



# Quality Engineering

## Summary

The requirements for high-quality, reliable, predictable software becomes increasingly necessary as its use continues to grow both generally and in mission- or life-critical environments. As the software industry evolves, the need for qualified engineers trained in the principles, methodologies, techniques and tools of software quality engineering has grown. This course presents the specifics of (software) quality engineering. The course also describes how these processes fit into the (software) development process.

The course is composed of lectures and class exercises with ample opportunity for participant questions and discussions. Much of the class time is devoted to exercises in which participants, typically working in small teams, practice the skills being taught.

## Audience

This course is designed for (future) software quality engineers, software managers and project managers.

## Criteria

Course candidates should have a background and some years experience in software engineering. The "Foundation" courses are highly recommended.

## Duration

2 days (4 modules).

## Remarks

None.



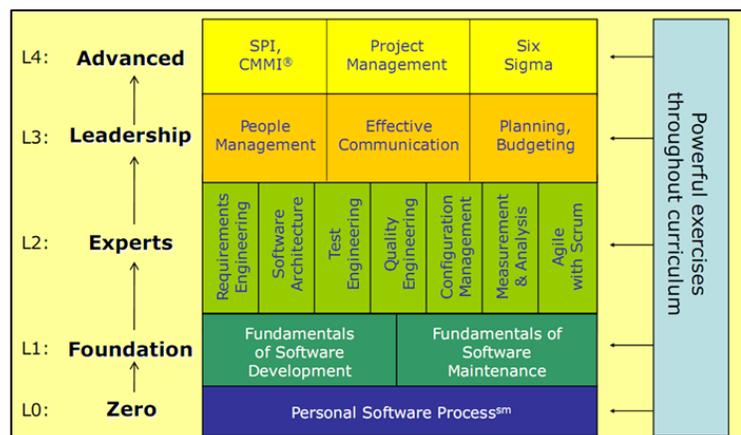
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## Our Software Engineering Curriculum





# Program

## Module 1:

- What is Quality Engineering?
  - o Concepts of quality and their issues
  - o Quality Control
  - o Quality Assurance
  - o Quality Engineering
- Quality Engineering Components
  - o Quality Management System
  - o Quality Guidance
  - o Quality Planning
  - o Quality Control
  - o Quality Reporting

## Module 2:

- Cost Categories
  - o Value-added costs
  - o Non-value-added costs
- Cost of Quality
  - o Prevention costs
  - o Appraisal costs
  - o Internal failure costs
  - o External failure costs
  - o CoQ analysis steps

## Module 3:

- Quality audits
  - o Types of audits and categories
  - o SQA audit steps
- Reviews
  - o Types of reviews
  - o Typical inspection process
  - o Potential pitfalls

## Module 4:

- Standards and Models
  - o ISO/IEC 9001:2000, ISO/IEC 15504, ISO/IEC 12207
  - o CMMI<sup>sm</sup>
- Software Quality Assurance Plan
  - o IEEE 730-1989 Standard
- Credibility tips



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During the course, 1-2 challenging exercises in each module are used to demonstrate the discussed concepts and techniques. Example solutions to all course exercises are provided.

SE-CURE AG can also customize this course or any of our other standard courses to meet your exact in-house training needs and specifications. For example, class exercises can be tailored to include actual examples from your organization in order to make the training more relevant to your environment.