

Programming in Java

Evaluation:

	Theory	Practical	Total
Sessional	30	20	50
Final	50	-	50
Total	80	20	100

Course Objectives:

The purpose of the course is to provide the concept of objective oriented programming using Java. It provides sound understanding of network programming and database connectivity. Moreover, it provides front end platform for development of applications.

Course Contents:

- 1. Elements Of Java Language (3 hrs)**
 - 1.1 Java as a Programming tools, Benefits of Java, Historical Background of Java
 - 1.2 A simple Java Program, Data type, Variable, Assignment and Initialization, Operator, String, Control Flow
 - 1.3 Class Method (User Defined Function), Array
- 2. Object Oriented Programming In Java (9 hrs)**
 - 2.1 Introduction to object oriented programming in Java
 - 2.2 Reusability using Existing classes
 - 2.3 Building User defined class, Package
 - 2.4 Inheritance
 - 2.5 Casting Abstract classes
 - 2.6 Access Protection Mechanism
 - 2.7 Reflection
 - 2.8 Designing Inheritance
 - 2.9 Interface, Inner Classes
- 3. Exception, Stream and I/O (3 hrs)**
 - 3.1 Handling Error and Exception, catching Exception, tips on handling Exception, Debugging techniques
 - 3.2 Stream, Zip files Stream, Object Stream
 - 3.3 Handling Files
- 4. Applets and Application (4 hrs)**
 - 4.1 Fundamental concept of Applet, Simple Applet
 - 4.2 Testing Applets, Converting Application to Applets
 - 4.3 Applets HTML tags and Attribute. Pop-UP Windows in Applet
 - 4.4 Multimedia Applets context



- 5. Events, Handling Events and AWT/Swing** (6 hrs)
- 5.1 Basic of Event handling, AWT Event hierarchy
 - 5.2 Semantics and low level Events in AWT, Event Handling
 - 5.3 Individual Events, Separating GUI and Application code
 - 5.4 Multicasting, Advance Event Handling
 - 5.5 An Introduction of layout management, Text input choice, scroll Bar
 - 5.6 Complex layout management, Menus, Dialog Box
- 6. Graphics and Images / Animation / Multimedia** (5 hrs)
- 6.1 Introduction to Graphics Programming, creating Closable frames
 - 6.2 Terminating graphics program, Frame layout displaying information in a frame
 - 6.3 Graphics object, Text and fonts, color
 - 6.4 Drawing shapes from lines drawing rectangle and Ovals
 - 6.5 Filling shapes paint mode images
- 7. Network Programming** (8 hrs)
- 7.1 Networking Basics
 - 7.2 Introduction to Socket
 - 7.3 Socket Programming
 - 7.4 Understanding Port
 - 7.5 Networking Classes in Java
 - 7.6 Creating Own Server and Client in Java
 - 7.7 Creating Multithread Java Server
 - 7.8 URL and URL connection Class
- 8. Java Database Connectivity (JDBC)** (7 hrs)
- 8.1 Understanding JDBC
 - 8.2 Database Driver
 - 8.3 JDBC-ODBC bridge
 - 8.4 Java Native Driver
 - 8.5 Intermediate Database Access Server
 - 8.6 JDBC API
 - 8.7 Making a JDBC Application
 - 8.8 Using Prepared Statement

References:

1. Dietel H.M and Dietel P.J., Java: How to Program, Third Edition, Pearson Education Asia
2. Naughton Java 2: The Complete Reference, Tata McGraw Hill
3. Balagurusamy E., Programming in Java: 2nd Edition, Tata McGraw Hill

