BUSINESS ANALYSIS

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Introduction to Business Analysis

Course Length
2 Days

TE6301_20081111

Course Description: This course is designed to provide foundational understanding of the skills and knowledge areas of Business Analysis. This introductory course exposes the student to the concepts of Business Analysis at a high level. The course includes discussions of the multi-faceted role of the Business Analyst and examines the fundamental skills required. It explores such critical skills as communication techniques, risk analysis, visual modeling, and the gathering, documenting, managing and transmitting of requirements.

Who Should Attend: Those individuals who desire to participate in a software development project as a Business Analyst or wish to begin the first steps towards preparation for the Business Analyst certification should take this course. This course will also be beneficial to Project Managers, System Analysts, and Developers seeking an understanding of this important role in the software development lifecycle.

Prerequisites: There are no specific prerequisites. A general understanding of the software development lifecycle (SDLC) is beneficial, but not necessary.

Benefits of Attendance: Upon completion of this course, students will be able to:

- Show familiarity with the International Institute of Business Analysts and the Business Analyst Book of Knowledge (BABOK).
- Understand the roles of the Business Analyst in the software development process, and apply the knowledge and skill requirements necessary to carry out the role.
- Explain the key differences between software development methods and processes.
- Discuss Requirements Engineering, Requirements Management and Requirements Development.
- Describe the levels, types, and characteristics of good requirements.
- Apply change management and requirements traceability to the Business Analysis process.
- Describe requirements that drive ongoing design, test, and user documentation activities.
- Identify and discuss the flow charting using Unified Modeling Language (UML) Activity Diagrams.

Course Outline:

Introduction
Introduction to the IIBA and the BA Book of Knowledge (BABOK)
Business Analysis defined
Business Analyst defined
The knowledge areas of Business Analysis
The skills of a Business Analyst
Roles of Business Analysts in software projects

Project Overview
Phases of a project
Software Development Life Cycle (SDLC)
Project tools
Software Project Artifacts

Effective Communication
What is communication?
Written communication
Presentation Skills
Effective Listening

Requirements Concepts
Why requirements exist
Requirements Definitions
Characteristics of quality Requirements
Requirement Levels and Types

Requirements Engineering
Associating activity diagrams with business and system use cases
What is Requirements Engineering?
Terms and Definitions
What are good Requirements Engineering practices?
Requirements management Overview

Requirements Management
Requirements Management Defined
Components of the RM Process
Benefits of a quality RM Process
Risks of a poor RM Process
The BA role in RM Activities

Requirements Management Artifacts
Requirements Management Templates
Scope and Vision Document
Requirements Plan

Requirements Change Management and Traceability
Requirements Change Management Overview
What is Change Management?
What does Change Control Management do for us?
Requirements Change Management Process
Establishing a Change Control Management Process
Change Control Charter
Change Control Board
Change Control Process
Impact Analysis

Introduction to Visual Modeling
Modeling notations and symbols
The benefits of Visual Modeling
The various models available for Business Analysis

Requirements Development
Requirements Development Defined
Activities of the Business Analyst in Requirements Development
Preparing to gather requirements
Stakeholder Identification
Problem Analysis
Identifying User Classes
Requirements Elicitation techniques
Writing effective requirements
Characteristics of quality requirements

Requirements Verification and Validation
Verification and Validation Defined
Techniques to Verify and Validate Requirements
Establish criteria for evaluation
How to prepare and conduct successful reviews
Determine the level of review formality

Risk
What is risk?
Risk Identification
Risk Analysis

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Business Requirements Workshop

Course Length
4 Days
TE6302_20081110

Course Description: This course introduces the student to requirements management and requirements development concepts. The Business Analyst will gain in-depth insights into the responsibilities and processes of requirements management. Beginning with an overview of project phases and software development lifecycle, the audience is taken through the essential process of requirements management such as requirements documentation, change management, requirements traceability, and the role of the BA in the process. In the requirements development process, students gain understanding of requirement levels and types, requirements flow, characteristics of good requirements, writing good requirements, and requirements elicitation techniques. In a combined lecture and workshop format, students will study these concepts and techniques. They will apply them by creating the relevant artifacts, with emphasis on customizing the approach and artifacts to fit their organization's needs.

Who Should Attend: This course is for Business Analysts, Project Managers, and Business Staff involved in Application Development projects.

Prerequisites: Students should come to this course with a basic understanding of the role of the Business Analyst. This awareness of the BA responsibilities can be gained from the course entitled "Introduction to Business Analysis." However, no specific experience in this role is required. A general understanding of the software development lifecycle (SDLC) is beneficial, but not necessary.

