# IT 222: Java Programming – II

***Credits: 3***

***Lecture Hours: 48***

## Course Objectives:

This course aims to develop students with knowledge with advanced features of java. Basic knowledge of programming in Java is expected from students. This course should be associated with laboratory experiments to augment the concepts taught in the class.

## Course Description

The Applet Class, Even handling, Introducing the AWT, Using AWT controls, Layout Managers, and Menus, Introducing Swing, Enterprise Application Architectures, JDBC, XML and Java, Servlet Programming, JSP Programming

## Course Details

**Unit 1: The Applet Class LH 3**

* Two types of applets
* Applet basics
* An applet skeleton
* The HTML applet tag
* Passing parameters to applets

## Unit 2: Even handling LH 6

* Two event handling mechanisms
* The delegation event model: events, event sources, event listeners
* The KeyEvent class: MouseEvent Class, TextEvent class, WindowEvent class
* Sources of Events
* Event Listener Interfaces
  + ActionListener, KeyListener, MouseListener, WindowListener,

ContainerListenenr

* Using Delegation event model
  + Handling mouse events, handling keyboard events
* Adapter classes, inner classes

## Unit 3: Introducing the AWT: LH 3

* AWT classes
* Window fundamentals: component, container, panel, window, frame, console
* Working with frame windows: setting windows dimensions, hiding and showing and closing windows
* Creating a frame window in an applet

## Unit 4: Using AWT controls, Layout Managers, and Menus LH 6

* Control Fundaments: adding and removing controls, responding to controls,
* Labels, buttons, checkboxes, choice, lists, scroll bars, textfield, textarea,
* Understanding Layout managers: FlowLayout, BorderLayout, GridLayout, CardLayout,

GridBadLayout

* Menus Bars and Menus, Dialog boxes, FileDialog boxes

## Unit 5: Introducing Swing LH 5

* The origins of swing, swing is built on the AWT
* Two Key Swing Features
* The MVC connection
* Components and containers

## Unit 6: Exploring Swing: LH 2

* JLabel and ImageIcon, JTextField, JButtons, JToggleButton, checkboxes, radio buttons, JTabbedPane, JList, JComboBox, JTable,

After completion of above two units program with following should be developed:

* User Interface with form validation feature,
* User interface with different look and feel

## Unit 7: Enterprise Application Architectures LH 2

* + 2-Tier Architecture, 3- Tier
  + Enterprise Archiecture
    - J2EE Application Servers

## Unit 8: JDBC LH 7

* + Introduction
  + Database Basics
    - Structured Query Langauge
      * Creating a Table – Inserting, Updating, Deleting records
      * JDBC-ODBC bridge
      * Reading Data
      * PreparedStatement, connection pooling

After completion of above two units programs like following should be developed:

* Program with User Interface and backend to store data, retrieve required data, manipulate/delete mentioned data
* Simple programs like record keeping system (employee records, student records etc) with manipulation and search facilities should be developed

## Unit 9: XML and Java LH 2

* + What is XML? What is an XML Document? Why XML?
  + Document Type Definition
  + XML Schema
  + XML parsing – SAX and DOM

## Unit 10: Servlet Programming LH 6

* + HTTP
    - GET, POST Request
    - Server Side of the Web Application
      * Web Container, Structure of a web application
      * Servlet Technology- Servlet
      * Deployment Descriptor
      * Steps for writing a servlet, servlet initialization, reading HTML form data,
      * Session Management - Creating session, Storing data in session, reading the data from session
      * Request dispatching – The forward() method, the include() method

## Unit 11: JSP programming LH 6

* + JSP Basics, JSP Directives Declarations
  + Implicit Objects
  + Java Beans in JSP – jsp:useBEan, jsp:setProperty, jsp:getProperty

## After completion of above two units

* **Web based applications should be developed**
* **Programs like online data entry form, with search and manipulation capability References:**

**Kosuri Phani, Java & J2EE Made Easy,** Lulu Publications; 1 edition (September 25, 2012)