



Type of course: Core

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		Practical		
			University exams (ESE)	Internal evaluation (PA)	External Practical /viva Exam(ESE)	Internal Practical /viva Exam(PA)		
3	-	-	3	50	-	-	-	50

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Contents:

Sr. No.	Practical / Hands on Exercise	Hrs.	Weightage
1	UNIT-I What is OOP? Concept of OOP. Principles of OOP. C++ vs JAVA, JAVA and Internet and WWW, JAVA support systems, JAVA environment. JAVA program structure, Tokens, Statements, JAVA virtual machine, Constant & Variables, Data Types, Declaration of Variables, Scope of Variables, Symbolic Constants, Type Casting. Operators: Arithmetic, Relational, Logical Assignments, Increment and Decrement, Conditional, Bitwise, Special, Expressions & its evaluation. If statement, if...else... statement, Nesting of if...else... statements, else...if Ladder, Switch, operators, Loops –While, Do, For, Jumps in Loops, Labelled Loops.	8	20
2	UNIT-II Defining a Class, Adding Variables and Methods, Creating Objects, Accessing Class Members, Constructors, Methods Overloading, Static Members, Nesting of Methods. Inheritance: Extending a Class, Overriding Methods, Final Variables and Methods, Final Classes, Finalize Methods, Abstract methods and Classes, Visibility Control.	10	25
3	UNIT-III Arrays: One Dimensional & two Dimensional, strings, Vectors, wrapper Classes, Defining Interface Extending Interface, Implementing Interface, Accessing Interface Variable, System Packages, Using System Package, Adding a Class to a Packages, Hiding Classes.	6	15
4	UNIT-IV Creating Threads, Extending the Threads Class, Stopping and Blocking a Thread, Life Cycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the Runnable Interface.	8	20



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

Branch: Software Development

Subject Name: OOPs with Java

Subject Code: 21120203

**With effective
from academic
year 2021-22**

5	UNIT-V Local and Remote Applets Vs Applications, Writing Applets, Applets Life Cycle, Creating an Executable Applet, Designing a Web Page, Applet Tag, Adding Applet to HTML File, Running the Applet, Passing Parameters to Applets, Aligning the Display, HTML Tags & Applets, Getting Input from the User.	10	20
	Total	42	

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 Suggested Specification table with Marks (Theory):
(For BVOC only)

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
10	20	20	0	0	0

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

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

Laboratory work: NA

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/>