

Course Code	Course Title	L	T	P	C
OLMCA509	Programming in JAVA	3	1	0	4
Pre-requisite	NIL	Syllabus version			
		1.0			
Course Objectives					
1. To comprehend the basic and object-oriented concepts in Java. 2. To apply the concepts and to develop various approaches for problem-solving. 3. To design and build real-time applications with an event-driven graphical user interface, accessing files or database databases.					
Course Outcomes					
1. Familiarize with core object-oriented concepts in Java and able to apply them to solve problems. 2. Design and develop GUI applications that involve databases for real-world problems using JavaFX and JDBC. 3. Implement web applications using Servlet, Java Server Pages, and Java Frameworks 4. Use networking concepts to create Client Server applications. 5. Develop web applications for solving real-world problems.					
Module:1	Object Oriented Programming Concepts				
Java – Introduction array and loops, Classes and Objects, Methods, Constructors, Basic Concepts of Inheritance, Introduction to Interfaces, Overview of Pre-defined Packages.					
Module:2	Exception Handling, Multithreading and File Handling				
Introduction to Exception Handling – Managing Built-in Exceptions, Multithreading – Lifecycle of a Thread, Basic Principles of Synchronization, File processing and I/O stream.					
Module:3	GUI Programming				
Creating GUI, Event Handling with Java Swings and JavaFX					
Module:4	JDBC				
JDBC – Overview of Architecture, Database Operations focusing on CRUD activities using Statement and Prepared Statement.					
Module:5	MVC Web Applications using Servlet and JSP				
Servlets and JSP – A Comprehensive Overview, Basics of MVC Architecture, Introduction to Servlet with emphasis on its Lifecycle, Java Server Pages highlighting its Basic Lifecycle and Scripting Elements.					
Module:6	Frameworks in Java				
A Brief Introduction to Java Frameworks, focusing primarily on Spring and its Core Components.					
Module:7	Networking and RMI Programming				
Basics of Networking in Java, Building Client-Server Applications.					
	Total Lecture hours:				120 hours
Text Book(s)					
1.	Herbert Schildt, The Complete Reference-Java, Tata Mcgraw-Hill Edition, ISBN: 978-0-07-180855-2, 12th Edition, 2019.				

Reference Books			
1.	Bruce Eckel, Thinking in Java, Prentice Hall Edition, ISBN: 978-0131872486, 5th Edition, 2019.		
2.	Paul J. Deitel and Harvey Deitel, Java How to Program, Early Objects, Pearson Edition, ISBN: 978-0134743356, 11th Edition, 2017.		
3.	Jonathan McArthur, Java Frameworks Unleashed: Best Practices in Modern Java Development, GalaxyTech International Edition, ISBN: 978-0-98765-432-1, 3rd Edition, 2021.		
Mode of Evaluation: Quiz / Assignment / Mid-Term, FAT			
Recommended by Board of Studies		01-11-2023	
Approved by Academic Council		No. 72	Date: 13-12-2023