

18CST33 OBJECT ORIENTED PROGRAMMING

(Common to CSE and IT branches)

		Category	L	T	P	Credit
		PC	3	0	0	3
Preamble: To provide a concise introduction to the fundamental concepts of object oriented programming						
Prerequisites: Problem Solving and Programming / Basic Programming concepts						
UNIT – I						9
Introduction to OOP, Java, Classes and Objects: Software Development and object oriented programming paradigms - History and Evolution of Java –Overview –Data Types -Variables -Arrays – Operators -Control Statements –Classes –Fundamentals –Declaring Objects -Assigning Object Reference Variables -Methods –Constructors -this keyword -Garbage collection -finalize method -Stack Class.						
UNIT – II						9
Reusability, Packages and Interfaces: Overloading Methods -Objects as Parameters -Argument Passing - Returning Objects –Recursion -Access Control –Static –Nested and Inner Classes -Command-Line Arguments –Variable Length Arguments. Inheritance –Basics –Super keyword -Multilevel Hierarchy - Method Overriding -Dynamic Method Dispatch -Abstract Classes -final with Inheritance. Packages - Access Protection -Importing Packages- Interfaces.						
UNIT – III						9
Exception Handling, Multithreading, I/O and Applet: Exception Handling basics – Multiple catch Clauses- Nested try Statements - Java’s Built-in Exceptions –User defined Exception – Chained exceptions. Java Thread Model - Creating a Thread - Priorities – Synchronization – Inter thread Communication – Suspending - Resuming, and Stopping Threads – Multithreading. Enumerations - Wrappers – Auto boxing – Annotations. I/O Basics - Reading and Writing Console I/O - PrintWriter Class - Reading and Writing Files - Applet – Architecture – Skeleton – Display methods - Repainting – Applet tag – Passing parameters - transient and volatile modifiers.						
UNIT – IV						9
String Handling, Generics and Event Handling: String Class – methods – String Buffer Class – Methods – String Builder. Generics – Example – Parameters - General Form- Bounded Types - Wildcard Arguments - Generic Method and Interfaces – Raw Types and Legacy Code - Generic Class Hierarchies. Event Handling – Mechanisms -Delegation Event Model - Event Classes - Sources of Events - Event Listener Interfaces – Mouse and Keyboard events - Adapter Classes - Inner Classes						
UNIT – V						9
AWT: AWT Classes - Window Fundamentals - Frame Windows - Frame Window in an Applet – Graphics – Color – Fonts – Font Metrics. AWT Controls - Layout Managers - Menu Bars and Menus -Dialog Boxes - FileDialog - Handling Events by Extending AWT Components.						
						Total: 45
TEXT BOOK:						
1.	Schildt Herbert, “Java: The Complete Reference”, 9 th Edition,Tata McGraw Hill Publishing Company, New Delhi, 2014.					
REFERENCES:						
1.	Buyya Rajkumar, Thamarai Selvi S. and Xingchen Chu, “Object Oriented Programming with Java Essentials and Applications”, Tata McGraw Hill, 2009.					
2.	Deitel Paul and Deitel Harvey, “Java How to Program”, 8 th Edition, Eastern Economy Edition, 2010.					

COURSE OUTCOMES: On completion of the course, the students will be able to												BT Mapped (Highest Level)		
CO1:	apply the concepts of classes and objects to solve simple problems											Applying (K3)		
CO2:	develop applications using inheritance, packages and interfaces											Applying (K3)		
CO3:	experiment with exception handling mechanisms, multithreaded model, I/O packages and Applet classes											Applying (K3)		
CO4:	make use of string classes, generics and event handling concepts to solve real world problems											Applying (K3)		
CO5:	integrate the concepts of AWT for developing GUI based applications											Applying (K3)		
Mapping of COs with POs and PSOs														
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1	1									3	1
CO2	3	2	1	1									3	1
CO3	3	2	1	1									3	1
CO4	3	2	1	1									3	1
CO5	3	2	1	1									3	1
1 – Slight, 2 – Moderate, 3 – Substantial BT – Bloom’s Taxonomy														