

Subject Name : Advanced Java Programming

Subject Code: CE 605-1 / IT 605-1

Teaching Scheme (Credits and Hours)

Teaching scheme				Total Credit	Evaluation Scheme					Total
L	T	P	Total		Theory		Mid Sem Exam	CIA	Pract.	
Hrs	Hrs	Hrs	Hrs		Hrs	Marks	Marks	Marks	Marks	Marks
03	00	04	07	5	3	70	30	20	30	150

Learning Objectives:

This module aims to introduce the students to some concepts of advanced programming and practice on reusing components.

- The course covers Graphical User Interface (GUI) networking, and database manipulation.
- Student will be able to use advanced technology in Java such as Internationalization, and Remote method Invocation
- Student will learn how to work with JavaBeans.
- Student will be able to develop web application using Java Servlet and Java Server Pages technology.

Outline of the Course:

Sr. No	Title of the Unit	Minimum Hours
1	Swing	6
2	Java Database Connectivity	6
3	Networking	6
4	RMI Programming, Serialization and Internationalization	8
5	J2EE Architecture	4
6	Servlet Programming	7
7	JSP & JSTL	8

Total hours (Theory): 45

Total hours (Lab): 60

Total hours: 105

Detailed Syllabus

Sr. No	Topic	Lecture Hours	Weight age(%)
1	Introduction To Swing, MVC Architecture, Applets, Applications and Pluggable Look and Feel, Basic swing components : Text Fields, Buttons, Toggle Buttons, Checkboxes, and Radio Buttons	6	15
2	Java database Programming, java.sql Package, JDBC driver	6	20
3	Network Programming With java.net Package, Client and Server Programs, Content And Protocol Handlers	6	15
4	RMI architecture, RMI registry, Writing distributed application with RMI, Naming services, Naming And Directory Services, Overview of JNDI, Object serialization and Internationalization	8	15
5	J2EE architecture, Enterprise application concepts, n-tier application concepts, J2EE platform, HTTP protocol, web application, Web containers and Application servers	4	5
6	Server side programming with Java Servlet, HTTP and Servlet, Servlet API, life cycle, configuration and context, Request and Response objects, Session handling and event handling, Introduction to filters with writing simple filter application	7	15
7	JSP architecture, JSP page life cycle, JSP elements, Expression Language, Tag Extensions, Tag Extension API, Tag handlers, JSP Fragments, Tag Files, JSTL, Core Tag library, overview of XML Tag library, SQL Tag library and Functions Tag library	8	15
	Total	45	100

Instructional Method and Pedagogy:

- At the start of course, the course delivery pattern, prerequisite of the subject will be discussed.
- Lectures will be conducted with the aid of multi-media projector, black board, OHP etc.
- Attendance is compulsory in lecture and laboratory which carries 10 marks in overall evaluation.
- One internal exam will be conducted as a part of internal theory evaluation.
- Assignments based on the course content will be given to the students for each unit and will be evaluated at regular interval evaluation.
- Surprise tests/Quizzes/Seminar/tutorial will be conducted having a share of five marks in the overall internal evaluation.
- The course includes a laboratory, where students have an opportunity to build an appreciation for the concepts being taught in lectures.
- Experiments shall be performed in the laboratory related to course contents.

Learning Outcome:

This module aims to introduce the students to some concepts of advanced programming and practice on reusing components. A selected programming language is used such as Java. At the end of this course, the students should be able to write sophisticated Java applications. Upon completion of the course, the student will be able to use the Java language for writing well-organized, complex computer programs with both command-line and graphical user interfaces.

Reference Books:

1. Java 6 Programming, Black Book, Dreamtech
2. Java Server Programming, Java EE6 (J2EE 1.6), Black Book, Dreamtech
3. Advanced Java Technology, By M.T. Savaliya, Dreamtech

List of experiments:

Unit No.	Sr. No.	Name Of Practical
1	1.1	Write a Program in Java to implement Calculator using Swing technology
	1.2	Write a Program that displays two textboxes for entering a students' Roll-no and Name with appropriate labels and buttons.
2	2.1	Write a Java program that makes a connection with database using JDBC and prints metadata of this connection
	2.2	Include the database connectivity in the program no.1.2 to insert, update, delete and display of student information.
3	3.1	Write a java program for one way TCP communication for server and client, where server will response to client with current data and time.
	3.2	Write a java program for two way TCP communication for server and client. It should look like a simple chat application
	3.3	Write a java program for UDP Communication where client will send name of country and server will return the capital of that country.
4	4.1	Create a simple calculator application that demonstrates the use of RMI. You are not required to create GUI.

5	5.1	Create Servlet That Prints Hello World.
	5.2	Create Servlet That Prints Today's Date
	5.3	Create Servlet for login page, if the username and password is correct then prints message "Hello username" else a message "login failed".
	5.4	Create Servlet that uses cookies to store the number of times a user has visited the servlet.
	5.5	Create a Servlet for demo of KBC game. There will be continuous two or three pages with different MCQs. Each correct answer carries Rs. 10000. At the end as per user's selection of answers total prize he won should be declared. User should not be allowed to backtrack.
6	6.1	Create a Servlet that implements ServletContextAttributeListener interface such that a message dialog is displayed whenever an attribute is added or removed or replaced.
	6.2	Create a Servlet filter that calculates server's response time and add it to response when giving it back to client.
7	7.1	Create a jsp that prints hello world.
	7.2	Create jsp that prints current date and time.
	7.3	Create a jsp that add and subtract two numbers.
	7.4	Create a jsp for login module.
8	8.1	Create a web page that prints 1 to 10 using JSTL
	8.2	Create a custom JSP tag that prints current date and time. Use this tag into JSP page.