

GANPAT UNIVERSITY									
FACULTY OF TECHNOLOGY									
Programme	Bachelor of Technology				Branch/Spec.	Computer Science & Engineering			
Semester	VI				Version	1.0.0.0			
Effective from Academic Year		2018 - 19			Effective for the batch Admitted in			June 2016	
Subject code	2CSE60E21		Subject Name		Object Oriented Analysis and Design				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	3	0	1	0	4	Theory	40	40	80
Hours	3	0	2	0	5	Practical	40	30	70
Pre-requisites:									
Object oriented programming									
Learning Outcome:									
After learning the course the students should be able to:									
<ul style="list-style-type: none"> • After successful completion of this course, student will be able to demonstrate the importance of modelling in the software development life cycle. • Become familiar with the Unified modelling Language. • Understand the object-oriented approach to analysing and designing systems and software solutions. Employ the Unified modelling Language notations to create effective and efficient system designs. • Understand the difference between writing programs for the software and doing analysis and design. • Problem formulation and decomposition (analysis) and solution building (design) will be covered. 									
Theory syllabus									
Unit	Content								Hrs
1	Introduction to OOAD and UML: Overview of Software Development Life Cycle (Waterfall Model), Introduction to Object Oriented analysis and design, overview of model with types and UML, UML structure: building blocks and architecture, Overview of static and dynamic UML diagrams Forward & Reverse Engineering: Introduction to Forward & Reverse Engineering using UML								
2	Use case Model: Introduction to use case diagram, Elements of use case diagram with notations: association/uses, include, extend, generalization								
3	Class & Object Model: Basics of object oriented concepts, Introduction to class and object diagram, identify the elements based on noun phrase method, Elements of class diagram with notations: object, class, link, association, multiplicity, link attributes, association end names, association classes, qualified association, association ends, N-ray association, aggregation and composition, generalization, abstract class								

4	Sequence & Collaboration Model : Introduction to Sequence & Collaboration diagram, Elements, Elements of sequence diagram Collaboration diagram with notations: object, messages, activation, lifeline, destroying objects, guard condition	
5	State Model : Introduction to State Diagram, Event ,Change Event, Signal Event, Call Event, Time Event , States, Transition & Conditions, Transition, Guard Condition, Action, State Diagrams, One shot 08 State Diagram, Creating State Diagram ,State Diagram Behaviour, Activity, Do-activity, Entry Activity, Exit Activity, Nested State Diagram, Nested States, Signal Generalization, Concurrency	
6	Activity and Swim lane Model : Introduction to Activity and Swim lane diagram, Elements, Elements of Activity and Swim lane diagram with notations: initial state or start point, activity or action state, action flow, decisions and branching, guard condition, Synchronization (fork and join), time event, merge event, swim lanes, final state or end point	
7	Component and Deployment Model : Introduction to Component and deployment Diagram, Elements of Component and deployment Diagram	
8	Forward & Reverse Engineering : Introduction to Forward & Reverse Engineering using UML	
Practical List		
<ul style="list-style-type: none"> • Draw activity diagram, class diagram, sequence diagram, use case diagram, object diagram using EA • Write a program based on Reflection • Demonstrate a program based on Delegation • Demonstrate a program based on Design Patterns • Program on factory pattern • Demonstrate a program based on Up casting and Down casting • Demonstrate a program based on Object Serialization/Deserialization 		
Text Books		
1	Object Oriented Modelling and Design with UML: by J. Rambaugh, et al., Second Edition Pearson	
Reference Books		
1	Magnifying object-oriented analysis and design by ArpitaPatil and Netra, PHI	
2	2 UML 2 and the Unified Process: Practical Object-Oriented Analysis and Design by Jim Arlow / IlaNeustadt	
3	The UML Users guide by Grady Booch, J. Rambaugh, Ivar Jacobson, Pearson Education	
4	Object Oriented System Development by Ali Bahrami, McGraw Hill	

