

PVP SIDDHARTHA INSTITUTE OF TECHNOLOGY, KANURU, VIJAYAWADA (AUTONOMOUS)
DEPARTMENT OF INFORMATION TECHNOLOGY

ADVANCED JAVA

Course Code	23IT3501	Year	III	Semester	I
Course Category	PC	Branch	IT	Course Type	Theory
Credits	3	L-T-P	3-0-0	Prerequisites	JAVA
Continuous Internal Evaluation :	30	Semester End Evaluation:	70	Total Marks:	100

Course Objectives:

1. This course develops programming ability of students to create dynamic web applications using server side technology with Java Database Connectivity.
2. Students can learn different Java frameworks like Spring will increase ability of students in Web application development.

Course Outcomes		Blooms Level
Upon successful completion of the course, the student will be able to:		
CO1	Understand the basic concepts of web design for the efficient development of web applications.	L2
CO2	Apply JDBC concepts to perform database operations using different types of JDBC statements, handle result sets, and manage transactions.	L3
CO3	Design and develop dynamic web applications using Servlets and JSP.	L3
CO4	Apply the basic concepts of the Spring framework to develop web applications.	L3

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:Substantial,2:Moderate,1:Slight)														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3												3	3
CO2			3		3								3	3
CO3			3		3								3	3
CO4			3		3								3	3
Avg.	3		3		3								3	3

Syllabus		
Unit No.	CONTENTS	Mapped CO
I	JDBC Programming: JDBC Architecture, Exploring JDBC Drivers, Exploring major JDBC Classes and Interfaces, Understanding basic JDBC steps, Creating simple JDBC Application, Working with PreparedStatement, working with CallableStatement, Working with ResultSet, Working with Batch updates: Using batch updates with the Statement object, Working with transactions: ACID properties, Types of transactions, Transaction Management.	CO1,CO2
II	J2EE and Web Development: Exploring enterprise architecture types, Describing EE6 containers, Types of Servers in J2EE Applications, Exploring the HTTP protocol: Describing HTTP requests, Introducing web applications: Describing components of a web application, Describing structure, Describing web containers, Exploring web architecture models: Model-1 architecture, Model-2 architecture and MVC architecture.	CO1
III	Servlet API and Overview: Exploring the features of JAVA servlet: Servlet a request-response model, servlet and environment state, Security features, HTML-aware servlets, HTML-specific servlets, Performance features, 3-tier applications, Exploring the Servlet API, Explaining the Servlet Life Cycle(SLC), Creating a sample servlet: Exploring directory structure, configuring the servlet, packaging, deploying and running the Web application, Working with ServletContext and ServletConfig Objects, Working with the HttpServletRequest and HttpServletResponse interfaces: Using the HttpServletRequest interfaces(the role of form data, form data and parameters, headers, File uploads), Using HttpServletResponse interface(Response header, response redirection), Exploring session tracking mechanisms: using Cookies, Hidden Form Fields and URL Rewriting, Creating a session using HttpSession interface.	CO1,CO3
IV	Java Server Pages(JSP): Introduction to JSP technology, advantages of JSP over JAVA servlet, JSP Architecture, JSP: Life Cycle, Working with JSP basic tags and implicit objects: Exploring scripting tags (scriptlet, declarative, expression), Exploring implicit objects(request, response, out, page, pageContext, application, session, config, exception), Exploring directive tags (page, include, taglib), Working with JSP action tags: Exploring action tags(<jsp:include>, <jsp:forward>, <jsp:param>, <jsp:plugin>,<jsp:useBean>, <jsp:setProperty>, <jsp:getProperty>), JSP Standard Tag Libraries(JSTL): Working with core tag library. CRUD application with JSP.	CO1, CO3
V	Java Web Frameworks: Working with Spring: Introducing the features of the Spring framework, Exploring the Spring Framework Architecture, Sprint Container, Exploring Dependency Injection, Constructor Injection, Setter Injection, Inversion of Control, and Spring annotation based Configurations, Spring MVC life cycle.	CO1,CO4
Learning Resources		

Text Books
1. Black Book “Java Server Programming Java EE6”, Dream Tech Publishers, 2012.
Reference Books
<ol style="list-style-type: none">1. Complete Reference J2EE, James Keogh, McGraw Hill publication2. Professional Java Server Programming, Subrahmanyam Allamaraju, Cedric Buest, Wiley Publication3. Spring in Action, 3rd edition, Craig Walls, Manning Publication4. Core Java, Volume II: Advanced Features, Cay Horstmann, Gary Cornell Pearson Publication
E-Resources & other digital material
<ol style="list-style-type: none">1. https://www.geeksforgeeks.org/2. https://www.codingshuttle.com/spring-boot-handbook/spring-beans/