

**Programme:** BS(CS)-VII  
**Course Name:** Modern Programming Languages  
**Course Code:** CS-602  
**Course Hours:** 03  
**Total Weeks:** 16  
**Total Hours:** 48

**Course Objectives:**

This course is continuation of the Modern Programming Language I Course, that student's have already studied. This course will introduce students to work for the distributed/client/server environment using advanced Java GUI Technology, and databases. This will prepare them to enter the market with the expertise, which is considered necessary in their field.

**Week-1**

- Interfaces
  - Defining an Interface
  - Implementing an interface
  - Applying Interfaces
  - Variables in interfaces
  - Extending Interfaces
  - Interfaces & Multiple Inheritances

**Week-2**

- Java Applet & its Life Cycle
  - Init() start() paint() stop() destroy()
- Adding Controls to Applets
  - Button
  - Text Field
  - Label

**Week-3**

- Swings Introduction
- Swings Component Hierarchical structure
- Delegation Event Handling Model

**Week-4**

- Working with JApplet
- Creating JFrame

**Week-5**

- Working with JLabel
- JButton with event handling
- JTextField & JPasswordField

**Week-6**

- JCheck Box & JRadio Button with Event handling
- JCombo

#### **Week-7**

- Mouse Events
- Window Events

#### **Week-8**

- Understanding Multithreading
- Thread Basics

#### **Week-9**

- Thread Life Cycle
- Two ways of Thread Creation

#### **Week-10**

- Java Data Base Connectivity
- JDBC-ODBC Bridge working
- Creating DSN
- Connection, Statement, Result Set Object

#### **Week-11**

- Connection to Databases
- Performing database queries and DML through Java Program against DBMS
- Navigating through Multiple Rows retrieved from Database

#### **Week 12**

- Network Programming
- IP Packets and Logical Ports
- Connection Oriented vs Connectionless Communication(TCP/IP & UDP)
- Sockets

#### **Week-13**

- Inet Address Class
- Creating a client Program
- Creating a Server Program
- Communication b/w Client & Server

#### **Week-14**

- Remote Method Invocation
- RMI Architecture
  - Client Application
  - Client Stub
  - Remote Reference Layer
  - Transport Layer

#### **Week-15**

- Creating a complete RMI Application

1. Defining an Interface for Remote Object
2. Implementing the Interface by Remote Object
3. Binding Object to Registry Service

**Week-16**

4. Creating Stub & Skeleton
5. Create & Compile Client Program
6. Running the RMI Application

**Total Marks: 100**

**Recommended Books:**

*Web Application with Java* By **Ivon Byrose**

Java2 the Complete Reference By **Herbert Schildt**

Java2 Swing By **Deitel & Deitel**

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