## Syllabus

B. Sc. (Computer Science)	Semester - IV	
B. Sc. (Computer Science) Course Name: Advanced Java	Course Code: USCS402	
TOPICS (Credits: 02, La	ectures/Week : 03)	
TOPICS (Credits - 02, 2)	CCCCI	

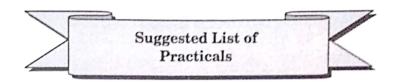
## **Objectives**

Explore advanced topic of Java programming for solving problems.

## Expected Learning Outcomes:

- 1) Understand the concepts related to Java Technology.
- Explore and understand use of Java Server Programming.

Unit	Details	Lectures
I	Swing: Need for swing components, Difference between AWT and swing, Components hierarchy, Panes, Swing components: Jlabel, JTextField and JPasswordField, JTextAres, JButton, JCheckBox, JRadioButton, JComboBox and	15
	JList.	
	JDBC: Introduction, JDBC Architecture, Types of Drivers, Statement, ResultSet, Read Only ResultSet, Updatable ResultSet, Forward Only ResultSet, Scrollable ResultSet, PreparedStatement, Connection Modes, SavePoint, Batch Updations, CallableStatement, BLOB & CLOB. (Refer Chapters 1 and 2)	
II	Servlets: Introduction, Web application Architecture, Http Protocol & Http Methods, Web Server & Web Container, Servlet Interface, GenericServlet, HttpServlet, Servlet Life Cycle, ServletConfig, ServletContext, Servlet Communication, Session Tracking Mechanisms  JSP: Introduction, JSP LifeCycle, JSP Implicit Objects & Scopes, JSP Directives, JSP Scripting Elements, JSP Actions: Standard actions and customized actions.  (Refer Chapters 3 and 4)	15
III	Java Beans: Introduction, JavaBeans Properties, Examples Struts 2: Basic MVC Architecture, Struts 2 framework features, Struts 2 MVC pattern, Request life cycle, Examples, Configuration Files, Actions, Interceptors, Results & Result Types, Value Stack/OGNL	
	JSON: Overview, Syntax, DataTypes, Objects, Schema, Comparison with XML, JSON with Java. (Refer Chapters 5, 6 and 7)	



- Develop the presentation layer of Library Management software application with suitable menus.
- 2. Design suitable database for Library Management System.
- Develop business logic layer for Library Management System.
- Develop Java application to store image in a database as well as retrieve image from database.
- 5. Write a Java application to demonstrate servlet life cycle.
- Design database for student administration. Develop servlet(s) to perform CRUD operations.
- Create Employees table in EMP database. Perform select, insert, update, and delete operations on Employee table using JSP.
- Write a Student class with three properties. The useBean action declares a JavaBean for use in a JSP. Write Java application to access JavaBeans Properties.
- Design application using Struts2. Application must accept user name and greet user when command button is pressed.
- 10. Write Java application to encoding and decoding JSON in Java.

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UNIT I

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✓	Syllabus Topic: Swing Components - JLabel, JTextField, JPasswordField,	
	JTextArea, JButton, JCheckBox, JRadioButton, JComboBox, JList	1-10
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	1.6.2 JTextComponent, JTextArea, JPasswordField and JTextField	
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	1.6.4 JComboBox and JList	1-23
1.7	Programming Exercise	1-28
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1	Syllabus Topic : JDBC Architecture	2-2
2.2	JDBC Architecture	
✓	Syllabus Topic: Types of Drivers	
2.3	Types of IDBC Driver	
2.4	IDBC Driver Manager	
2.5	IDBC Connection Interface	

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	3.7.1 Methods of Servlet Interface	
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3.8	GenericServlet Class	
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