

**Type of course:** Practical**Prerequisite:** NA

Rationale: Java is a general-purpose computer programming language that is a class-based, object-oriented. It is intended to let application developers "write once, run anywhere" meaning that compiled Java code can run on all platforms that support Java without the need for recompilation.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks						Total Marks
L	T	P		Theory Marks			Practical Marks			
			ESE (E)	PA (M)		PA (V)		PA (I)		
				PA	ALA	ESE	OEP			
00	00	02	02	00	00	00	30	00	20	50

L- Lectures; P- Practical; OJT- On Job Training; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Programming problems based on all concepts covered in theory such as Arrays, Classes, Threads, Methods, and Applets etc.

Practical List:

Sr. No.	Practical / Hands on Exercise	Hrs.
1	Install JDK, write a simple "Hello World" or similar java program, compilation, debugging, executing using java compiler and interpreter.	4
2	a. Write a program in Java to find that given number or string is palindrome or not. b. Write an interactive program to print a string entered in a pyramid form.	2
3	Create a class which ask the user to enter a sentence, and it should display count of each vowel type in the sentence. The program should continue till user enters a word "quit". Display the total count of each vowel for all sentences.	2
4	a. Write programs in Java to use Wrapper class of each primitive data types b. Write a program in Java to develop overloaded constructor.	4
5	Create a class to find out whether the given year is leap year or not. (Use inheritance for this program)	2
6	Write a program in Java to develop user defined exception for 'Divide by Zero' error.	2
7	Write a program in Java to demonstrate use of this keyword. Check whether this can access the private members of the class or not.	2
8	Describe abstract class called Shape which has three subclasses say Triangle, Rectangle, Circle. Define one method area() in the abstract class and override this area() in these three subclasses to calculate for specific object i.e. area() of Triangle subclass should calculate area of triangle etc. Same for Rectangle and Circle	2
9	a. Write a program that executes two threads. One thread displays "Thread1" every 2,000 milliseconds, and the other displays "Thread2" every 4,000 milliseconds. Create the threads by extending the Thread class. b. Write a program in Java to demonstrate multiple try block and multiple catch exception.	4
10	a. Write a program to create "Hello Students" Applet. b. Create Number counter in an Applet using Thread Example.	4
	Total	28



GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Bachelor of Vocation (B.Voc), 2nd Semester

Branch: Software Development

Subject Name: OOPs with Java Lab

Subject Code: 21120206

With effective
from academic
year 2021-22

Reference Books:

1. Java Fundamentals A comprehensive introduction By Herbert Schildt, Dale Skrien, McGraw Hill Education.
2. Programming with Java A Primer – E.Balagurusamy, Mc Grawhill
3. Object Oriented Systems with Java, Tanweer Alam, Khanna Publishing House
4. Core Java, Tanweer Alam, Khanna Publishing House

Course Outcomes:

Sr. No.	CO Statement	Marks % Weightage
CO-1	Understand object oriented programming concepts and implement in java.	20
CO-2	Comprehend building blocks of OOPs language and inheritance	25
CO-3	Understand interface and packages in Java	15
CO-4	Implement multithreading in object oriented programs.	20
CO-5	Understand the concept of Applets	20

List of Open Source Software/learning website:

Students must refer to following sites to enhance their learning ability.

- 1) <http://www.oracle.com/technetwork/java/javase/downloads/index.html>
- 2) <http://docs.oracle.com/javase/tutorial/java/index.html>
- 3) <http://www.javatpoint.com/>
- 4) <http://www.tutorialspoint.com/java/>