BCS Certificate in Systems Development Essentials

Learn via: **Classroom / Virtual Classroom / Online**

Duration: **3 Day**

Overview

Based on the BCS syllabus, this course is concerned with the fundamental skills of systems development. Its focus is on systems lifecycles, systems investigation, modelling and quality assurance as it is perceived that these underpin all systems development. The course also introduces the delegate to how the systems development effort could be organised. The BCS syllabus distinguishes between the different generic lifecycle types, methods and approaches, and requires a more in-depth exploration of a specific approach.

As people move into application systems analysis, from either a business or technical background, they need to acquire a fundamental understanding of the application systems development process, and the role and responsibilities of systems analysts, solution architects and designers. This course provides these essential foundations and goes on to focus on systems investigation and quality assurance techniques, as these underpin all successful systems development projects.

It also examines how the systems development effort could be organised, and distinguishes between generic lifecycle types, methods and approaches. At the end of the course delegates may sit an examination to attain the BCS Business Certificate in Systems Development Essentials.

This course may be taken as part of the QA programme leading to the BCS Diploma in Solution Development. This is an intensive three day course that places emphasis on the practical application of the analysis skills covered. Delegates participate in exercises, and case study tasks. Those delegates taking the BCS examination will need to spend 60-90 minutes each evening on revision and example examination questions.

The recommended combination and sequence of courses for delegates wishing to complete QA's programme leading to the BCS Systems Development Diploma is:

1. Systems Development Essentials,
2. Systems Modelling Techniques (UML) *or* Systems Modelling Techniques (Structured),
3. Systems Design Techniques,
4. Software Testing Foundation.

Following your exam you will be sent an email from BCS asking you to register for your exam. Once you have registered and your exam results become available then you will be able to log back into your account and view your results.

Method Choices

The BCS syllabus requires training providers to choose a specific development approach which should be exposed and explained in more detail than the generic approaches mentioned. QA has chosen the Dynamic Systems Development Method (DSDM) as the full lifecycle development framework and Scrum as the approach to application software production. Both of these are popular choices in industry, and are often used together. In addition, the Unified Modelling Language (UML) is used for modelling business and software specifications, wherever applicable.

Who Should Attend

- Those who are new to analysis and need to acquire and practise the fundamental skills of Systems Development.
- Those wishing to attain the BCS Certificate in Systems Development Essentials.

What You Will Learn

At the end of this course you will be able to:

- Identify the tasks and disciplines required for systems development and the implementation of the development
- Describe the relationship between systems development and the wider term solution development
- Interpret the business requirements and produce systems requirements
- Describe the commonly used development lifecycles defined in the syllabus
- Select a particular development lifecycle based on specific characteristics
- Describe in detail one method that embraces one (or more) of these generic lifecycles

- Describe the structure, activities and deliverables of this method
- Identify the key roles and responsibilities within the chosen method and describe how these can be used to form teams
- Describe, interpret and quality assure the key models that the selected method uses for defining the process, static and event processes of the system
- Explain the differences between logical and physical models
- Make effective use of different methods of interpersonal communications
- Quality assure the systems requirements documentation and models
- Identify different architectures for systems development solutions
- Conduct a quality review
- Explain how CASE, CAST and Application Management tools might be used to support the chosen method

Outline

Systems Development Roles and Responsibilities

Identify the Actors/Roles and responsibilities within system development and implementation (for example, analysts, designers, developers, testers and technical architects). Characteristics of these roles. Team structure.

Architecture

Different levels of architecture – Enterprise, Business, Solution, Infrastructure (networks, databases) Inputs at Enterprise level. Inputs at Solution and Infrastructure level. Impacts of design decisions.

Systems Development Lifecycles

Waterfall. V Model. Incremental or phased delivery. Spiral or iterative. Advantages and disadvantages of each approach. Selection of an appropriate approach on defined characteristics.

Development Practices

Bespoke development. Evolutionary / Agile. Prototyping. Component based development. Software Package solutions (COTS Commercial off-the-shelf).

Methods

Structure and content of a chosen representative method (DSDM/Scrum). Describe and interpret three representative models (UML) from the method, showing at least: Process perspective, Data perspective, Event perspective. Explain how these models can be used to depict the logical and physical aspects of a system. Roles and team structures within the chosen method. Products within a chosen method.

Systems Investigation

Fact finding approaches: Workshops, Prototyping, Interviewing, Questionnaires (for usability or package selection for example), Scenario Analysis. Functional requirements definition. Non-functional requirements definition. Documenting system requirements. Human aspects of systems investigation and introducing change.

System Design, Implementation and Maintenance

Controls and security. Verification and validation. Interface design. Design principles and constraints (legal, ethical, financial). Different types of implementation. Sign off and deployment. Post implementation reviews. Different types of maintenance and support.

Quality Assurance

Definitions of quality. Requirements driven testing. Types of walkthrough and inspection. Post Project Reviews. Service Level Agreements.

CASE, CAST and application lifecycle tools

Software support for systems development. Features of CASE and CAST tools. Features of Application Lifecycle Management. Lifecycle coverage. Configuration and version control.

Case Study and Exercises

Throughout the course a case study and other exercises are used to reinforce and practise the topics discussed. A sample exam paper with marking scheme is also provided.