

M.Sc.(IT) 2nd Semester

Subject Code: MS23

Subject Name: OOAD AND UML

Block 1 – Class & Objects – Introduction

Unit 1- Structured approach vs. object oriented approach: Introduction Objectives, What is software, High-Quality software , Where does the traditional approach fail, Pitfalls of top down design, How object method succeeds, Merits of object approach, Summary, Objective type questions, Review questions.

Unit 2- The Object Model: Objectives, Foundations of the object Model , Definitions: OOA, OOD and OOP, Major elements of Object Model, Abstraction, Encapsulation, Modularity, Hierarchy, Minor elements of the object model, Typing, Concurrency, Persistence, Summary , Review questions.

Unit 3- Classes and Objects: Introduction, Objectives, Object, Definition, Relationships among objects, Class, Definition, Relationships among Classes, Summary, Review questions, Objective type questions, Fill in the blanks

Block 2 – OOA & UML

Unit 1- Road Map for OOA and OOD: Objectives, Various Activities in a Design, OOA Phase, Creating Classes, Assigning Responsibilities, CRC Modeling, OOA, Checkpoint, OOD Phase, OOD Checkpoint, Software problems, Best practices of software engineering, Fill in the blanks, Review questions.

Unit 2- Unified Modeling Language: Objectives, Introduction, UML and brief background, Architecture of UML, Why is UML powerful, What is a process, Phases and Iterations, Steps in UML, Modeling and UML, Goals of UML, Outside The Scope Of UML, A overview of

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UML, Views, Modeling elements, Relationships, UML diagrams, Extensibility mechanisms.

Unit 3- UML Modeling elements: Introduction, Objectives, Class, Attribute, Attribute Compartment Attribute Scope, Derived Element, Operation, Object, Interface, Packages.

Unit 4- Relationships connect modeling elements: Introduction, Objectives, Relationships Notations, Association, Association End, Aggregation, Composition, Generalization, Dependency, Realization, Relationship between Objects.

Block 3 – Extensibility Mechanisms

Unit 1- Diagrams in UML: Introduction, Objectives, Use Case model, Static view diagram, Class diagram, Object diagram, Dynamic view diagram, Statechart diagram, Interaction diagram, Sequence diagram, Collaboration diagram, Implementation diagram, Component diagram, Deployment diagram, Summary of Diagrams in UML.

Unit 2- Extensibility Mechanisms: Introduction, Objectives, Constraint and Comment, Tagged values, Stereotypes, Summary, Review questions, Objective type questions.

Unit 3- Classes and Objects: Introduction, Objectives, Object, Definition, Relationships among objects, Class, Definition, Relationships among Classes, Summary, Review questions, Objective type questions.