Subject Code	Subject Name	Credits
26CS102	ADVANCED JAVA PROGRAMMING	4

Course Objectives:

1. To Understand and Master the Java Programming Language
2. To Implement Object Oriented Concepts Through Java
3. To know about the advanced concepts of Java Programming

Learning Objectives:

On successful completion of the course, students will be able to:

1. To learn the latest in the field of Java Programming and its applications

Unit 1 - Java Tools (12 hrs.):
JDK – JAVADOC – JAVAP – JVM – JCMD – JHAT – JDP –JAR – sql. Exception handling – Type of Exceptions – Tracking stack –Custom exception classes. Thread – Interrupting thread – Thread priority – Using Join – Synchronization – Dead lock - JVM architecture - Garbage collection.

Unit 2 - Java Framework (12 hrs.):
Collection Framework - interfaces, implementation and algorithms- collection interface - Set, List, Queue-Sorting – shuffling – Manipulation-Class – object – OOPs

Unit 3 - Servlets (12 hrs.):
What are Servlets – function of servlet and need – a look into servlet code - HTTP Methods; GET, POST, PUT, DELETE, TRACE, OPTIONS - GET/POST request; differences between the GET and POST - Servlet Lifecycle - Servlet Context and Servlet Config - Forwarding and Redirection of requests

Unit 4 - Sockets (12 hrs.):
Client/server Programs Sockets - Types of Socket- TCP Sockets - The ServerSocket Class -The Socket Class. TCP- UDP Sockets -Multicasting - Multicast Sockets -Remote Method Invocation.

Unit 5 - Java Mail API- (12 hrs.):
E-mail - JavaMail API - Installing JavaMail API - Sending Emails - Creating a SessionObject -Compose a Message - Sending the Mail - Compiling and Running the Program - Sending Emails Directly. Using Socket – Secured SMTP – SSL-TLS- MIME- Email with HTML – Accessing E-mail - Java Security Architecture – JDBC.

Reference Books:

1. Advanced Java Programming - Uttam K. Roy - Published in India by Oxford University Press – 2015.
2. Beginning Java 8 APIs, Extensions and Libraries: Swing, JavaFX, JavaScript, JDBC and Network Programming APIs - Kishori Sharan – Apress.

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