



# UML Training Courses from CRaG Systems

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## Object Oriented System Architecture and Design using UML Training Course - OOSAD UML - 2 Days

This UML training course is aimed at system architects and developers who want to create a layered, component based, model of system architecture and design in order to maximise the maintainability, re-use and extensibility of the resulting code. The industry best practice modelling techniques are based on the Unified Modelling Language v2.1 and are taught within the context of a well defined [model-driven software development process](#). The modelling employed is applicable to a wide variety of technologies and sufficiently detailed for code generation. Each technique is taught to the level required for competence on a real project. Understanding is tested and improved with exercises based on a real-world project example and [using a suitable case tool](#).

### Delegates will learn:

- The detail of object orientation
- The necessary detail of the Unified Modelling Language
- How to develop a flexible system architecture from an object oriented analysis model
- How to develop component and deployment models for the system
- How to model the design of a component using sub-systems and interfaces
- How to build libraries of re-useable classes using generalisation and inheritance
- How to model the use of technology and frameworks as series of design patterns
- How to integrate libraries and frameworks into the design of components
- How to generate frame code and keep the design and code models synchronised
- How to architect, design, build, test and deliver components as part of an incremental model-driven development process

### Suitable for:

System Architects, System Designers, Developers and Programmers with at least 2 years experience, preferably in a modern object-oriented language. This course is not suitable for those seeking certification as a step towards a qualification. See [UML Certification](#) for a detailed discussion.

### Pre-requisites:

Completion of the CRaG Systems [Object Oriented System Analysis using UML Training Course](#) or equivalent

### Course Logistics:

Course attendance is limited to 12 students. Courses start at 9.30am on the first day, 9.00am on subsequent days and finish at 5.00pm each day. Students use a computer for the exercises. For a discussion on case tool use please see [Case Tool Use on Courses](#). Printed course manuals for each student with copies of all presentations, exercises and solutions are provided.

### On-Site (In-House) Courses:

The client is expected to provide an appropriate venue, refreshments, SVGA/XGA projector and screen, whiteboard or flipchart and at least one computer per two students loaded with a UML case tool. For a full discussion of on-site course issues please see [On-Site Course Logistics](#).

### Scheduled Public Courses:

This course is currently not available as scheduled public training. Please see the [Scheduled Public Courses](#) page for available courses.

**Pricing:**

On-site (in-house) course pricing is available from the [On-Site Course Price Calculator](#) page. Public course pricing is available on the [Scheduled Public Courses](#) page. Consultancy pricing is available on the [Consultancy](#) page.

**Training Course Outline**

<p><b>Day 1</b></p> <p><b>Introduction and Review</b></p> <p>People - Course Structure - Use Cases and System Analysis - Architecture and Design - A Process for Modelling <i>Review Workshop (if required)</i></p> <p><b>Architecture, Components and Implementation Diagrams</b></p> <p>Packages and Dependencies - Stereotypes - Control Objects - Layered Architectures - Interfaces, Subsystems and Components - Task Modelling - Component Diagrams - Deployment Diagrams <i>Architecture Workshop</i></p> <p><b>Class Relationships and Inheritance</b></p> <p>Class Similarities and Differences - Generalisation Syntax - Generalisation Hierarchies - Multiple Inheritance - Polymorphism - Generalisation versus Interface - Class Dependency</p>	<p><b>Day 2</b></p> <p><i>Generalisation Workshop</i></p> <p><b>Design Patterns</b></p> <p>Reflexive Aggregate - Collection Class - Observer - State Machine - Meta-Model - Modelling Patterns <i>Design Patterns Workshop</i></p> <p><b>Detailed Design</b></p> <p>Subsystem Design - Architectural Mechanisms - Linking to Libraries and Frameworks - Visibility and Other Properties - Completing the Model - Incremental Development - Traceability and Review <i>Design Workshop</i></p>
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