



## **C. U. SHAH UNIVERSITY – Wadhwan City**

**FACULTY OF:** -Technology and Engineering (Diploma Engineering)

**DEPARTMENT OF:** -Computer Engineering

**SEMESTER:** - V

**SUBJECT CODE:** - 2TE05UML1

**SUBJECT NAME–** Object Oriented Concepts and UML

### **Teaching & Evaluation Scheme:-**

Subject Code	Name of the Subject	Teaching Scheme				Evaluation Scheme							
		Th	Tu	Pr	Total	Theory				Practical (Marks)			Total
						Sessional Exam		University Exam		Internal		University	
						Marks	Hours	Marks	Hours	Pr/Viva	TW	Pr	
<u>2TE05UML1</u>	Object Oriented Concepts and UML	03	00	02	05	30	1.5	70	03	.....	20	30	150

### **Objectives: -**

The main objective of this course is to explain the basics of Object oriented concepts, make students more familiar with different Modeling Methodology, and help them to prepare object model for given problem statement. This course also aims to describe the Concepts of Class Diagram, State Diagram, Interaction Diagram, Sequence Diagram, and Usage of Design Tools and other UML concepts.

**Prerequisites: -** Basic concepts of Class, Basic Concepts of Objects, and Database.

### **Course Outlines:-**

Sr. No.	Course Contents	Hours
1	<b>Introduction</b> Object Orientation, Object Development, About Object Orientated Technology, Development and OO Modeling History.	06
2	<b>Modeling Concepts</b> Modeling, Abstraction, The Three Models (Class Model, State Model, Interaction Model) Relationship among the Models.	06
3	<b>Class Modeling</b> Object and Class Concepts (Objects, Classes, Class Diagrams, Values and Attributes) link and association Concepts, Generalization and Inheritance, Use of Generalization.	06
4	<b>Advanced Class Modeling:</b> Advanced object and Class Concepts, Multiplicity, Scope, Visibility, Aggregation, Aggregation versus Association, Metadata, Constraints, Use of Constraints, Derived Data, and Package.	08

5	<b>State Modeling</b> Event, state, Transition and conditions, state diagram, state diagram behavior, concurrency, Relation of Class and State models, Nested State Diagram.	06
6	<b>Interaction Modeling</b> Use case Models, sequence models, activity models.	06

**List of Experiments:-**

1. To Study and Develop Different Logic to Solve given Problems.
2. To Study about Class Diagram.
3. To Study and Implement of Iteration Model.
4. To Study and Implement of State Diagram.
5. To Study about Generalization.

**Learning Outcomes:- At the end of this course, students would be able to**

- Learn about All UML Diagrams. Generalization.
- State Diagram.
- Advance Class Modeling.

**Books Recommended:-**

- Object Oriented Modeling and Design with UML By : Michael R Blaha, James R Rumbaugh.
- The UML User Guide(Addison Wesley) By: Booch, Jacobson, Rumbaugh. Practical OOD with UML By: Mark Paisestly.
- UML 2 Bible By: Tom Pender Wiely Publication.

**E- Reference:-**

- <https://uml.tutorials.trireme.com/>
- [http://pigdeye.kennesaw.edu/dbraun/csis4650/A&D/UML\\_tutorial/](http://pigdeye.kennesaw.edu/dbraun/csis4650/A&D/UML_tutorial/)
- <http://www.smartdraw.com/tutorials/software-uml/uml.htm>.
- <http://www-db.stanford.edu/burback/watersluice/node55.html>.