Course ID
**WREQ**
Course Duration
**2-3 days**

Course Title
# Writing Requirements with Structured Use Case Descriptions

**Related Courses**

- Principles of Software Engineering (SWENG1, 2 days)
- Software Engineering: An Advanced Tutorial (SWENG2, 3 days)
- Software Project Management (SWPM, 2 days)
- Effective Software Testing (SWT, 2 days)
- Hands-On Technical Writing (TECHWRITE, 2 days)

**Aimed At**

Information Technology (IT) practitioners including analysts, testers, developers, managers, and quality assurance specialists, with current or near-future requirements engineering responsibilities.

**Group Size**

5-25

**Prerequisites**

None

**Course in a Nutshell**

Perhaps the single most significant factor that drives successful software projects – those that meet customer and user needs – is the availability of a complete, consistent, clear, correct, testable set of functional and non-functional requirements. Clearly, organizations that can produce coherent, complete, consistent functional and non-functional requirements properly enjoy a decided competitive advantage, and are most likely to enjoy substantial returns on their software engineering investments. This course is dedicated to the science and craft of requirements engineering.

**Customize It!**

- *Are you a member of an organization that produces real-time systems?* We can create a version of the course that addresses requirements specifications for real-time systems.
- *Similarly, if you have requirements management* responsibility, we can orient the course toward the viewpoint of requirements management.
- *Does your organization use agile methods?* If so, we can customize the course to address requirements engineering in an agile development environment.

**Learn How To**

- Understand the major sections of the system requirements specification: functional requirements; data dictionary; performance requirements; interface requirements; design constraints; and characteristics
- Examine the role of the context diagram as a starting point for requirements engineering and system testing
- Define the nature and role of the use case as a vehicle for expressing functional requirements, and as a basis for specifying non-functional requirements as well.

**Course Outline**

- Introduction to Requirements Documentation
  - Requirements process overview
  - Documentation standards
  - Audience
  - Functional and non-functional requirements
  - Use case concepts
  - Understanding the context diagram
- Components of a Functional Requirements Specification
  - Creating an information flow diagram for a business process
  - Flow diagram notation and examples
  - Elements of a use case description
  - Alternatives vs. extensions
- Main Success Scenarios
  - Writing an introductory narrative
  - Writing pre- and post-conditions
  - Writing the steps of the main success scenario
- Extensions, Alternatives, and Fragments
  - Writing the steps of extensions
  - Writing the steps of alternatives
  - Writing the steps of fragments
- Writing Data Specifications
  - Data elements in structured use case descriptions
  - Creating a data dictionary
  - Editing use case descriptions for data element consistency
  - Writing data structure specifications
- Non-functional Requirements
  - Writing performance requirements
  - Writing interface requirements
  - Writing design constraints
  - Writing system characteristics
- Inspecting Requirements Specifications
  - Inspection process
  - Benefits and costs
  - Participants
  - What to look for
- Wrap-up: Course Recap and Discussion
  - Lessons learned
  - Where to go from here

**How You Will Learn**

- A seasoned instructor will present this course in interactive lecture format
- Along with lecture, we use exercises, extended workshops, and interesting group activities to enrich the instruction and drive home the essential points.
- You will receive a printed Participant Handbook to help you remember and retain what you learned in class and apply it on your job.

*Revised* *3TDm*