



# Sardar Patel Institute of Technology

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

(Autonomous Institute Affiliated to University of Mumbai)

Course Code	Course Name	Teaching Scheme (Hrs/week)			Credits Assigned			
		L	T	P	L	T	P	Total
CE34	Object Oriented Programming	3	--	--	3	--	--	3
		Examination Scheme						
		Theory Marks						
		ISE		MSE		ESE		
		10		30		100(60% Weightage)		

<b>Pre-requisite Course Codes</b>	ES4 (Programming Methodology and Data Structures)
At the end of successful completion the course, students will be able to	
<b>Course Outcomes</b>	CO1 Write programs using object oriented programming paradigm.
	CO2 Apply object oriented programming concepts like inheritance and package to solve problems.
	CO3 Use file handling concepts in Java for data input and output.
	CO4 Apply concepts of multithreading, exception handling to create efficient program.
	CO5 Demonstrate use of string and collection classes.

Module No.	Unit No.	Topics	Ref.	Hrs.
1		<b>BASIC OF JAVA</b>	2	
	1.1	History & features, Difference between JDK,JRE,JVM, Unicode system, Advantages of OOP		4
	1.2	Object & Class, Constructor , Command line argument, Static Variable, Method & block		
	1.3	Branching & looping		
2		<b>OOP CONCEPTS</b>	1,2,4	
	2.1	Inheritance (IS – A), Aggregation & Composition (Has – A)		8
	2.2	Method overloading & overriding, Constructor overloading & overriding, this, super, final keyword		
	2.3	Runtime polymorphism, Static and Dynamic Binding		
3		<b>ABSTRACT CLASS, INTERFACE, PACKAGE</b>	1,2	
	3.1	Abstract class & interface, instanceof operator		5
	3.2	Package and access modifier		
	3.3	Object class, Nested class		
4		<b>STRING HANDLING</b>	1,2	



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	<b>4.1</b>	Immutable string ,Methods of String class,		4
	<b>4.2</b>	String comparison, concatenation, substring, toString method		
	<b>4.3</b>	StringBuffer class, StringBuilder class, StringTokenizer class		
<b>5</b>		<b>EXCEPTION HANDLING</b>	1,2	
	<b>5.1</b>	What & why? Try & catch block, Multiple catch block, Nested try, Finally block		5
	<b>5.2</b>	Throw, Throws keywords, Exception propagation		
	<b>5.3</b>	Custom exception		
<b>6</b>		<b>MULTITHREADING</b>	1,2	
	<b>6.1</b>	Life cycle of a – thread, Create thread using, Thread & Runnable class		5
	<b>6.2</b>	Thread methods, schedule, sleep, join, Thread priority, Thread group, Perform multiple task using multiple thread		
	<b>6.3</b>	Thread synchronization		
<b>7</b>		<b>COLLECTION</b>	1,2	
	<b>7.1</b>	Collection framework, ArrayList, LinkedList		5
	<b>7.2</b>	HashMap, HashTable		
	<b>7.3</b>	Comparable & Comparator		
<b>8</b>		<b>INPUT &amp; OUTPUT</b>	2	
	<b>8.1</b>	FileOutputStream & FileInputStream, BufferedOutputStream & BufferedInputStream, FileWriter & FileReader		6
	<b>8.2</b>	Scanner, PrintStream, PrintWriter, CharArrayWriter		
	<b>8.3</b>	StreamTokenizer class		
			<b>Total</b>	<b>42</b>

## 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.