

COURSE NAME : COMPUTER ENGINEERING GROUP
COURSE CODE : CO/CM/IF/CD
SEMESTER : SIXTH FOR CO/CM/IF AND SEVENTH FOR CD
SUBJECT TITLE : ADVANCED JAVA PROGRAMMING
SUBJECT CODE : 9165

Teaching and Examination Scheme:

Teaching Scheme			Examination Scheme						
TH	TU	PR	PAPER HOURS	TH	TEST	PR	OR	TW	TOTAL
03	--	04	03	80	20	50#	--	25@	175

Rationale:

In the current era of networking, online transaction processing and managing the dataflow over network becomes an important issue. This subject is essential for providing knowledge and hands on experience over the issues of managing data on web, developing powerful GUI based friendly user interface, server side programming and developing applications for communication over network using object oriented fundamentals.

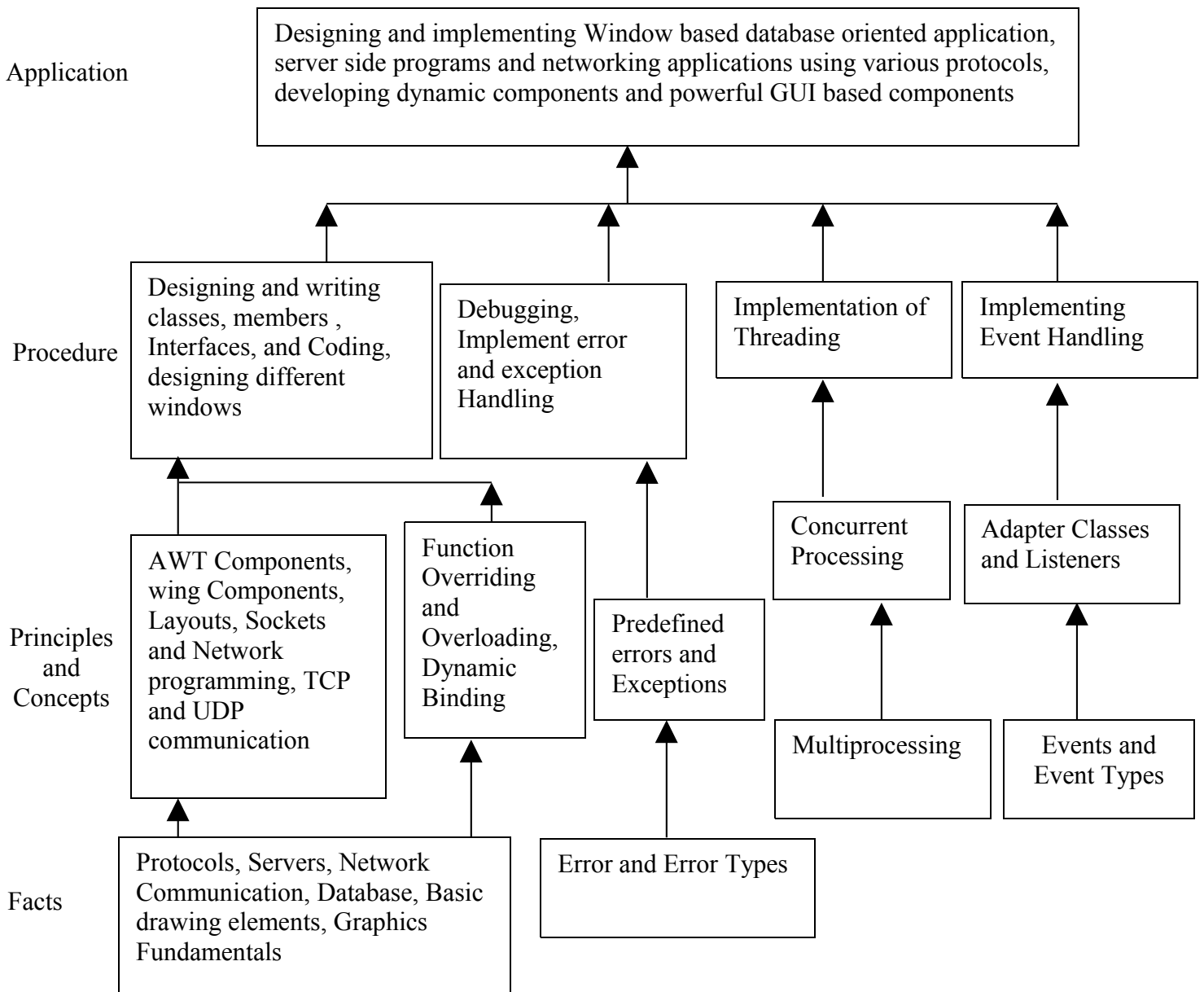
Advanced Java enhances the Java programming. After learning this subject, student will be able to develop network based software projects required in curriculum as well as industry

Objectives:

After studying this subject, the student will be able to:

- Create network based applications.
- Create business applications.
- Implement Server side programming.
- Develop dynamic software components.
- Develop database application.
- Design and develop powerful GUI based components.
- Create Animation using Applet, Thread and AWT controls.

