

MCPE2003 OBJECT ORIENTED ANALYSIS & DESIGN (3-0-0)

Course Objectives:

1. To learn the concepts of Object-Oriented Analysis and Design;
2. Exposing the development of OOAD based applications

Module - I:

Object Model – Evolution, Elements – Nature of Classes and Objects – Relationships among Classes - Classification – Identification of classes and objects – Key abstractions and mechanisms – Basic and Advanced Modeling techniques. Methodology – Modeling and UML – Rumbaugh's Method – Booch Method – Jacobson et al Method – Comparisons – UML – Static-Dynamic Models – Diagrams – Use Cases

Module - II:

Process of design, design principles, architectural patterns, design document, difficulties and risks in design - Frameworks: reusable subsystem. Design patterns – Singleton, observer, adapter, Façade, proxy with examples. - Pattern Categories - Relationships between patterns - Pattern descriptions – Patterns based Applications – Object Oriented Database

Module - III:

Java - Features – Structure – Elements of Java – Array, String, String Buffer, Vectors –Methods – Object Oriented Features- Classes, Objects – Constructors – Package – Inheritance – Interface – Abstract Class - Special types of classes.

Module - IV:

Applet Programming – AWT – Graphics - Event Handling – Exception Handling – Utilities and Collections – I/O Streams - Multithreaded Programming - Swings - J2EE Architecture

Course Outcomes:

- CO1: Define the fundamentals of OO approach
- CO2: Design OO Application using design patterns.
- CO3: Solve real world problems by applying OOAD principle
- CO4: Acquire expertise in Java Programming

Books:

- [1] Grady Booch, Michael W. Engel, Kelli A. Houston, Robert A. Maksimchuk, Bobbi J. Young, Jim Conallen, "Object-Oriented Analysis and Design with Applications", 3rd Edition, Pearson Education, 2009
- [2] Michael Blaha and James Rumbaugh, "Object-Oriented Modeling and Design with UML", 2nd Edition, Pearson Education, 2005
- [3] Erich Gamma, Richard Helm, Ralph Johnson & John Vlissides, "Design Patterns: Elements of Reusable Object-oriented Software", Pearson Education India, 2004.