



# MANIPAL UNIVERSITY JAIPUR

School of Computing and Information Technology

Department of Information Technology

Course Hand-out

Object Oriented Systems Development | CS 2102 | 4 Credits

Session: July '15 – December '15 | Faculty: Roheet Bhatnagar

**Course Outcomes:** At the end of the course, students will be able to

- [2102.1] Appreciate the concept of information system and object orientation.
- [2102.2] Understand the nitty-gritties of Object Oriented Systems Development.
- [2102.3] Understand the significance of different UML2.0 diagrams and how to create them for a given scenario.
- [2102.4] Analyse and Design a complete system for a given real world scenario.
- [2102.5] Validate, Verify and Test a complete system by building relevant test cases.
- [2102.6] Assess the importance of Design Patterns in Software Development & hence employability.
- [2102.7] Critically analyse the system from different perspectives before arriving at its design for a given problem.

## A. SYLLABUS

Introduction to information systems, Object Basics: encapsulation, Association and Aggregation, Inheritance, Dynamic and static type systems, Polymorphism, Dynamic Binding, Software development Methodologies, Requirements: Business perspective, Developer perspective; Introduction to OOAD with UML 2.0: structure diagrams, behavior diagrams, extension mechanisms; Analyzing the problem: static and dynamic analysis, Designing the system architecture: priorities, system design, concurrency, security, Choosing technologies, typical front end configurations, back-end configurations; Designing subsystems: mapping the analysis class model into the design class model, handling persistence with a relational database, designing user interfaces, using patterns, frameworks and libraries, handling multiple activities; Reusable design patterns: patterns template, common design patterns; Specifying the interfaces of classes, Testing: automating tests, testing strategies, test driven development using JUnit.

## B. TEXT BOOKS

- A) Object-Oriented Analysis & Design- understanding System Development with UML 2.0M – M. Docherty, Wiley India Pvt. Ltd., 2010.

