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This Requirements Engineering training course presents a range of key techniques for discovering, analysing and documenting business and system requirements and places these within the context of our own ADAPT© framework for requirements engineering.

The emphasis of the training course is very much on providing participants with 'hands on' experience of actually using the techniques as they work through a realistic case study scenario. A comprehensive course manual supports the course and also provides a valuable 'how to' reference guide for participants to use in their day-to-day work.

BCS Certification

This Requirements Engineering training course prepares participants to sit the one-hour, open book, examination leading to the certificate in Requirements Engineering offered by BCS, The Chartered Institute for IT. This certificate is a core module for the Business Analysis Diploma. In addition to covering the full BCS syllabus, this course is approved as consistent with the IIBA BABoK version 2.0.

Course Objectives

At the end of this Requirements Engineering training course, participants will be able to:

- Recognise the role of requirements analysis in systems development
- Understand the Requirements Engineering approach
- Describe the technical and interpersonal skills required of an analyst
- Apply a range of requirements elicitation techniques, such as workshops, interviews, scenarios, observation, document analysis, prototyping and questionnaires
- Interpret a model of the system data
- Model requirements using Context and Use Case Diagrams
- Document requirements in a Requirements Catalogue
- Analyse, prioritise and validate requirements
- Understand the principles and techniques required for effective requirements management

Rationale for requirements engineering

- Problems in developing IT systems
- The costs of errors
- Knowledge types – explicit and tacit

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- A framework for requirements engineering

The role of the analyst

- Stakeholders in requirements engineering
- Roles and responsibilities
- User analysis

Requirements planning and management

- The importance of planning
- Project initiation and the project initiation document
- Requirements management

Requirements elicitation 1 – interviewing

- Introduction to elicitation techniques
- Interview preparation
- Structure of an interview
- Documenting the interview

Requirements elicitation 2 – workshops

- What is a workshop?
- The benefits – and limitations – of a workshop
- Workshop roles and responsibilities
- Preparing for the workshop
- Techniques to elicit information
- Techniques for documenting workshop results

Requirements elicitation 3 – supplementary techniques

- Observation, ethnographic studies and STROBE
- Quantitative techniques – activity sampling
- Document analysis
- Record searching
- Questionnaires
- Special purpose records

Documenting requirements

- What should be documented?
- Contents of the requirements document
- The requirements catalogue

Requirements analysis 1 – modelling the processes

- What are we analysing and why?
- Characteristics of good requirements
- Framework for requirements analysis
- Use case diagrams
- Scope definition/re-definition
- Checking use cases against requirements

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- Objects and classes – concepts
- Classes and attributes
- Associations and multiplicity
- Building a class diagram
- Using class diagrams to confirm business rules and data requirements
- Checking models for consistency and completeness
- The CRUD matrix

Requirements analysis 3 – categorisation and organisation

- Organising requirements into a hierarchy
- Categorising requirements – functional, nonfunctional,
- technical and general
- Structuring the requirements catalogue

Requirements analysis 4 – necessity and feasibility checking

- Checking the relevance of requirements to business goals
- Assessing the feasibility (business, technical, financial) of requirements

Requirements analysis 5 – quality control

- Checking requirements against quality criteria
- Identifying conflicting requirements
- Resolving requirements conflicts – negotiating skills

Requirements analysis 6 – testability of requirements

- Identifying acceptance criteria
- The concept of business tolerances

Scenarios and prototyping

- Purpose and use – for elicitation, clarification and validation
- Developing scenarios
- Diagrammatic approaches to scenario modelling
- Use case descriptions to document scenarios
- Rationale for prototyping
- Throwaway versus evolutionary prototyping
- The prototyping process
- Scope and fidelity of prototypes
- Dangers of prototyping

Requirements management – recap

- Recap on features of requirements management
- Requirements traceability – importance and processes
- Baselining and version control
- The change control process
- Requirements re-use
- Support tools (Computer Aided Software Engineering)
- Requirements patterns

Validation requirements

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- Issues that can arise at validation
- Requirements validation process and the review meeting
- Attributes to be checked by reviewers
- Use of prototyping to validate requirements
- The importance of sign-off

Delivering the requirements

- The business case and the project lifecycle
- Approaches to solution delivery – build versus buy
- Development lifecycles
- From analysis to design
- Post-implementation review and benefits confirmation
- Use of requirements in system maintenance

Our Requirements Engineering course includes both practical and theoretical elements. Theoretical concepts are introduced and are then reinforced through practical exercises and a running case study where participants can apply the skills and techniques of analysis in a realistic project simulation.