Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058-India

(Autonomous Institute Affiliated to University of Mumbai)

Pre-requisite Course Codes		Programming Methodology and Data Structures (ES4)
Course Outcomes for Tutorial	CO1	Write programs using object oriented programming paradigm.
	CO2	Solve programs using inheritance and polymorphism
	CO3	Use abstract classes, interface and package to solve problems
	CO4	Apply concepts of multithreading and exception handling to create efficient program.
	CO5	Demonstrate use of string classes

Module No.	Unit No.	Topics	Ref.	Hrs.
1		**BASIC OF JAVA**	**2**	
	1.1	History & features, Difference between JDK,JRE,JVM, Unicode system, Advantages of OOP		3
	1.2	I/O using Scanner class & Command line argument, Object, Class, Constructor , Static Variable, Method & block		
	1.3	Branching & looping		
2		**OOP CONCEPTS**	1,2,4	
	2.1	Inheritance (IS – A), Aggregation & Composition (Has – A)		4
	2.2	Method overloading & overriding, Constructor overloading & overriding, this, super, final keyword		
	2.3	Runtime polymorphism, Static and Dynamic Binding		
3		**ABSTRACT CLASS, INTERFACE, PACKAGE**	1,2	
	3.1	Abstract class & interface, instance of operator		3
	3.2	Package and access modifier		
	3.3	Object class, Nested class		
4		**STRING HANDLING**	1,2	
	4.1	Immutable string ,Methods of String class,		1
	4.2	String comparison, concatenation, substring, toString method		
5		**EXCEPTION HANDLING**	1,2	
	5.1	What & why? Try & catch block, Multiple catch block, Nested try, Finally block		1
	5.2	Throw, Throws keywords, Exception propagation		
	5.3	Custom exception		
6		**MULTITHREADING**	1,2	
	6.1	Life cycle of a – thread, Create thread using, Thread & Runnable class		2
	6.2	Thread methods, schedule, sleep, join, Thread priority, Thread		

		group, Perform multiple task using multiple thread		
	6.3	Thread synchronization		
			Total	**14**

References:

[1] Ralph Bravaco , Shai Simoson , "Java Programing From the Group Up" ,Tata McGraw-Hill.

[2] Herbert Schildt, "Java The Complete Reference", Tata McGraw-Hill.

[3] Jaime Nino, Frederick A. Hosch, 'An introduction to Programming and Object Oriented Design using Java', Wiley Student Edition.

[4] C Xavier, "Java Programming A Practical Approach",Tata McGraw-Hill.

[5] James Holmes "Struts: The Complete Reference" Tata McGraw-Hill.

[6] Jim Keogh, "J2EE: The Complete Reference" Tata McGraw-Hill.