

NIRMA UNIVERSITY
SCHOOL OF TECHNOLOGY, INSTITUTE OF TECHNOLOGY
Course Syllabus
Master of Computer Application (2-Years Programme) Semester-II
 Department Elective-I

L	T	P	C
3	0	2	4

Course Code	6CS161
Course Title	Advance Java Technology

Course Outcomes:

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

1. describe and interpret the basics of Java technologies
2. design and develop the web applications
3. access data from relational databases through a Java application
4. apply modern tools and frameworks for designing and developing web applications and web services.

Syllabus:

**Teaching
hours:45**

Unit I

Java database concepts: introduction to Java Database concept (JDBC), JDBC Drivers, features of JDBC, JDBC API

3

Unit II

Java Servlets: introduction to Java servlets, life cycle of Java Servlet, basics of the Servlet API, reading data from a client, reading HTTP request headers, sending data to client and writing the http response header, working with cookies and tracking sessions.

9

Unit III

Java Server Pages (JSP): introduction to jsp tags and directive, request string, user sessions, cookies, session objects, custom tag libraries: the taglib directive, the tag-library descriptor and java classes, the expression language (el), the JSTL core tag library, packaging tag libraries in web applications.

8

Unit IV

Enterprise Java Bean (EJB): introduction to java beans and enterprise java beans, role of EJB components in java EE applications: EJB life cycle, deployment descriptors, session java beans, entity java bean, message-driven bean and the jar file.

6

Unit V

The Java Persistence API (JPA): objective, additional resources, the java persistence api, object relational mapping software, entity class requirements, life cycle and operational characteristics of entity: components.

6



Unit VI	4
Service Oriented Computing: challenges and benefits, service oriented architecture, web services and J2EE, SOAP, WSDL, web service registries.	
Unit VII	6
Internationalization(I18N): introduction, setting the locale, isolating locale-specific data, formatting working with text, internationalization of network resources, service providers for internationalization, J2EE frameworks and design patterns, introduction to spring framework	
Unit VIII	3
Network programming in Java: networking basics, socket programming, TCP/IP and UDP sockets in java.	

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 above syllabus with minimum 8 experiments to be incorporated that will be considered for evaluation.

Suggested Readings[^]:

1. Jim Keogh, Complete Reference J2EE , Tata McGraw Hill
2. Sun Micro Systems, Developing Applications for the JavaTM EE Platform FJ-310 Student Guide, Sun Micro Systems
3. B V Kumar and S Sangeetha, J2EE Architecture –An Illustrative Gateway to Enterprise Solutions concepts to Application Design & Development, Tata McGraw Hill
4. C. A. Binildas, Malhar Barai and Vincenzo Caselli , Service Oriented Architecture with Java: Using SOA and Web Services to Build Powerful Java Applications , SPD
5. Kogent, Java Server Programming EE6 Black Book , Dreamtech
6. G. Radhamani and G. S.V. Radha Krishna Rao , Web Services Security and E-Business , Idea Group publishing.
7. Herbert Schildt, Java 2 Complete Reference, Tata McGraw Hill
8. Ivan Bayross, Sharanam Shah, Cynthia Bayross and Vaishali Shah, Java Server Programming for professionals, The Team X (SPD)

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

[^]this is not an exhaustive list

