BA31 – The Unified Modeling Language (UML) for Business Analysts (BAs)

Credits: 28 CDUs / 4 Days

Course Level: Intermediate

Prerequisites:
It is recommended that the participants have a working knowledge of traditional Business Analysis tasks and techniques.

Course Overview:
This course will provide Business Analysts with new capabilities to improve their skills with using visual modeling techniques to document requirements. The use of the Unified Modeling Language will significantly improve the way that requirements are elicited, analyzed, documented, and verified.
This course is based upon not only the latest OMG standards related to UML, but also its application on projects in various commercial and government domains.
The course is designed for Business Analysts who need a practical, applied, and comprehensive understanding of using visual modeling techniques for capturing requirements. It is targeted for those who contribute to the development of requirements using UML, but is also appropriate for anyone wanting a basic understanding of the primary techniques which use graphical modeling as a way of analyzing and documenting requirements.

Course Highlights:
- Leverage critical modeling techniques
- Define the scope, process, tools and deliverables for UML modeling
- Model core workflows & crucial processes with Business Process Modeling Notation (BPMN)
- Apply Unified Modeling Language (UML) diagrams to analyze the enterprise structure
- Build accurately-scoped business models

Intended Audience:
This course is expressly designed for the Business Analyst professional who is involved in eliciting, analyzing, documenting, and validating requirements using the Unified Modeling Language for visually capturing requirements.

Workshop Overview:
A hands-on workshop will be used throughout the course to emphasize the concepts learned and allow the students to experience the use of UML diagrams and techniques. A University Registration System will be used as a Case Study for the workshops.
These workshops will emphasize the creation of the following deliverables and UML models:
- Stakeholder RACI Matrix
- Business Process Model using BPMN
- Context Diagram
- Use Case Diagram
- Use Case Main, Alternate, and Exception scenarios
- Use Case Package Diagram
- UI Prototype
- Class Diagram
- Sequence Diagram

Course Outline:

Section 1 – Course Introduction

- Administration and Introductions
- Workshop: Ball Toss Challenge

Section 2 – The Unified Modeling Language (UML)

- What is the UML?
- Why are modeling languages important?
- Overview of UML diagrams

Section 3 – Object-Oriented (OO) Principles

- Abstraction
- Classification
- Generalization
- Aggregation
- Encapsulation
- Information Hiding

Section 4 – Development Approaches

- What is an SDLC?
- Different SDLC approaches (Waterfall, Iterative, Agile, etc.)
- Model Driven Architecture (MDA)
- UML Tool Review
- Workshop: Demo of a UML CASE tool

Section 5 – Overview of Use Cases

- Describe the purpose and value of use cases
- Demystify use case terminology
- Introduce a use case approach to requirement definition

Section 6 - Enterprise Analysis

- Understand the business context
- Describe the key elements of Enterprise Analysis
- Explain the steps for conducting enterprise analysis
- Identifying business stakeholders, actors, and key information
- Workshop: Identify the Business Stakeholders using a RACI Matrix
- Brief overview of business process models and diagramming

Section 7 - Using BPMN to describe Business Processes

- Overview of BPMN techniques
- Describe a simple BPMN diagram to graphically describe the business process
- Adding gateways, events, messages, swimlanes, pools, and notes
- Using a facilitated session to develop process models
- Workshop: Draw a Business Process Model

Section 8 - Defining System Scope

- Utilize a context diagram to define the system scope
- Identify system actors and distinguish between primary and secondary actors
- Analyze the system context diagram for key data and candidate use cases
- Workshop: Draw a System Context Diagram
- Develop a system use case diagram
- Workshop: Draw a System Use Case Diagram
- Describe the intent of a use case
- Workshop: Write a Use Case Brief Description

Section 9 - Evaluating, Prioritizing, and Packaging Use Cases

- Reviewing requirements for priority, risk, complexity, and dependency
- Workshop: Evaluate and prioritize Use Cases using a Use Case Evaluation Matrix
- Grouping use cases that are inter-dependent
- Defining, drawing, and organizing use case packages

Section 10 - Writing the Main Success Scenario

- Review the Use Case template
- Describe the "scenario" concept
- Best practices in writing use cases
- Workshop: Write a main success scenario

Section 11 - Writing the Other Scenarios (Alternate and Exception Flows)

- Understand the different types of scenarios
- Describe the purpose and difference between alternate and exception scenarios
- Workshop: Write alternate and exception scenarios

Section 12 - Advanced Use Case Diagramming Techniques

- Explain when and how to use «include» and «extend» associations
- Use case generalization/specialization
- Workshop: Identify opportunities for include and extend associations

Section 13 - Developing a Requirements Specification

- Use cases as a context for requirements
- Common approaches to documentation
- Quality of Service (non-functional) Requirements
- User Interface Requirements
- Workshop: Draw a UI prototype
- Business Rule Analysis using Decision Tables
- Reporting and Data Requirements
- Tracing Requirements using an RTM
- Introducing business objects and classes

Section 14 - Supporting Quality Assurance

- Ensure quality use cases
- Leverage best practices to develop use cases that meet quality objectives
- Verification & validation: reviews & inspections
- Quality attributes for use cases
- Testing starts with use cases

Section 15 – Objects and Classes

- Definition of objects and classes
- How to define objects, attributes, and operations
- Links, associations, and multiplicity
- Generalization and polymorphism
- Aggregation and composition
- Workshop: Draw a Class Diagram

Section 16 – UML Sequence Diagramming

- Introduction to interaction modeling
- Using scenarios from Use Cases
- Objects, events, sequence, and messages
- Synchronous vs. asynchronous behavior
- Sequence diagramming notation
- Workshop: Draw a Sequence Diagram