

NIRMA UNIVERSITY
Institute of Technology
B. Tech. Computer Science and Engineering
Semester – VI
Department Elective-II

L	T	P	C
3	0	2	4

Course Code	2CSDE60
Course Title	Advanced Java

Course Outcomes:

At the end of the course, students will be able to –

1. describe and interpret the basics of Java technologies.
2. apply the concepts of Java technologies to design console based, GUI based and web based applications
3. develop applications using various Java frameworks
4. create, debug and run multi-tier and enterprise-level Java applications.

Syllabus:

**Teaching
Hours: 45**

Unit I

10

Introduction to Swing: Basics of Swing, Key Swing Features, Components and Containers, Event Handling, Various Swing components, Writing Swing Application, Database access

Unit II

03

Java database Programming: Basics of Java database, JDBC, Different Types of Drivers of JDBC

Unit III

08

Java Servlet Programming: Servlet: Basics of Servlet, Types of Servlet, Servlet Life Cycle, Form data processing, HTTP request, HTTP response, Servlet init parameters, ServletRequest, Servlet Collaboration, ServletConfig, ServletContext, Attribute, Session Tracking, Filter, Exception Handling, Database Handling

Unit IV

08

Java Server Pages (JSP): Basics of JSP, Life cycle of JSP, Scripting elements, Implicit Objects, Directive Elements, JSP actions: include and forward, HTTP Status Codes, Form data processing, Session Tracking, Filter, Page redirection, Auto refresh, Database Handling

Unit V

10

Java Web Framework– Spring: Overview of Spring, Spring Architecture, bean basics and life cycle, Dependency Injection, XML Configuration on Spring, Event handling in Spring, Aspect – oriented Spring, Managing Database, Managing Transaction



Unit VI **03**
Introduction to Distributed Applications, Spring Boot, Spring Cloud.

Unit VII **03**
Introduction to Hibernate framework: Basics of Hibernate framework,
Hibernate configuration, Life cycle and applications.

Self-Study:

The self-study contents will be declared at the commencement of semester. Around 10% of the questions will be asked from self-study contents.

Laboratory Work:

Laboratory work will be based on the above syllabus with minimum 7 experiments to be incorporated.

Suggested Readings[^]:

1. Bryan Basham, Kathy Sierra, Bert Bates, Head first Servlets and JSPs, O'Rilley Media.
2. Core and Advanced Java, BlackBook, Dreamtech Press
3. Ivan Bayross, Sharanam Shah, Cynthia Bayross and Vaishali Shah, The Team X (SPD), Java Server Programming for professionals, The X Team/Shroff Publishers.
4. Kumar Santosh, Spring and Hibernate, Mcgraw Hill
5. Savaliya, Advanced Java, Dreamtech Press India Pvt. Ltd

L=Lecture, T=Tutorial, P=Practical, C=Credit

[^]this is not an exhaustive list