

Name of the Program:			BTECH CSE-AIML		Semester: 4		Level: UG	
Course Name:			Java Programming Laboratory		Course Code/ Course Type		UBTML211/PCC	
Course Pattern:			2025		Version		1.0	
Teaching Scheme					Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)		ESA (End Semester Assessment)	Practical/ Oral
-	1	-	1	2	25		-	25

Pre-Requisite:

1. Basic knowledge of Programming in C and C++

Course Objectives (CO):	The objectives of Java Programming Laboratory are: <ol style="list-style-type: none"> 1. To learn the fundamentals of the Java programming language 2. To learn object-oriented principles like abstraction, encapsulation, inheritance, and polymorphism and apply them in solving problems using java 3. To apply the concepts of exception handling, multithreading and collection classes using java 4. To develop software applications using JDBC connectivity. 5. To design the Graphical User Interface using applets and swing controls
Course Learning Outcomes (CLO):	Students would be able to: <ol style="list-style-type: none"> 1. Grasp the fundamentals of the Java programming language 2. Apply object-oriented principles like abstraction, encapsulation, inheritance, polymorphism in solving problems using java 3. Create exception handling, multithreading code using java. 4. Develop software applications using JDBC connectivity. 5. Design the Graphical User Interface using event handling.

Practical Plan:

Practical Number	Practical Title	Week Number	Details	CLO	Hours
1	Practical1 :	1	Write a java program to define the data types, variable, operators, arrays and control structures.	CLO1	2
2	Practical 2:	2	Develop a Program to define class and constructors. Demonstrate constructors with method overloading.	CLO1	2
3	Practical 3:	3, 4	Develop a Program to define inheritance and show method overriding.	CLO2	4
4	Practical 4:	5	Develop a Program to demonstrate Exception Handling	CLO3	2
5	Practical 5:	6, 7	Develop a Program to demonstrate Multi-threading	CLO3	4
6	Practical 6:	8	Develop a Program to demonstrate I/O operations	CLO4	2

7	Practical 7:	9	Develop a Program to demonstrate Database handling.	CLO4	2
8	Practical 8:	10	Develop a Program to demonstrate Network Programming.	CLO5	2
9	Practical 9:	11	Develop a Program to demonstrate Applet structure and event handling.	CLO5	2
10	Practical 10:	12	Develop a Program to demonstrate Layout managers.	CLO5	2
11	Mini Project	13, 14, 15	Develop a Project using java.	CLO5	6

Learning Resources:

Text Books:

1. "Java Fundamentals a Comprehensive Introduction" Herbert Schildt and Dale Skrien, TMH
2. "Head First Java: Your Brain on Java - A Learner's Guide", 1st Edition, by Bert Bates, Kathy Sierra

Reference Books:

1. "Java: the complete reference" by Herbert Schildt and Dale Skrien, TMH
2. "Java For Dummies (For Dummies" (Computer/Tech)) 8th Edition by Barry Burd

Online Resources/E-learning Resources:

1. <https://onlinecourses.nptel.ac.in/noc20-cs58/preview> Programming in Java By Prof. Debasis Samanta
2. <https://onlinecourses.nptel.ac.in/noc22-cs47/preview>