Systems Development Essentials with Agile Duration: 3 days	Systems Development Essentials with Agile is concerned with the fundamental skills of systems development. Its focus is on systems investigation and quality assurance as these underpin all successful systems development. Systems Development Essentials with Agile also introduces the candidate to how the systems development effort could be organised. The course distinguishes between generic lifecycle types, methods and approaches. Systems Development Essentials with Agile explores the fundamental differences between object-oriented and structured systems development. It also focuses on the basic principles of agile systems development and it recognises how a commitment to software package implementation changes the structure of the systems development approach. Combined with *Systems Modelling Techniques with UML* this course provides delegates with a complete basic systems analysis course. Systems Development Essentials with Agile is delivered by trainers who bring their substantial experience of practical systems analysis projects to the programme. A comprehensive manual, containing detailed information about systems development techniques and providing references for further reading, is supplied as part of the course.

Course Objectives:

At the end of this course participants will be able to;

- Identify the actors, tasks and disciplines required for systems development and implementation.
- Identify different architectural considerations
- Investigate a system
- Interpret business requirements and produce system requirements
- Quality assure the system requirements documentation
- Derive test cases from the systems requirements documentation
- Describe a range of systems development lifecycles
- Describe the principles, structure and activities of the Unified Process
- Describe, interpret and quality assure use case diagrams, use case descriptions, class diagrams and sequence diagrams
- Make effective use of different methods of interpersonal communications.
- Conduct an appropriate system review
- Explain how CASE tools might be used to support the Unified Process

ISEB certificates

This course prepares participants to sit a one-hour, open book, examination leading to the certificate in Systems Development Essentials offered by the Information Systems Examinations Board (ISEB). This certificate is a core certificate in the ISEB diploma in Systems Development and is also an optional certificate in the ISEB diploma in Business Analysis.

Course Content:

1. **Roles in systems development**

- The purpose, objectives and tasks of systems development
- Roles and actors in systems development
- Technical and interpersonal skills of the analysts
- The emergence of skills frameworks (SFIA+)
- The Capability Maturity Model Integration (CMMI)

2. **Systems architecture**

- Enterprise, systems and infrastructure levels of architecture
- The Zachman Framework
- Inputs at an enterprise level (EAP)
- Inputs at system and infrastructure level
- Components of an EAP methodology

3. **Development approaches**

- Bespoke development
- Commercial off the shelf (COTS) software package solutions
- Configuring and customising COTS software package solutions
- Component-based systems development
- Service-based systems development

4. **Systems development lifecycles**

- Waterfall model
- V model
- Incremental model
- Spiral model
- Advantages and disadvantages of each approach
- Selection of an appropriate approach

5. **Methodologies**

- Traditional and structured approaches
- Agile Development / Rapid Application Development / eXtreme Programming
- The Unified Process (UP) and the Unified Modeling Language (UML)
- Models of the UML
- Interpretation of
- Use case diagram
- Use case description
- Class diagram
- Sequence diagram
- Phases of the Unified Process
- Workflows of the Unified Process

6. **Systems Investigation**

- Fact finding approaches:
- Workshops
- Prototyping
- Interviewing
- Questionnaires
- Scenario analysis
- Other approaches
- Functional requirements definition
- Non-functional requirements definition
- Documenting requirements
- Human aspects of systems investigation and introducing change

7. **Systems design, implementation and maintenance**

- Aspects of the production environment
- Design principles and constraints (legal, ethical, financial)
- The tasks of implementation
- Sign off and hand over
- Post-implementation reviews
- Different types of maintenance

8. **Quality Assurance**

- Definitions of software quality
- The V model
- Requirements-driven testing
- Static Testing: types of walkthrough and inspection
- Post-project reviews
- Service Level Agreements

9. **CASE and CAST tools**

- Features of Computer Aided Software Engineering (CASE) and Computer Aided Software Testing (CAST) tools
- Life-cycle coverage
- Requirements traceability
- Advantages and disadvantages