# BCS Practitioner Certificate in Systems Development Essentials Training

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Duration: **3 Day**

Based on the BCS syllabus, this course develops the fundamental knowledge and practical skills required for systems development. The programme focuses on systems lifecycles, systems investigation, modelling, and quality assurance, all of which provide an essential foundation for successful systems development.

The course also examines how systems development work can be organised. The BCS syllabus differentiates between generic lifecycle types, methods, and development approaches, while requiring learners to explore one selected approach in greater depth.

Professionals moving into application systems analysis from either a business or technical background need a clear understanding of the systems development process and the responsibilities of the people involved. This course provides that foundation by examining the roles of systems analysts, solution architects, designers, developers, testers, and other participants in the development lifecycle.

Particular attention is given to systems investigation, requirements definition, modelling, and quality assurance because these disciplines support effective systems development across a wide variety of projects.

At the end of the programme, participants may sit the examination leading to the**BCS Practitioner Certificate in Systems Development Essentials**.

The course may also be taken as part of a wider programme leading towards the**BCS Diploma in Solution Development** or related Systems Development Diploma pathways.

This is an intensive three-day programme with a strong emphasis on practical application. Participants complete exercises, case-study tasks, and sample examination activities throughout the course.

Those intending to sit the BCS examination should expect to spend approximately**60–90 minutes each evening** reviewing the course material and working through example examination questions.

## Recommended Course Sequence

For learners following a Systems Development Diploma pathway, the recommended sequence is:

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

After the examination, BCS sends candidates an email asking them to register for access to the results system. Once results are released, candidates can log in to their account to view their outcome.

## Method Choices

The BCS syllabus requires training providers to select a specific development approach and explain it in more detail than the generic approaches covered elsewhere in the programme.

This course uses:

- **Dynamic Systems Development Method (DSDM)** as the full lifecycle development framework
- **Scrum** as the application software development approach

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- **Unified Modelling Language (UML)** for modelling business and software specifications where appropriate

DSDM and Scrum are widely used industry approaches and may be applied together. UML is used to represent process, data, and event perspectives within system specifications.

## Prerequisites

No previous knowledge of systems analysis techniques is required.

Candidates who require special examination arrangements should review the BCS Special Needs and Reasonable Adjustments policies and ensure that any requirements are communicated sufficiently in advance.

Candidates sitting a BCS examination must bring valid photographic identification with them.

Examples include:

- Passport
- Driving licence
- Student identification card

Failure to provide acceptable photographic identification may result in the candidate being unable to sit the examination.

BCS may provide additional examination time or other reasonable adjustments for candidates with a disability or whose first language differs from the language of the examination paper. Eligibility and application requirements are defined within the relevant BCS policies.

The examination is currently paper-based. Remote learners should contact their support team to confirm the available examination arrangements. Learners attending the course in person normally sit the examination at the end of the course.

## Who Should Attend

This course is particularly suitable for:

- Individuals who are new to systems analysis
- Professionals who need to develop and practise fundamental systems development skills
- Business or technical professionals moving into systems analysis roles
- Candidates wishing to achieve the BCS Practitioner Certificate in Systems Development Essentials

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## What You Will Learn

By the end of the course, participants will be able to:

- Identify the tasks and disciplines required for systems development and implementation
- Explain the relationship between systems development and the broader concept of solution development
- Interpret business requirements and translate them into systems requirements
- Describe the commonly used development lifecycles defined within the syllabus
- Select an appropriate development lifecycle based on specific characteristics
- Explain in detail one method that incorporates one or more generic lifecycle approaches
- Describe the structure, activities, and deliverables of the selected method
- Identify key roles and responsibilities within the chosen method
- Explain how those roles can be organised into effective teams
- Describe, interpret, and quality assure the key models used by the selected method
- Represent process, data, and event perspectives
- Explain the difference between logical and physical models
- Use different interpersonal communication techniques effectively
- Quality assure systems requirements documentation and models
- Identify different architecture types used in systems development solutions
- Conduct a quality review
- Explain how CASE, CAST, and Application Lifecycle Management tools can support systems development

## Training Outline

### Systems Development Roles and Responsibilities

This section examines the principal roles involved in systems development and implementation.

Topics include:

- Systems analysts
- Designers
- Developers
- Testers
- Technical architects
- Responsibilities of each role
- Characteristics of the roles
- Relationships between development roles
- Team structures
- Building effective development teams

### Architecture

This section introduces the different levels of architecture that influence systems development.

Topics include:

- Enterprise Architecture

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- Business Architecture
- Solution Architecture
- Infrastructure Architecture
- Networks and databases
- Inputs at Enterprise level
- Inputs at Solution level
- Inputs at Infrastructure level
- The impact of design decisions

### Systems Development Lifecycles

Participants examine and compare the major lifecycle approaches used in systems development.

Topics include:

- Waterfall
- V Model
- Incremental or phased delivery
- Spiral or iterative development
- Advantages of each lifecycle
- Disadvantages of each lifecycle
- Selecting the appropriate approach based on defined characteristics

### Development Practices

This section covers different approaches to developing or acquiring systems.

Topics include:

- Bespoke development
- Evolutionary / Agile development
- Prototyping
- Component-based development
- Software package solutions
- COTS – Commercial Off-the-Shelf solutions

### Methods

This section explores the structure and content of representative systems development methods.

Topics include:

- DSDM
- Scrum
- The structure of the selected method
- Activities within the method
- Roles and team structures
- Products and deliverables

Using UML, three representative modelling perspectives are explored:

- Process perspective
- Data perspective

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- Event perspective

Participants also examine how these models can be used to describe both logical and physical aspects of a system.

### Systems Investigation

This section focuses on techniques used to investigate business needs and define system requirements.

Topics include:

- Workshops
- Prototyping
- Interviewing
- Questionnaires
- Scenario analysis
- Functional requirements definition
- Non-functional requirements definition
- Documenting system requirements
- Human aspects of systems investigation
- Introducing organisational change

### System Design, Implementation and Maintenance

This section examines the transition from requirements into implemented and supported systems.

Topics include:

- Controls and security
- Verification
- Validation
- Interface design
- Design principles
- Legal constraints
- Ethical constraints
- Financial constraints
- Different implementation approaches
- Sign-off
- Deployment
- Post-implementation reviews
- Maintenance types
- Support activities

### Quality Assurance

This section explores techniques used to maintain and assess quality throughout systems development.

Topics include:

- Definitions of quality
- Requirements-driven testing

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- Walkthrough techniques
- Inspection techniques
- Post Project Reviews
- Service Level Agreements

### CASE, CAST and Application Lifecycle Tools

This section examines software tools used to support systems development.

Topics include:

- Software support for systems development
- Features of CASE tools
- Features of CAST tools
- Application Lifecycle Management tools
- Lifecycle coverage
- Configuration control
- Version control

### Case Study and Exercises

A case study and supporting exercises are used throughout the course to reinforce the subjects covered.

Participants complete:

- Analysis exercises
- Systems development scenarios
- Modelling activities
- Quality review exercises
- Example examination questions

A sample examination paper and marking scheme are also provided.