Detailed Syllabus:
MCA201
JAVA Programming

Unit No.	Topics	No. of Hours	CO No.
I	**An overview of Java:** Object Oriented Programming, Features of Java, Java Virtual Machine, Java Environment: Java Development Kit, Java Standard Library, Data Types, **Variables:** Declaring a variable, Dynamic Initialization, The scope and life time of variable, Type conversion and Casting: Narrowing and Widening Conversions, Numeric Promotions, Type Conversion Contexts; **Operators**: Arithmetic Operators, Relational Operators, Logical Operators, Bit wise Operators, Conditional Operators, new operator, [ ] and instance of operator. **Control Statements:** Java's Selection statement, Iteration Statement, Jump Statement. **Arrays**: Declaring Array variables, constructing an Array, Initializing an Array, Multidimensional Arrays, Anonymous Arrays.	10	1
II	**Introducing Classes:** Class Fundamentals, Declaring Object, Assigning Object Reference Variables, Defining **Methods**: method overloading and overriding, Using objects as parameter, Constructors, Garbage collection, finalize () method. **Inheritance**: Inheritance basic, method overloading, object reference this and super, Chaining constructor using this () and super (), Member accessibility modifier: public, protected, default accessibility of member, private protected, private, **Package:** Define package, CLASSPATH, importing package, Interface: Define an interface, implementing interface, extending interface, variable in interface, **Overview of nested class:** Top level nested class and interface, Non static inner class, Local class, Anonymous class.	10	2
III	**Exception Handling:** Exception types, Uncaught Exception, Using try and catch, multiple catch, nested try block, throw, throws, and finally. **Multithreading:** Creating Thread, Thread Priority, Synchronization, Thread Scheduler, Running & Yielding, Sleeping & Waking Up, Waiting & Notifying, Suspending & Resuming; miscellaneous methods in thread class.	10	3
IV	**Fundamental Library Classes of Java and Input / Output** Object class, String class, String Buffer class, Wrapper class, Math class, Collection: Collection interface, List interface, Set interface sorted interface, Array List class, Liked List class, Tree Set, Comparator, Vector, Stack. **I/O Classes and Interfaces:** File, Buffer Stream, Character Stream, and Random Access for files, Object Sterilization.	10	4
V	**Event Handling:** Overview of Event Handling, Event Hierarchy, The Delegation Event Model, Event Classes, KeyEventClass, Sources of Events, Event Listener Interfaces, Using the Delegation Event Model, Event Adapters. **GUI Programming:** Introduction to Swing, History, Features, Components and Containers, Swing Packages, Painting, Swing Component Classes: JLabel, JTextField, Swing Buttons, JTabbedPane, JScrollBar,JList, JComboBox, Trees, JTable, Swing Menus:< Main Menu, PopUp Menu, ToolBar. **JDBC:** Introduction to JDBC, JDBC Drivers Type, Connection, JDBC URLs, Driver Manager, Statement – Creating, Executing, Closing, Result Set – Data Types and Conversions. Prepared Statement, Callable Statement, Mapping SQL and Java Types.	10	5

BOOKS RECOMMENDED:

1. **Java: The Complete Reference,** *HerbertSchildt,* Oracle Press.
2. **Core Java: Volume-I & Volume 2,** *Cay S. Horstmann& Gary Cornell,* PEARSON
3. **Programming with Java,** *E. Balagurusamy,* McGraw Hill Education
4. **Core Java**, *R.NageshwaraRao,* Dreamtech Press