VISHNU INSTITUTE OF TECHNOLOGY : : BHIMAVARAM
(AUTONOMOUS)
Approved by AICTE, Accredited by NAAC-A^{++}, NBA & Affiliated to JNTUK, Kakinada

Year/Semester	II B. Tech / I Sem	L	T	P	C
Regulation Year	2022-23	3	0	0	3
Subject	Object Oriented Programming through Java				
Branch	CSE, IT, AI&DS,AIML,CSBS				

Course Objectives:

- To identify Java language components and how they work together in applications
- To learn the fundamentals of object-oriented programming in Java, including defining classes, invoking methods, using class libraries.
- To learn how to extend Java classes with inheritance and dynamic binding and how to use exception handling in Java applications
- To understand how to design applications with threads in Java

Unit – I:

Introduction to OOPS: Introduction, Need of OOP, Principles of Object Oriented Languages, Procedural languages vs OOP, Applications of OOP, History of Java, JVM, Java Features, Programming Style, Command Line Arguments, Escape Sequence Comments

Data Types, Variables, Operators and Flow of Control: Variables, Primitive Data types, Constants, Identifiers-Naming Conventions, Keywords, Literals, Operators- Binary, Unary, Ternary, Expressions, Precedence rules and Associativity, Primitive Type Conversion and casting, Flow of Control- Branching, Conditional Loops.

Unit – II:

Classes and Objects: Class declaration and Modifiers, Class Members, Declaration of Class Object, Object Creation, Access control for Class Members, Defining methods, Overloaded methods, Recursive methods, Constructor, Constructor overloading, static keyword, this keyword.

Inheritance: Types of Inheritance, Deriving classes using Extends keyword, Method Overloading, Super keyword, Final keyword, Polymorphism- Abstract classes and methods-Overloading-Overriding-final methods and classes

Unit – III

Interface: Declaration of Interface, Implementation of Interface, Multiple Interfaces, Nested Interfaces, Static methods in interface, functional interfaces.

Packages and Java Library: Defining package, Importing packages and classes into programs, Path and class path, Access control, Java.lang package and its classes, wrapper classes, auto –boxing and auto-unboxing, Java util classes and interfaces.

Unit – IV:

Exception Handling: Introduction, Exception handling techniques- try…catch, throw, throws, finally block, User defined Exception, checked exception, unchecked exception, custom exception, nested try and catch blocks

Input/Output and String Handling: Files and streams- Byte stream, I/O stream, Character StreamFile Reader and Writer, charArrayReader and Writer, Class String, Methods for Extracting characters from strings, String Methods, String Buffer, Class String Buffer.

Unit V:

Mutli- Threading: Introduction, Need for Multiple threads, Mulithreaded Programming, Thread Class, Main thread, Creation of new thread, thread states, thread priority.

Java Database Connectivity: Introduction, JDBC Architecture, Environment Setup, JDBC Database Connections, Resultset Interface, Creating JDBC Applications

TEXT BOOKS:

1) JAVA one step ahead, Anitha Seth, B.L.Juneja, Oxford.
2) The complete Reference Java, 8th edition, Herbert Schildt, TMH
3) Cay S. Horstmann, Gary cornell, ―Core Java Volume –I Fundamentals, 9th Edition, Prentice Hall, 2013.

REFERENCE BOOKS:

1) Introduction to java programming, 7th edition by Y Daniel Liang, Pearson
2) Murach's Java Programming, Joel Murach

E-Resources:

1) https://nptel.ac.in/courses/106/105/106105191/
2) https://www.w3schools.com/java/java_data_types.asp

Course Outcomes:

1. Able to realize the concept of Object Oriented Programming & Java Programming Constructs
2. Able to describe the basic concepts of Java such as, classes, objects, packages, Enumeration and various keywords
3. Develop applications using various types of Inheritance and Interfaces.
4. Apply the concept of exception handling and Input/ Output operations.
5. Develop applications or programs using files and streams in java and multithreading.