

Java and J2EE

Course code: 18IS6DCJVA

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Exam Hours: 03

Total Hours: 40

Credits: 03

CIE Marks: 50

SEE Marks: 50

Course objectives:

1. To provide an introduction to java and object oriented concepts of java programming.
2. Understand the use and creation of packages and interfaces.
3. Analyze and use exception handling, event handling in java.
4. Create web applications using Servlets and JSP.

Course Outcomes: At the end of the course, student will be able to:

CO1	Express classes, its members and the relationships among them needed for a specific problem.
CO2	Apply the basic concepts of object oriented programming in writing java programs.
CO3	Create and use packages and interfaces in Java programs.
CO4	Analyze and implement exception handling in Java.
CO5	Develop graphical user interface using swings.
CO6	Construct web applications using Servlets and JSP.

Mapping of Course outcomes to Program outcomes:

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
2	2	1	-	-	-	-	-	-	-	-	1	2	1	-
3	2	2	-	-	-	-	-	-	-	-	1	3	2	-
3	2	2	-	-	-	-	-	-	-	-	1	3	1	-
2	2	1	-	-	-	-	-	-	-	-	1	3	1	1
2	2	2	-	-	-	-	-	-	-	-	1	3	1	1
3	2	2	-	-	-	-	-	-	-	-	1	3	2	2

Unit.	Content of the Unit	Hours	COs
1.	Introduction to Java: The Creation of Java, Java's Magic: The Bytecode, The Java Buzzwords, Object-Oriented Programming, A First Simple Program, Type Conversion and Casting, Automatic Type Promotion in Expressions, Arrays. Introducing Classes: Class Fundamentals, Declaring Objects, Assigning Object Reference Variables, Introducing Methods, Constructors, The this Keyword, The finalize() Method.	08	CO1 & CO2
2.	A Closer Look at Methods and Classes: Overloading Methods, Using Objects as Parameters, Returning Objects, Introducing Access Control, Understanding static, Introducing final, Introducing Nested and Inner Classes, Using Command-Line Arguments, Varargs: Variable-Length Arguments. Inheritance: Inheritance Basics, Using super, Creating a Multilevel Hierarchy, When Constructors Are Called, Method Overriding, Dynamic Method Dispatch, Using Abstract Classes, Using final with Inheritance.	08	CO1 & CO2
3.	Packages and Interfaces: Packages, Access Protection, Importing Packages, Interfaces. Exception Handling: Exception-Handling Fundamentals, Exception Types, Using try and catch, throw, throws, finally, Java's Built-in Exceptions, Creating Your Own Exception Subclasses. Multithreaded Programming: The Java Thread Model, Creating a Thread, Creating Multiple Threads, Synchronization, Suspending, Resuming, and Stopping Threads.	08	CO2, CO3 & CO4
4.	String Handling: The String Constructors, String Length, Special String Operations, Character Extraction, String Comparison, Modifying a String. Event Handling: The Delegation Event Model, Event Classes, Sources of Events, Event Listener Interfaces, Using the Delegation Event Model, Adapter Classes, Inner Classes. Introducing Swing: Two Key Swing Features, Components and Containers, The Swing Packages, A Simple Swing Application.	08	CO2 & CO5
5.	Java 2 Enterprise Edition Overview: Overview of J2EE and J2SE; J2EE Multitier architecture. Servlets: Background; The	08	CO2 &

	Life Cycle of a Servlet; A simple Servlet; The Servlet API; The Javax.servlet Package; Reading Servlet Parameter; The Javax.servlet.http package; Handling HTTP Requests and Responses; Using Cookies; Session Tracking. JSP: Java Server Pages (JSP): JSP, JSP Tags, Request String, Cookies, Session Objects.		CO6
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Self-study component:

Note: 1. Questions for CIE and SEE not to be set from self-study component.

2. Assignment Questions should be from self-study component only.

UNIT 2: The Object Class , java.lang package

UNIT 3: java.io

UNIT 4: Using valueOf(), StringBuffer, StringBuilder, java collection framework

UNIT 5: Tomcat Apache server installation and execution

TEXT BOOKS:

1. Herbert Schildt, The Complete Reference - Java, 7th Edition, McGraw Hill, 2017.
2. Jim Keogh: J2EE - The Complete Reference, Tata McGraw Hill, 2007.

REFERENCE BOOKS:

1. Y. Daniel Liang: Introduction to JAVA Programming, 10th Edition, Pearson Education, 2015.
2. Herbert Schildt: Java The Complete Reference, 7th Edition, Tata McGraw Hill, 2007.
3. Stephanie Bodoff et al: The J2EE Tutorial, 2nd Edition, Pearson Education, 2004.