Benefits of Attendance: Upon completion of this course, students will be able to:

- Explain the process of managing requirements.
- Perform the various elicitation techniques used in gathering and documenting requirements.
- Understand the content of the artifacts created in gathering and documenting requirements.
- Produce relevant artifacts needed for documenting requirements.
- Translate business requirements into appropriate technical specifications.
- Identify and discuss the advantages of flow charting using Unified Modeling Language (UML) Activity Diagrams.

Course Outline:

Introduction
Business Analyst as part of the project team
Industry related roles and knowledge areas for Business Analysts
The role and purpose of the IIBA

Project Overview
Project Phases
Software Development Life Cycle (SDLC)
Project tools
Software Project Artifacts

Introduction to Requirements Engineering
Requirements engineering
Terms and Definitions
What are good Requirements Engineering practices?

Introduction to Requirements Management
Requirements Management Defined
Benefits of a quality RM Process
Risks of a poor RM Process
Components of the RM Process
Change Management Process
Requirements Traceability
The BA role in Requirements Management Activities

Requirement Levels and Types
The purpose of Requirements
Requirements Defined
Requirement Levels
Requirement Types
Characteristics of Quality Requirements

Requirements Management Artifacts
Requirements Management Templates
Scope and Vision Documents
Requirements Plan

Change Management and Traceability
What is Change Management?
What does Change Control Management do for us?
Requirements Change Management Process
Establishing a Change Control Management Process
Change Control Charter
Change Control Board
Change Control Process
Impact Analysis
What is Requirements Traceability?
What does Requirement Traceability do for us?
Establishing Requirements Traceability
The Traceability Matrix
Impact Analysis

Requirements Development
Requirements Elicitation Techniques
Identifying User Classes
Writing effective requirements
Characteristics of quality requirements
Verifying and Validating Requirements

Communication Skills
Speaking, Writing, and Listening in the Workplace

Visual Modeling
Introduction to Business Modeling
Notations and Symbols
Activity Diagram
Process Diagram
Context Diagram
Use Case Diagram

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Business Process Modeling

Course Length
2 Days

TE6303_20081110

Course Description: This course is designed to provide students with the key fundamental concepts of Business Process Modeling. The course provides an initial foundation of knowledge, which prepares the student for advanced Business Process Modeling topics. This course includes discussions on the value of modeling systems, the process of building models, Business Process modeling notation, context diagramming, functional decomposition with data flow modeling, and model verification and validation. This course is designed to be 50% to 75% exercises and discussions depending on the needs and experience of the class participants, and on the number of class days being taught.

Who Should Attend: This course is for Business Analysts, Systems Analysts, and Project Managers.

Prerequisites: Students should have basic experience in gathering and documenting user requirements. This can be gained from either of the two requirements courses found in this curriculum: "Introduction to Business Analysis" or "Business Requirements Workshop."

Benefits of Attendance: Upon completion of this course, students will be able to:

- Explain and apply basic Business Process modeling notation.
- List basic workflow diagramming techniques.
- Explain the use of BPM documentation, such as business area templates.
- Analyze the differences and compatibilities between UML and BPMN.
- Utilize context, functional decomposition, and data flow diagramming techniques to aid in requirements elicitation.
- Construct models with the appropriate components and rigor.
- Utilize models to analyze changes in business processes and data requirements for process simulation and application development.
- Create well-constructed models.

Course Outline:

Introduction to Business Process Modeling
What is business modeling?
Key differences between BPMN and UML standards
Introduction to BPEL
Advantages of business modeling

Overview of Business Process Modeling Methods
Business process modeling methods
Discovery, analysis, design, validation, and implementation
Modeling types
Definition of business area-BPM metadata

Business Process Modeling Notation
Importance of the BPMN standards
Business process modeling standards
Flow objects
Connecting objects
Swimlanes
Artifacts

Context Diagramming
Purpose of a context level data flow diagram
Symbols used in a context level data flow diagram and description of their meaning
Completing a context level data flow diagram based on a description of a business area

Functional Decomposition
Essentials of functional decomposition
Creating functional decomposition business process diagrams
Level 0 through level 2 diagrams
Alternative process flows
Steps in building BPMs
Creating activities
Process simulation
Agile modeling techniques
Basics of data flow decomposition
Validating business process models

Approaches to Functional Decomposition
Completing a functional decomposition diagram using a number of different approaches or a combination of approaches
Advantages and disadvantages of different approaches to functional decomposition
Document detailed descriptions of business processes
Using a functional decomposition diagram for a number of different analysis objectives

