

Teaching Plan

Dept. Of Computer Science

.....

Discipline : **Computer Science (Hons.)**
Semester : **Second**
Paper Code : **CC3P**
Subject : **Programming in Java**
Name of faculty : **Gourab Maiti**
Duration: 24th April,2023 to 9th July,2023

Unit	Topics	No. of Lectures	Duration in Hour
1	Concept of Java Programming, Introductory Overview of Programming Platform/IDE: Understanding OOP Concepts, Architecture of Java Programming along with its support Platforms and Tools based IDEs, About Bytecode generation with Javac, Roles of JVM, JDK, JRE and JIT.	1	2
2	Simple Java Programs without Classes and Objects, Java Tokens including Data Types, Operators, Control Statements with their uses: Characteristics and Structure of Java Programming, Main Function in Java, Different types of Java Tokens, Various types of Operators in Java and Several Control Statements with Branches & Loops as Simple and Nesting types.	2	4
3	Idea of Arrays, Strings and Distinct uses of Java Methods: Knowledge of Arrays and its different types, Understanding the operations of several String Functions, Different types of Java Methods with Declaration and Calling, Java Methods with Recursions.	3	6
4	Concept of Classes and Objects, Types of Constructors, Knowledge about Abstraction and Encapsulation, Idea of Method Overloading Creation of Classes, Instantiation of Objects, Default Constructor, Parameterized Constructor, Data Abstraction concept, Usage of Final Keyword, Data Hiding using Encapsulation mechanism, Method and Constructor Overloading.	2	4
5	Knowledge about Polymorphism, Method Overriding, Various types of Inheritance, Idea of Interfacing, Abstract Classes Different types of Polymorphism concepts, Method Overriding with the idea of Super and Sub Classes, Single Inheritance, Multilevel Inheritance, Hierarchical Inheritance, Use of Interface for achieving Multiple Inheritance in Java, Concept of Abstract Classes and Dynamic Methods.	3	6

6	Java Packages, Uses of Enumerations, Concept of Autoboxing and Metadata Package concept in Java Programming, Making own Packages, Extending Interfaces and Packages, Knowledge about Enumerations and Wrapper Classes, Idea of Autoboxing, Unboxing and Metadata.	2	4
7	Exceptions and Exception Handling Concepts, About Threads and Idea of Multithreading Types of Exceptions in Java Programming, Use of Try - Catch Block, Management and Handling of Uncaught Exceptions, Working mechanisms of Throw and Throwable, Understanding Finally Approach, Thread Class and Runnable Interface, Creation of Single and Multiple Threads with Prioritization, Synchronization and Communication.	3	6
8	I/O Streams, File Handling Concepts, Manipulations and Perception about Interleaving Input-Output Operations and Streaming of flows, Concepts and Operations of Files, Reading and Writing with Files, Renaming and Deletion of Files, and from Consoles, Knowledge of Error Checking, Interfacing, Exception Handling and Interleaving in case of Files.	2	4
9	Networking Features in Java, Overview of Servlets, Database Connectivity using Java Understanding Java.NET, Idea of TCP/IP Architecture, Knowledge about Datagram Programming, View about Servlets and Web Programming, JDBC Architecture View, Accessing and Manipulating Databases using JDBC Module.	3	6
10	Java Applets and Details about Event Driven and Event Handling Mechanisms in Java Programming Overview of Event Driven and Event Handling Programs, Writing Java Applets, Working with Graphics and GUI, Idea of Listener Interfaces, Adapter and Inner Classes, Understanding AWT Classes and JFC, Brief introductory concepts of Java Swing and its components.	3	6

Reference Books:

1. Introduction to Programming Using Java, David J. Eck, CreateSpace Independent Publishing Programming with Java (Schaum's Series), John R. Hubbard, TMH Publication