Learning Structure:



Contents: Theory

Chapter	Name of the Topic	Hours	Marks
01	Introduction the Advanced Web Technology: (AWT) 1.1 Working with Windows and AWT AWT classes Windows Fundamentals Working with frame windows Creating a frame window in applet Creating windowed program Display information within with in a window 1.2 Working with graphics Working with color Setting the paint mode Working with Fonts Managing text output using Font Metrics Exploring text & graphics 1.3 Using AWT Controls, Layout Managers and Menus Control Fundamentals Labels Using Buttons Applying Check Boxes Checkbox Group Choice Controls Using Lists Managing scroll Bars Using a Text Field Using a Text Area Understanding Layout Managers Menu Bars and Menu Dialog Boxes File Dialog Handling events by Extending AWT Components Exploring the Controls, Menus, and Layout Managers	16	20
02	Networking: 2.1 Basics Socket overview, client/server, reserved sockets, proxy servers, internet addressing. 2.2 Java & the Net The networking classes & interfaces 2.3 Inet address Factory methods, instance method 2.4 TCP/IP Client Sockets What is URL Format 2.5 URL connection 2.6 TCI/IP Server Sockets 2.7 Data grams Data gram packets, Data gram server & client	08	16
03	Java Data Base Client/ Server 3.1 Java as a Database front end Database client/server methodology	08	14

	Two-Tier Database Design Three-Tier Database Design 3.2 The JDBC API The API Components, Limitations Using JDBC(Applications vs. Applets), Security Considerations, A JDBC Database Example JDBC Drivers ,JDBC-ODBC Bridge Current JDBC Drivers		
04	The Tour of Swing 4.1 J applet, Icons and Labels ,Text Fields, Buttons Combo Boxes, Tabbed Panes, Scroll Panes. 4.2 Trees, Tables, Exploring the Swings.	08	14
05	Servlets 5.1 Background, The Life Cycle Of a Servlet,The Java Servlet Development Kit, The Simple Servlet, The Servlet API 5.2 The Javax Servlet Package, Reading Servlet Parameters Reading Initialization Parameters The Javax. Servlet. http package, Handling HTTP Requests and responses 5.3 Using Cookies, Session Tracking, Security Issues Exploring Servlet	08	16
Total		48	80

Practical:

Skills to be developed:

Intellectual skills:-

- Use of programming language constructs in program implementation.
- To be able to apply different logics to solve given problem.
- To be able to write program using different implementations for the same problem
- Study different types of errors as syntax semantic, fatal, linker & logical
- Debugging of programs
- Understanding different steps to develop program such as
 - Problem definition
 - Analysis
 - Design of logic
 - Coding
 - Testing
 - Maintenance (Modifications, error corrections, making changes etc.)

Motor skills:-

- Proper handling of Computer System

List of Practical:

Sr. No	Contents
01	Write a program to design a form using components textbox, text field, checkbox, buttons, list and handle various events related to each component.
02	Write a program to design a calculator using Java components and handle various events related to each component and apply proper layout to it.
03	Write a program to demonstrate use of Grid Layout.
04	Write a program to demonstrate use of Flow Layout.
05	Write a program to demonstrate use of Card Layout.
06	Write a program to demonstrate use of Border Layout.
07	Write a program to display any string using available Font and with every mouse click change the size and / style of the string. Make use of Font and Font metrics class and their methods.
08	Write a program to create a menu bar with various menu items and sub menu items. Also create a checkable menu item. On clicking a menu Item display a suitable Dialog box.
09	Write a program to increase the font size of a font displayed when the value of thumb in scrollbar increases at the same time it decreases the size of the font when the value of font decreases.
10	Write a program to retrieve hostname using methods in Inet Address class.
11	Write a program that demonstrates TCP/IP based communication between client and server.
12	Write a program that demonstrates UDP based communication between client and server.
13	Write a program to demonstrate use of URL and URL Connection class for communication.
14	Write an Application program /Applet to make connectivity with database using JDBC API
15	Write an Application program/Applet to send queries through JDBC bridge & handle result.
16	Write a program to design a form using basic swing components.
17	Write a program to demonstrate the use of scroll panes in Swing.
18	Write Java Program to map Directory tree.
19	Write a Java program to demonstrate the use of Tables.
20	Write a servlet for demonstrating the generic servlet class.
21	Write a servlet for demonstrating the generic servlet class.
22	Write a servlet to demonstrate the Http Servlet class using do Get ().
23	Write a servlet to demonstrate the Http Servlet class using do Post ().
24	Write a servlet to demonstrate the cookie.

Reference Books:**1. Books:**

Sr. No.	Author	Title	Publisher
01	Patrick Naughton- Herbert Schildt	The Complete Reference Java 2 (Third Edition)	Tata McGraw hill
02	Michael Morrison	The Complete IDIOT's Guide To JAVA 2	Prentice Hall of India
03	Jawroski	Java2 Unleashed	Techmedia
04	Java2 Programming	Keyur Shah	Tata McGraw hill

2. Following web sites may be referred:

<http://www.sun.java.com>,

<http://www.osborne.com>

3) The required JDK for practical can be downloaded from the site:

<http://www.sun.java.com>