

## **6<sup>th</sup> SEMESTER**

### **DISCIPLINE SPECIFIC ELECTIVE (DSE)**

#### **IT616D: INFORMATION TECHNOLOGY (ELECTIVE): CORE JAVA PROGRAMMING**

**CREDITS: THEORY: 4, PRACTICAL: 2**

##### **Unit I: Java Evolution**

Java Program Development , Java Source File Structure , Comparison with other languages (C & C++), Features of Java (Compiled and Interpreted, Platform independent and Portable, Object Oriented, Robust and Secure, Distributed, Simple and Familiar, Multithreaded and Interactive, High performance, Dynamic and Extensible)

##### **Unit II: Introduction to Java Programming**

Java Virtual machine, ByteCode.

Java Programming: Identifiers, Keywords, Literals, Comments, Primitive Datatypes, Variables: Assignment, Initialization and Conversions, Operators: Arithmetic, Assignment, Modulus, Relational, Boolean, Bitwise., Precedence Summary ,Unicode Character Set  
Decision making and Looping, simple if, if-else, nested if-else, switch statement, while, do-while and for loop. Arrays: Single and Multidimensional.

##### **Unit III: Objects and Classes**

Class Fundamentals: Objects, methods, class members, Constructors, Argument Passing Mechanism, Method Overloading.

Inheritance in Java: Defining a subclass, subclass constructor, Overriding Super Class Methods, Use of "super", Polymorphism in inheritance, multilevel inheritance.

##### **Unit IV: Interfaces and Exception Handling**

Packages & Interfaces: Defining and importing packages, Understanding Class path, Implementing interfaces.

Managing errors and exceptions: introduction, types of errors (compile time and runtime error), throwing exceptions, Use of try, catch, finally, throw , using exceptions for debugging.

Multi-Threaded Concepts, Thread Life-Cycle , Thread Priorities , Synchronizing Threads ,

##### **Suggested Readings:**

1. Herbert Schildt, "The Complete Reference Java-2 " ,Sixth Edition 2004,Tata McgrawHill.
2. Dietel & Dietel, "Java: How to Program Java 2, Sixth Edition, 2006, Pearson Education.
3. Horstmann & Cornell, "Java2 Vol-1 & Vol-2",Seven Indian Reprint 2006, Pearson Education.
4. E. Balagurusamy " Programming with java A Primer" 3rd edition