Verifying Presentation Models
Using a number of techniques to check your models for accuracy and completeness
Difference between internal verification and external validation
Different methods of completing verification and validation
Errors to check for in performing internal verification of a model
Using different techniques for presenting a model

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Fundamentals of Testing for Business Analysts

Course Length
3 Days
TE6304_20081110

Course Description: This course will introduce the Business Analyst to the fundamentals and principles of software testing. It emphasizes those features of testing that are of primary concern to the BA. Specifically this course explores the basics of quality and quality management. It examines test types that are generally the responsibility of the BA, such as regression testing and user acceptance testing.

Who Should Attend: This course is for Business Analysts, System Analysts, Project Managers, and Developers.

Prerequisites: Students should have a general knowledge of the role of the Business Analyst — gained through experience or taking courses that precede this course in this curriculum path. They should also have a general understanding of the software development lifecycle. A basic understanding of software testing is desired, but not necessary.

Benefits of Attendance: Upon completion of this course, students will be able to:

- Explain the philosophy of quality and the purpose and role of quality assurance.
- Discuss Risk Management with respect to quality management.
- Describe the process of Test Management.
- Distinguish the various test levels and types.
- Describe and apply various test techniques.
- Explain test management artifacts and their importance to testing.
- Examine and create test plans and test cases.
- Perform User Acceptance Testing, Regression Testing and Error Reporting.

Course Outline:

Introduction
The definition of Business Analysis and a Business Analyst
Skills of, and work performed by, a Business Analyst
Project framework
Development methodologies
Requirements and requirements engineering

Quality and Quality Assurance
The definition of quality and quality assurance
The quality assurance process
Quality initiatives
Samples of quality assurance artifacts
Quality control
Role of the Business Analyst in the quality process

Risk Analysis and Management
The definition of risk
Risk management
Risk analysis
Risk identification techniques
Prioritizing risk

Overview of Testing
Software testing defined
Definition of terms - bug, defect, failure, and inspection
The characteristics of a good Tester
Testing Guidelines
Components and artifacts of the testing process

Test Management
Test management defined
Test management best practices
Test artifacts
A software testing life cycle

Test Levels
Strategies for test selection
Test selection criteria
Test levels: Unit, Integrated, System, Functional, Nonfunctional

Test Types
User Acceptance Testing (UAT)
Regression
End to End
Performance
Load/Stress
Usability

Test Techniques
White / Glass
Grey
Black
Ad Hoc
'Smoke'
Static
Dynamic

Test Plans
Writing and managing test plans and procedures
Test plan structure
Test design specifications
Test Procedures

User Acceptance Testing
The role of the BA in user acceptance tests
A UAT test template
Types of acceptance tests
UAT deliverables

Regression Testing
Regression testing defined
Goals of regression tests
Techniques for establishing regression tests
Sources of regression test cases

Error Reporting
Error report content
Tips for writing error reports and descriptions

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Object Oriented Software Development for the Business Analyst

Course Length
3 Days
TE6305_20081110

Course Description: This course gives an overview of the object-oriented approach to software development with emphasis on the responsibilities and expectations of the Business Analyst. It introduces the concepts of OO development and emphasizes the usage of the Unified Modeling Language (UML) to develop and document software design. Special emphasis is placed on those aspects of OO development where Business Analysts are involved.

Who Should Attend: This course is specifically for Business Analysts, who want to gain an object-oriented perspective to the software development life-cycle. It will also be beneficial to Project Managers, System Analysts, and Developers seeking the same knowledge.

Prerequisites: The student should have a general knowledge of the role of the Business Analyst — gained through experience or taking courses that precede this course in this curriculum path.

Benefits of Attendance: Upon completion of this course, students will be able to:

- Discuss the fundamentals of developing software using object-oriented technology.
- Describe the process of end-to-end software development using the principles of object-orientation.
- Use the Unified Modeling Language to define early portions of a software system.
- Demonstrate the place of use cases in the process of requirements management.
- Incorporate the standard principles of requirements elicitation, and record and change management into an object-oriented project.
- Associate the demands and importance of software testing with the principles of object-oriented development.
- Use the UML diagrams with a business analysis perspective.

