

## SREENIVASA INSTITUTE of TECHNOLOGY and MANAGEMENT STUDIES

II MCA - II Semester

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### 16MCA222 OBJECT ORIENTED ANALYSIS & DESIGN (USING UML)

#### Course Objectives:

- To explore the Basic Building Blocks of UML
- To Learn about Structural Modeling Diagrams
- To Learn about Behavioral Modeling Diagrams
- To Learn Architectural Modeling Diagrams
- To Analysis and Design Library management system using UML

#### Syllabus:

##### UNIT I : Introduction to UML

Importance of modeling- principles of modeling- object oriented modeling- conceptual model of the UML- Architecture- Software Development Life Cycle. Basic Structural Modeling: Classes- Relationships- common Mechanisms- and diagrams. Advanced Structural Modeling: Advanced classes- advanced relationships- Interfaces- Types and Roles- Packages.

##### UNIT II : Class & Object Diagrams

Terms and concepts- common modeling techniques for Class & Object Diagrams- Interactions- Interaction diagrams.

##### UNIT III : Basic Behavioral Modeling

Use cases- Use case Diagrams- Activity Diagrams. Advanced Behavioral Modeling- state machines- processes and Threads- Time and space- statechart diagrams.

##### UNIT IV : Architectural Modeling

Components- Deployment- Component diagrams and Deployment diagrams.

UNIT V : A process for using UML, Case Study- Automation of Library Management System.

#### Course Outcomes:

- Know the Importance, principles of UML.
- Know to about various Structural Diagrams
- Understand various Behavioral Diagrams
- Know about Reverse and Forward Engineering
- Draw both structural and Behavioral Diagrams for Library Management System

## TEXT BOOKS :

1. The Unified Modelling Language User Guide, 2/e, 2005, Grady Booch, James Rumbaugh and Ivar Jacobson, Pearson Education, New Delhi, India.
2. UML 2 Toolkit, 1/e, 2003, Hans,Erik Eriksson, Magnus Penker , Brian Lyons and David Fado, WILEY Dreamtech India Pvt. Ltd., India.

## REFERENCE BOOKS:

1. Fundamentals of Object Oriented Design in UML, 1/e, 1999, Meilir Page, Jones, Pearson Education, India.
2. Modelling Software Systems Using UML2, 1/e, 2010, Pascal Roques, WILEY Dreamtech India Pvt. Ltd.
3. Object Oriented Analysis & Design, 1/e, 2004, Atul Kahate, The McGrawHill Companies, Hyderabad, India.
4. Practical Object Oriented Design with UML, 2/e, 2005, Mark Priestley, TATA McGraw Hill, Hyderabad, India.
5. Object-Oriented Analysis and Design with Applications, 3/e, 2007, Grady Booch, Robert A. Maksimchuk, Michael W. Engle, Bobbi J. Young, Jim Conallen, Kelli A. Houston, Pearson Education, India.

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