

Formal Technical Reviews course includes:

- Formal Technical Reviews as a Quality Filter
- FTR Types along a Formality Spectrum
- Steps in a Generic FTR
- Roles in a Generic FTR
- Conducting Effective FTRs

This course has been co-authored by the internationally recognized consultant and authority on software engineering —Dr. Roger S. Pressman.

Quantitative Process Management

17 HOURS

Workshop Overview

Today, the business environment is extremely volatile. Customer expectations and requirements keep changing and evolving on a daily basis. In such an environment, the most important challenge for an organization is to deliver products that meet customer expectations, and remain competitive.

Constantly measuring the current process performance helps an organization know the current existing process performance. It also enables taking appropriate actions to control and improve critical organizational processes to meet or exceed customer expectations.

Quantitative Software Process Management (QSPM) is an approach that integrates the concept of measurement with process management. This approach provides an organization with an objective insight into its goals and the capability of its processes.

Who Should Attend

- EPG Members
- EPG Head
- Quality Assurors
- Project Manager
- Team Leaders
- EPG Members

Workshop Benefits

This course will enable you to:

- Explain the significance of managing a process quantitatively.
- Formulate a measurement action plan for the quantitative management of critical organizational processes.
- Collect, verify, and organize the process data corresponding to critical organizational processes.
- Select and use an appropriate statistical tool to organize, analyze, and interpret process data.
- Analyze and control the performance of a process and sustain the controlled state of the process.
- Initiate and sustain activities for improving critical organizational processes.

You receive a **certificate of completion** after successfully this course.

Workshop Content

Quantitative Software Process Management course includes:

- An Overview to Quantitative Software Process Management
- Planning and Defining the Measures of Process Performance
- Measuring Process Performance
- Analyzing Process Performance using Statistical Tools – I
- Analyzing Process Performance using Statistical Tools – II
- Controlling a Process
- Improving a Process

An Overview to CMMI® v1.2

6.5 HOURS

Workshop Overview

The Capability Maturity Model Integration (CMMI®) helps organizations in managing their processes in a structured manner, making a positive impact on product quality and organization's business objectives.

Who Should Attend

- Project Managers
- Software Engineering practitioners
- Quality group members (Process group as well as Quality Assurance group)

Workshop Benefits

This course will enable you to:

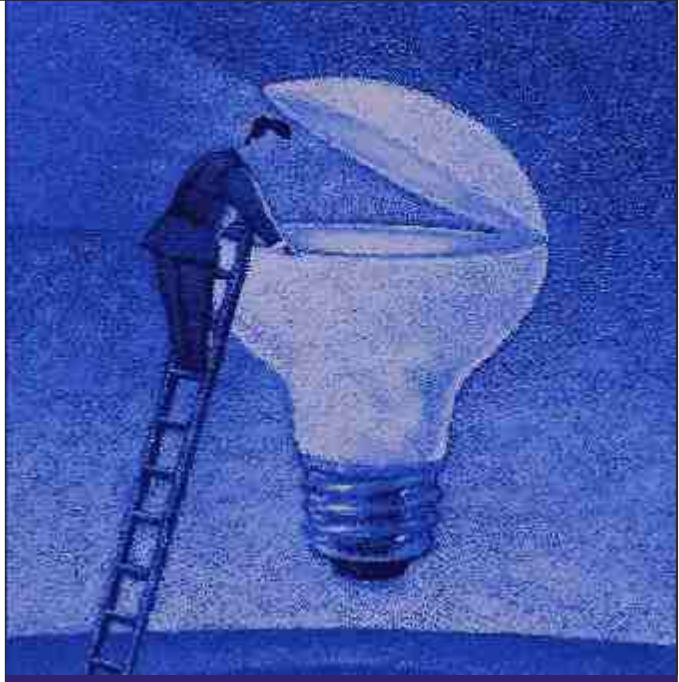
- Understand the basics of CMMI® .
- Describe the structure of CMMI® staged.
- Understand the process areas application of the CMMI® model.
- Understand CMMI® road map.

You receive a **certificate of completion** after successfully completing this course.

Workshop Content

An Overview to CMMI® v1. 2 course includes:

- Why CMMI®
- Structure of CMMI® Staged
- Process Areas
- CMMI® Roadmap



WHO WE ARE

QAI is a leading global consulting and workforce development organization addressing 'Operational Excellence' in IT, BPO and Knowledge intensive service organizations.

QAI Global Services, the consulting division of QAI, addresses the space of Operational Excellence which includes the areas of Process Management, Quality Management, Innovation Management, Project Management, IT Service Management and others.

An integrated and deep set of interventions by QAI in client organizations results in operational efficiencies, quality, customer satisfaction and competitiveness in the target companies.

QAI Global Institute, the workforce development division of QAI, focuses on creating education and training products and services to address competence development, assessments and professional IT certifications in business critical skill domains like Software Testing, Quality, Business Analysis etc, for increased employability for the talent pool. The Institute also conducts industry research and houses the Quality Assurance, Testing, Business Analysis and Project Management Bodies of Knowledge

QAI has trained over 1,60,000 professionals and certified over 40,000 professionals across the globe and is currently servicing over 300 clients in over 35 countries . Our offices are located in USA, India, China, and Singapore.

Team of 11 Lead Appraisers: Out of which 4 are High Maturity LA

320+ CMM / CMMI® Appraisals by QAI LAs / 90 High Maturity Appraisals

QAI

USA
qaiusa@qaiglobal.com
Phone: +407-363-1111

INDIA
qaiindia@qaiglobal.com
Phone: +91-11-47776666, 26220580

CHINA
qaichina@qaiglobal.com
Phone: +86-21-50804311

SINGAPORE
qaisingapore@qaiglobal.com
Phone: +65-6225-8139