Object Oriented System
MIE 111

Semester: First **Full Marks: 100**

Credit Hour: 4 **Internal: 40**

Final Exam: 60

General Objectives;

* Visualize the concept of object oriented technology in designing the new system.

* Conceptualize the importance UML, AUML and other object oriented tools for developing or reengineering the system.

Specific Objectives;

Specific objectives of this unit are;

* to make the student realize the importance of object oriented methods,

* to clarify the various object oriented tools

* to familiarize the students with the techniques of developing new system using the various object oriented tools.

* to involve the students in designing a project based on the object oriented concepts.

COURSE CONTENT

Unit 1: Introduction **5 Hrs**

Introducing the course, General Concepts and need of object oriented system, Defining complex system, Various attributes of Complex system, The general Concepts of OOA & OOD.

Unit 2: Object Oriented Design. . **10 Hrs**

Defining Object Oriented Design, General characteristics of OOD, Benefits of Object Model, Detail concept of Class, Object, Inheritance, Polymorphism etc

Unit 3: UML **10 Hrs**

Definitions and Concepts, UML Diagrams: Class & Object Diagram, Use Case Modelling & Diagram, Sequence Diagram, State Diagram, Package Diagram, Activity Diagram, Component Diagram, Deployment Diagram.

Unit 4: Domain Analysis **10 Hrs**

Concepts & Definition, Domain Class Model, Finding Classes, Association, Keeping Right Class & Association, Finding Methods, Data Dictionary Preparation, Finding Attributes, Refining with Inheritance, Testing the Access Path, Iterating Class Model Group class into Package, Application Analysis.

Unit 5: Agent UML. **5 Hrs**

Defining Agent, Agent Orientation, Agent Oriented Programming, Common feature of agents and its representation.

Unit 6: Object Oriented Metrics. 5 Hrs

Internal quality of Design, Principles of Object Oriented Design, Software Quality, Metrics for Object oriented Systems.

Unit 7: Object Oriented System Development Life Cycle. 5 Hrs

S/W Development Process, Building High Quality software, Approaches to System Testing, Verification & Validation, Object Oriented Approach for s/w development, Prototyping,

Unit 8: Project Design 10 Hrs

A detailed project design must be done using the above concepts.

References

1. *Object Oriented System by Grady Booch*
2. *Object Oriented Systems Analysis and Design using UML by Simon Bennett, Steve McRobb, Ray Farmer.*
3. *Object Oriented Systems Analysis and Design by JOEY F. George, Dinesh Batra, JEFFREY A. HOFFER*