Course Outline:

Introduction to Object-Oriented Development
What is object-oriented software development?
Typical software life cycle
Differences in OO and Procedural software life cycle
Characteristics of the OO development process
Benefits of using the OO development process

Principles of Object-Oriented Technology
What is an object?
What is a class?
Relationship of classes to objects
Three major features of object-orientation
Packages in OO development
How classes, objects, and packages relate to business analysis tasks

Visual Modeling and the UML
Why use models in software development?
What is the Unified Modeling Language?
UML diagrams useful for the BA
Other useful non-OO diagrams for visual modeling
Business Process Models
Data Flow Diagrams
Context Diagrams
The OO development process reprised with UML diagrams

Developing Business Use Cases
Identifying major system features
Discovering stakeholders
Eliciting requirements and features from stakeholders
More on use case diagrams
Use case specifications expanded
Requirements not covered with business use cases
Evolving business use cases into system use cases

Activity Diagrams
The versatility of activity diagrams
Associating activity diagrams with business and system use cases

Capturing Static System Definition with Class Diagrams
What is a class diagram?
Features of class diagramming
Class associations
Association
Aggregation
Inheritance
Application of class diagramming to business analysis tasks

Other Useful UML Diagrams for the Business Analyst
Interaction diagrams and their use
Capturing system dynamics with sequence diagrams
Machine diagrams and their use
Capturing static system features with state machine diagrams
Package diagrams and their use
Capturing system organization with package diagrams

Applying OO Principles of Reuse and Encapsulation to BA Tasks
Two major principles of the OO methodology - reuse and encapsulation
Abstracting the OO principle of encapsulation and applying it to the BA
Separation of responsibility, information, and dynamics in BA processes
Examples of BA process encapsulation
Exploiting the OO principle of reuse in business analysis
Examples of reuse in business analysis activities

Object Oriented Testing and the BA
What is object-oriented testing?
Applying OO principles to general software testing
Testing OO systems

Summary
Putting it all together
What happens to the requirements when they leave the BA?
Review the OO process from the BA perspective

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Use Case Workshop

Course Length
3 Days
TE6306_20081110

Course Description: This workshop provides students with a hands-on introduction to creating a use case model consisting of use case diagrams and specifications. The workshop focuses on creating an initial use case model that will evolve and adapt as the workshop progresses. The student will be introduced to the Unified Modeling Language (UML) and visual modeling. Students will first learn how to discover, define, and document actors and use cases and then how to develop the all-important specification. The workshop will build on these concepts by providing practical techniques to writing subsequently more detailed use cases. Students will also be invited to come to class prepared to build use cases to manage client specific requirements. This will assure that participants will be able to apply training to everyday projects immediately upon returning to work. This portion of the class can be customized based on client needs.

Who Should Attend: This course is for Business Analysts, Systems Analysts, IT Personnel, and Managers of BAs, SAs, and IT personnel.

Prerequisites: Students attending this course should have a basic understanding of the software development lifecycle.

Benefits of Attendance: Upon completion of this course, students will be able to:

- Develop high level use case models based upon a statement of work or a scope and vision document.
- Explain the advantages of Use Cases.
- Utilize Use Cases to assist in the discovery and documentation of system requirements.
- Effectively build Use Case documents and Use Case diagrams.
- Manage the documents and diagrams through all phases of a project.
- Describe two of the fundamental Unified Modeling Language diagrams — Use Case and Activity Diagrams.
- Understand basic modeling techniques, such as context diagrams and activity diagrams to discover actors, stakeholders and gain system understanding.

Course Outline:

Introduction
Use Case History
Use Case Advantages
Where do Use Cases Fit in the Process from the project perspective and from the Analyst perspective?
Key Requirements Documents
Terminology

Introduction to Visual Modeling
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The benefits of Visual Modeling
Introduction to UML and basic UML symbols
The benefits of developing an Activity Diagram
Gaining process understanding
Identifying Actors
Identifying Use Cases
Uncovering 'missing' requirements
Communication vehicle
The benefits of developing Use Case Models and Diagrams
Gaining system understanding and scope
Identifying Actors
Identifying Risk
Communication vehicle
The benefits of the Context Diagram
When to use a context diagram and why
Use as a 'big picture' tool
Used for systems
Used for processes
Identifying scope, risk, Actors and Users

Use Case Specification
Use Case Templates
Use Case Types

Use Case Development
Seven effective steps
Tips and best practices

Evaluating Requirements
Use Case reviews
Steps to check your use cases
Peer, team, and stakeholder
Review criteria

Verification and Validation
Use Case driven development
Validation, verification and testing
Syntax, Domain, and Traceability
Test Case Development
Tool Support

(Optional) Client Specific Use Case Activity
Apply use case techniques to manage client specific requirements