**Object-Oriented Software Testing for Process Management (3 Days)**

**Module 1: Introduction and Course Overview**
- The Impossibility of Testing Everything
- The Importance of Testing Wisely
- Testing Approaches
- Testing Validation
- Testing Plan
- Creating a Master Test Plan
- Developing Test Approaches:
  - Requirements-Based Testing
  - Structure-Based Testing
  - Exploratory Testing
  - Regression Testing
  - Object-Oriented Testing

**Module 2: Use Cases and Object-Oriented Testing**
- What is Object-Oriented Testing?
- Who are Actors?
- Who are Stakeholders?
- What are Roles?
- How Do Actors Interact with the System?
- What are Use Cases?
- What are Behavioral Requirements?
- How are Use Cases Created?
- How Do Testers Create Use Cases?
- Use Cases and Functionality
- Use Cases and Information Management
- What are Scenarios?
- How Do Scenarios, Functionality, and Use Cases Interact?
- Object-Oriented Use Case Testing Methodologies

**Module 3: Requirements-Based Testing During Process Development**
- What is Requirements-Based Testing?
- Levels of Coverage:
  - Unit, Integration, System
- Selecting Appropriate Tests for a Particular Level:
  - Equivalence Class Partitioning
  - Boundary Value Testing
  - Domain Analysis
- Other Testing Mechanisms
- Creating Test Cases for System Software Requirements:
  - Trace Matrices
  - Cross-Functional Testing
  - Decision Tables
  - Others
- Creating Test Cases for System Integration:
  - System Configuration
  - Manual Operations
  - Others

**Prerequisites:** Prior experience with software testing.

**Minimum software requirements:** Microsoft Excel and Microsoft Word are useful to work with the templates provided during the course. JUnit is optional.

**Minimum hardware requirements:** None.

**Microsoft PowerPoint and Internet access installed at instructor’s workstation for presentation purposes.**
Module 4: Structure-Based Testing During Process Development
Overview of Structure-Based Testing
Levels of Coverage (statement; branch; path)
Structure-Based Testing at the Unit, Integration and System Levels
Selecting Appropriate Tests for a Particular Level
Creating Test Cases for System Software Requirements
Creating Test Cases for System Integration Structure-Based Use Case Testing Methodologies

Module 5: Regression Testing During Process Development
Overview of Regression Testing
Benefits and Features of Regression Testing
Selecting Appropriate Levels

Module 6: Defect Management During Process Development
Overview of Software ‘Defects’
Capturing Software ‘Defects’
Reporting and Tracking Software ‘Defects’
Analyzing Software ‘Defects’

Extended Exercise: Creating a Testing Plan for Process Development using Advanced, Object-Oriented Testing Methodologies

Review and Summary