IV B.Tech – I Semester
(17CS701) UNIFIED MODELLING LANGUAGE

Int. Marks Ext. Marks Total Marks

			L	**T**	**P**	**C**
40	**60**	**100**	**3**	**1**	**-**	**3**

Pre-Requisites: knowledge on software engineering

Course Objectives:
- To understand how to solve complex problems
- Analyze and design solutions to problems using object-oriented approach
- Study the notations of Unified Modelling Language

UNIT-I: Introduction: The Structure of Complex systems, The Inherent Complexity of Software, Attributes of Complex System, Organized and Disorganized Complexity, Bringing Order to Chaos, Designing Complex Systems, Evolution of Object Model, Foundation of Object Model, Elements of Object Model, Applying the Object Model.

UNIT-II: Classes and Objects: Nature of object, Relationships among objects, Nature of a Class, Relationship among Classes, Interplay of Classes and Objects, Identifying Classes and Objects, Importance of Proper Classification, Identifying Classes and Objects, Key abstractions and Mechanisms.

UNIT-III: Introduction to UML: Why we model, Conceptual model of UML, Architecture, Classes, Relationships, Common Mechanisms, Class diagrams, Object diagrams.

UNIT-IV: Basic Behavioural Modelling: Interactions, Interaction diagrams, Use cases, Use case Diagrams, Activity Diagrams.

UNIT-V: Advanced Behavioural Modelling: Events and signals, state machines, processes and Threads, time and space, state chart diagrams.

UNIT-VI: Architectural Modelling: Component, Deployment, Component diagrams and Deployment diagrams. Case Study: The Unified Library application.

Course Outcomes:

CO-1	Gains knowledge on the Structure of Complex systems	L2
CO-2	Gains Knowledge on UML basic components	L2
CO-3	Gains Knowledge on Conceptual model of UML	L3
CO-4	Gains knowledge on Basic Behavioural Modelling	L3
CO-5	Gains Knowledge on Advanced Behavioural Modelling	L3
CO-6	Gains Knowledge on Architectural Modelling	L3

Correlation of COs with POs & PSOs:

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	3	3	-	2	-	-	-	-	-	1	-	-	3	-
CO-2	2	2	3	-	2	-	-	-	-	-	2	-	-	2	-
CO-3	2	2	3	-	2	-	-	-	-	-	1	-	-	1	-
CO-4	2	2	3	-	2	-	-	-	-	-	1	-	-	1	-
CO-5	2	2	3	-	2	-	-	-	-	-	1	-	-	3	-
CO-6	1	2	3	-	2	-	-	-	-	-	1	-	-	2	-

Text Books:
1. "Object- Oriented Analysis And Design with Applications", Grady BOOCH, Robert A. Maksimchuk, Michael W. ENGLE, Bobbi J. Young, Jim Conallen, Kellia Houston, 3rd edition, 2013, PEARSON.
2. "The Unified Modeling Language User Guide", Grady Booch, James Rumbaugh, Ivar Jacobson, 12th Impression, 2012, PEARSON.

Reference Books:
1. "Object-oriented analysis and design using UML", Mahesh P. Matha, PHI
2. "Head first object-oriented analysis and design", Brett D. McLaughlin, Gary Pollice, Dave West, O"Reilly
3. "Object-oriented analysis and design with the Unified process", John W. Satzinger, Robert B.Jackson, Stephen D. Burd, Cengage Learning 1. "The Unified modeling language Reference manual", James Rumbaugh, Ivar Jacobson, Grady Booch, Addison-Wesley.