# 19CS3102 - OBJECT ORIENTED ANALYSIS AND DESIGN

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| **Course Category:** | Program Core | **Credits:** | 3 |
| **Course Type:** | Theory | **Lecture - Tutorial - Practical:** | 3-0-0 |
| **Prerequisite:** | Require software engineering basics and fundamentals of object oriented features. | **Sessional Evaluation:**  **Univ.Exam Evaluation:**  **Total Marks:** | 40  60  100 |
| **Objectives** | * Specify, analyse and design the use case driven requirements for a particular system. * Model the event driven state of object and transform them into implementation specific layouts. * Identify, analyse the subsystems, various components and collaborate them interchangeably. | | |

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| **Course Outcomes** | Upon successful completion of the course, the students will be able to: | |
| CO1 | Know the importance of modeling and principles, architecture and software development life cycle. |
| CO2 | Learn about the basics and advanced structural modeling techniques. |
| CO3 | Draw the class and object diagrams for various applications. |
| CO4 | Gain knowledge about the basics of behavioral modeling and its applicability. |
| CO5 | Learn the state, time and space issues and supporting applicability. |
| CO6 | Study various component and deployment diagram properties for different applications. |
| **Course Content** | UNIT-I  **Introduction to UML:** The importance of modeling, Principles of modeling, Object oriented modeling, A conceptual model of the UML, Architecture, Software Development Life Cycle.  UNIT-II  **Basic Structural Modeling:** Classes, Relationships, Common Mechanisms and Diagrams.  **Advanced Structural Modeling1:** Advanced Classes, Advanced Relationships.  UNIT-III  **Advanced Structural Modeling2:** Interfaces, Types and Roles, Packages.  **Class & Object Diagrams:** Terms and Concepts, Common Modeling techniques for Class & Object Diagrams.  UNIT-IV  **Basic Behavioral Modeling:** Interactions, Interaction diagrams, Use cases, Use case diagrams, Activity diagrams.  UNIT-V  **Advanced Behavioral Modeling:** Events and Signals, State machines, Process and Threads, Time and Space, State chart diagrams.  UNIT-VI  **Architectural Modeling:** Components, Deployment, Component diagrams and Deployment diagrams. | |
| **Text Books and References:** | Text Books:   1. Grady Booch, James Rumbaugh, IvarJacobson: The Unified Modeling Language User Guide, Pearson Education. | |
| Reference Books:   1. Meilir Page-Jones: Fundamentals of Object Oriented Design in UML, Pearson Education. 2. AtulKahate: Object Oriented Analysis & Design, The McGraw-Hill Companies. | |
| **E-Resources** | 1. <https://nptel.ac.in/courses> 2. <https://freevideolectures.com/university/iitm> | |