

**CP352: ADVANCED JAVA TECHNOLOGY**  
**CREDITS = 5 (L=3, T=0, P=2)**

**Course Objective:**

To impart advanced knowledge of Java Technology leading to design of real time applications.

**Teaching and Assessment Scheme:**

Teaching Scheme			Credits	Assessment Scheme				
L	T	P	C	Theory		Practical		Total Marks
				ESE	CE	ESE	CE	150
3	0	2	5	70	30	30	20	

**Course Contents:**

Unit No.	Topics	Teaching Hours
1	<b><u>Java Networking:</u></b>	
	Network Basics and Socket overview, TCP/IP client sockets, URL, TCP/IP server sockets, Datagram, java.net package, Socket, ServerSocket, InetAddress, URL, URLConnection, TCP vs. UDP, DatagramPacket and DatagramSocket.	06
2	<b><u>JDBC Programming:</u></b>	
	JDBC Connectivity Model, JDBC Types, Database Programming: Connecting to the Database, Creating a SQL Query, Getting the Results, Updating Database Data, Error Checking and SQLException Class, SQLWarning Class, Statement Interface, PreparedStatement, CallableStatement, ResultSet Interface, Updatable Result Sets, Executing SQL Queries, ResultSetMetaData, Executing SQL Updates, Transaction Management.	06
3	<b><u>Servlet API:</u></b>	
	Servlet Model: Overview of Servlet, Servlet Life Cycle, HTTP Methods Structure and Deployment descriptor ServletContext and ServletConfig interface, Attributes in Servlet, Request Dispatcher interface The Filter API: Filter, FilterChain, Filter Config Cookies and Session Management: Understanding state and session, Understanding Session Timeout and Session Tracking, URL Rewriting.	07

Unit No.	Topics	Teaching Hours
4	<b><u>Java Server Pages:</u></b>	
	JSP Overview: Servlet Vs JSP, Life Cycle of JSP Page, JSP Processing, JSP Application Design with MVC, Setting Up the JSP Environment, JSP Directives, JSP Action, JSP Implicit Objects JSP Form Processing, JSP Session and Cookies Handling, JSP Session Tracking JSP Database Access, JSP Standard Tag Libraries, JSP Custom Tag, JSP Expression Language, JSP Exception Handling, JSP XML Processing.	08
5	<b><u>Java Server Faces and Struts:</u></b>	
	Introduction to JSF 2.0, JSF request processing Life cycle, JSF Expression Language, JSF Standard Component, JSF Facelets Tag, JSF Converter Tag, JSF Validation Tag, JSF Event Handling and Database Access, JSF Libraries: PrimeFaces, Struts Architecture, Action, Interceptors, View, OGNL, Value Stack.	08
6	<b><u>Hibernate and Spring:</u></b>	
	Overview of Hibernate, Hibernate Architecture, Hibernate Mapping Types, Hibernate O/R Mapping, Hibernate Annotation, Hibernate Query Language, Java Web Frameworks, Overview of Spring, Spring Architecture, bean life cycle, XML Configuration on Spring, Aspect – oriented Spring, Managing Database, Managing Transaction.	10
<b>TOTAL</b>		<b>45</b>

#### **List of References:**

1. Kathy walrath, Black Book “ Java server programming” J2EE, Dream Tech Publishers
2. James Keogh, “Complete Reference J2EE” McGrawHill publication.
3. Christian Bauer, Gavin King, “Java Persistence with Hibernate”, PaperBack Publication
4. Giulio Zambon , “Beginning JSP, JSF and Tomcat” , Apress

#### **Course Outcomes (COs):**

After learning the course students will be able to

1. Develop Java application using Network programming concepts.
2. Apply concept of JDBC in Java applications.
3. Develop real time application using advanced concepts like Hibernate, Spring, Struts.
4. Demonstrate use of J2EE components in Java applications.
5. Develop J2EE application using Servlet, JSP, JSF
6. Enhance logical reasoning and programming skill.