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Managing the Testing Process
Course Outline

General Description

Test managers must take a potentially infinite job—testing a computer system—and accomplish it within tight time and resource restraints. It's a tall order, but successful test managers have found proven ways to handle the challenges.

This course will give attendees the tools they need to succeed as test managers. We'll look at quality risk analysis, test estimation, and test planning. We'll discuss developing high-quality test systems—test cases, test data, test tools, even automated test systems—that improve over time. We'll talk about tracking bugs and test cases. We'll discuss ways to derive and present metrics, charts, and graphs from the test results.

We'll also cover the human side of test management. We'll look at ways to measure and manage the skills testers need. We'll discuss hiring testers. We'll talk about education and certification for testers. We'll examine some ways to motivate and reward testers—and some ways not to! We'll cover working effectively within the project organization, which is especially challenging when you're the bearer of bad news.

We'll also look at the context of testing. We'll discuss system development lifecycles and how they affect testing. We'll cover testing as an investment. We'll finish up by discussing test labs, test environments, and hardware issues.

The materials presented in the course follow Rex Black's book, *Managing the Testing Process*, which is the distillation of over two decades of software, hardware, and systems experience.

Learning Objectives

Through presentation, discussion, and hands-on exercises, attendees will learn to:

- Analyze quality risks, determine test project scope, and prepare a budget and schedule.
- Develop test plans and cases that address the important customer needs.

- Institute and use bug and test tracking systems that support effective test reporting.
- Prepare for and manage the challenges of test execution.
- Build and retain an effective, loyal test team.
- Work and communicate effectively with managers and peers, especially in terms of communicating test findings.
- Understand the test effort within the context of the larger project.
- Allocate scarce hardware.
- Manage a test lab.

Course Materials

This course includes the following materials:

Name	*Description*
Course Outline	A general description of the course along with learning objectives, course materials and an outline of the course topics, including approximate timings for each section.
Noteset	A set of over 400 PowerPoint slides covering the topics to be addressed.
Project Source Documents for Course Exercises	Specifications used in the realistic example project used in exercises for the course.
Bibliography and resources	A set of further readings, Web sites, tools and other resources to help implement the concepts.

The printed course materials are provided in a binder in a way which makes it convenience for course attendees to remove portions as needed for reference; e.g., during exercises.

Session Plan

Day One[*]

Introductions, attendee objectives, and overview of test management

Defining your scope

- Aligning testing in the organization
- Aligning testing with quality

[*] Note: Exercises are selected based on audience needs and interest. Not all exercises will be covered in the course.

- Testing real-world use and configurations
- Sources of information on risk
- Using risk to guide the areas and extent of testing

Exercise: Risk analysis for the Omninet project

Estimating a schedule and budget

- Work-breakdown-structures
- Critical paths
- Test execution cycles
- Bug find-fix-confirm cycles
- Budgets

Exercise: Identifying test estimation factors for the Omninet project

Thinking and communicating with test plans

- Developing test plans
- Test plan templates
- Entry and exit criteria
- Test execution
- Planning risks for test plans
- Selling the plan

Exercise: Test planning for the Omninet project

Test system engineering and architecture

- Test systems and test system design
- Test templates
- Test documentation precision and detail
- Traceability
- Regression risk mitigation strategies

Day Two

Bug reporting basics

- Bug reporting and tracking
- The importance of good bug reports
- Ten steps to better bug reports

Bug reporting refinements

- Classification
- Bug lifecycles
- Bug triage
- Defect removal models

Exercise: Improving a bug report for the Omninet project

Bug metrics and management

- Opened/closed chart
- Closure period
- Root cause Pareto chart
- Affected subsystem Pareto chart
- Defect detection percentage

Case study: Banking application bug metrics

Tracking test cases and suites
- A basic test tracking spreadsheet
- Test tracking process
- Extending the test tracking system
- Adding coverage traceability

Exercise: Test tracking for the Omninet project

Test metrics and management
- Management summaries
- Test hours progress
- Test case fulfillment
- Risk coverage
- Creating a project dashboard

Exercise: Presenting test status

Challenges of test execution
- Certainty versus progress
- Collaborative processes
- Result misinterpretation
- Holidays and cultures

Exercise: Test execution challenges for the Omninet project

Hiring and managing a test team
- Personality and skills
- Skills management
- Education and certification
- Organizing the team
- Hiring and interviewing
- Motivation
- Consultants and contractors

Exercise: Omninet test team

Day Three

Politics of test management
- What is your job
- Where does the test team fit in
- Managing and communicating with your managers and peers
- Credibility and presentation

Exercise: Your political challenges

Testing context: Economics, lifecycles, processes
- Analyzing the return on the testing investment
- Testing within system development lifecycles
- Testing in other types of projects
- Process improvements and maturity

Exercise: Defending a budget

Managing a test lab
- Determining need for a lab

- Designing and stocking a test lab
- Security, safety, and configuration management

Testing hardware/software systems

- Effect of hardware on testing
- Engineering samples and configuration management
- Logistics
- Tester skills effects
- Estimation

Hardware testing fundamentals

- Electrical, environmental, and mechanical tests
- Thermal, reliability, packaging, and safety
- Compliance
- Hardware and software subsystems
- Pilot testing

Glossary, bibliography, and resources

Recommended Readings

Managing the Testing Process, 2e, by Rex Black. In addition, the class materials include an extensive bibliography of books related to software testing, project management, quality, and other topics of interest to the test professional.

