

# System Modelling Techniques (UML)

## Profile

---

In order to communicate system requirements clearly and accurately to both business and IT stakeholders, it is vital for analysts and designers to be able to construct models from a variety of perspectives. In most cases these models will provide the basis for more detailed design.

The starting point for this course is a set of requirements, as defined in the Systems Development Essentials course. It is primarily concerned with modelling systems using UML techniques. It requires delegates to construct four main types of model reflecting different perspectives and to describe the interactions between them.

At the end of the course delegates may sit an examination to attain the ISEB Business Systems Development certificate in Systems Modelling Techniques. (These delegates should also book on course code SMTUEX-1). This course may be taken as part of the QA-IQ programme leading to the ISEB Diploma in Systems Development.

This is an intensive four day course that places emphasis on the practical application of the modelling techniques covered. Delegates participate in exercises, and case study tasks.

Those delegates taking the ISEB certificate will need to spend 60-90 minutes each evening on revision and example examination questions.

### Course content

#### The Need for Standard Techniques

Places business systems modelling in context within a project life-cycle;  
Types of model; Current and proposed business system modelling

#### Process Modelling using Activity Diagrams

UML Business Modelling Notation; Modelling business objectives, critical success factors and KPI's with the UML; Modelling the business process with activity diagrams; Swimlanes; Actions and activities; Send/receive events.

#### Static Modelling of Data using Class models

UML structure modelling notation - class and object diagrams; Objects, Classes and Business Classes; Introduction to class modelling; Attributes and Associations; Traceability through CRUD; Object Flows on Activity Diagrams

#### Dynamic Behaviour Modelling using State Charts

UML statechart notation; Modelling events and states; Events, states and business rules; Events and Activity Diagrams

## User Interface Modelling

UML Notations for UI Modelling; Navigation Modelling; Modelling Web applications

## Reviews

Guidelines and approach for reviewing the models against the business objectives and system requirements for consistency and completeness; Use of Structured Walkthroughs for peer and business domain expert validation

## Case Study

Throughout the course, a case study is used to reinforce and practise the topics discussed

## **Prerequisites**

---

An understanding of the fundamentals of systems development, or attendance of QA-IQ's Systems Development Essentials course.

Those who need to model business systems using UML techniques  
Those wishing to attain the ISEB Certificate in Systems Modelling Techniques (UML). (These delegates should also book on course code SMTUEX-1). Candidates with special examination requirements should consult the ISEB web site ([www.iseb.org.uk](http://www.iseb.org.uk)) for the ISEB Special Needs policy. Note that the ISEB must be advised at least four weeks in advance of any special requirements.

## **Skills**

---

On completion, delegates will be able to

- Justify the need for modelling and modelling techniques
- Explain why it is important to model system requirements from different perspectives and identify specific modelling techniques
- Construct a static structure model (class diagram)
- Construct a process model (activity diagram)
- Construct a simple dynamic event driven model (statechart)
- Construct a simple user interface model (user conceptual model, web site navigation model)
- Evaluate how the various models reflect business objectives and system requirements (via critical success factors)
- Appreciate how the various perspectives inter-relate to each other