**Core JAVA Syllabus(134 Hours)**

1. **Basics of Java 3 Hrs.**

* Java - What, Where and Why?
* History and Features of Java
* Internals of Java Program
* Difference between JDK,JRE and JVM
* Internal Details of JVM
* Variable and Data Type
* Unicode System
* Naming Convention

1. **OOPS Conecpts 12 Hrs.**

* Advantage of OOPs
* Object and Class
* Method Overloading
* Constructor
* static variable, method and block
* this keyword
* Inheritance (IS-A)
* Aggregation and Composition(HAS-A)
* Method Overriding
* Covariant Return Type
* super keyword
* Instance Initializer block
* final keyword
* Runtime Polymorphism
* static and Dynamic binding
* Abstract class and Interface
* Downcasting with instanceof operator
* Package and Access Modifiers
* Encapsulation
* Object class
* Object Cloning
* Java Array
* Call By Value and Call By Reference
* strictfp keyword
* Creating API Document

1. **String Handling 6 Hrs.**

* String : What and Why?
* Immutable String
* String Comparison
* String Concatenation
* Substring
* Methods of String class
* StringBuffer class
* StringBuilder class
* Creating Immutable class
* toString method
* StringTokenizer class

1. **Exception Handling 6 Hrs.**

* Exception Handling: What and Why?
* try and catch block
* Multiple catch block
* Nested try
* finally block
* throw keyword
* Exception Propagation
* throws keyword
* Exception Handling with Method Overriding
* Custom Exception

1. **Nested Classes 3 hrs.**

* Nested Class : What and Why?
* Member Inner class
* Annonymous Inner class
* Local Inner class
* static nested class
* Nested Interface

1. **Multithreading 3 Hrs.**

* Multithreading : What and Why?
* Life Cycle of a Thread
* Creating Thread
* Thread Schedular
* Sleeping a thread
* Joining a thread
* Thread Priority
* Daemon Thread
* Thread Pooling
* Thread Group
* ShutdownHook
* Performing multiple task by multiple thread
* Garbage Collection
* Runnable class

1. **Synchronization 3 Hrs.**

* Synchronization: What and Why?
* synchronized method
* synchronized block
* static synchronization
* Deadlock
* Inter-thread Communication
* Interrupting Thread

1. **Input and output 6 Hrs.**

* FileOutputStream & FileInputStream
* ByteArrayOutputStream
* SequenceInputStream
* BufferedOutputStream & BufferedInputStream
* FileWriter & FileReader
* CharArrayWriter
* Input from keyboard by InputStreamReader
* Input from keyboard by Console
* Input from keyboard by Scanner
* PrintStream class
* PrintWriter class
* Compressing and Uncompressing File
* Reading and Writing data simultaneously
* DataInputStream and DataOutputStream
* StreamTokenizer class

1. **Serialization 3 Hrs.**

* Serialization & Deserialization
* Serialization with IS-A and Has-A
* transient keyword

1. **Networking 6 Hrs.**

* Socket Programming
* URL class
* Displaying data of a web page
* InetAddress class
* DatagramSocket and DatagramPacket
* Two way communication

1. **AWT and EventHandling 9 Hrs.**

* AWT Controls
* Event Handling by 3 ways
* Event classes and Listener Interfaces
* Adapter classes
* Creating Games and Applications

1. **Swing 12 Hrs.**

* Basics of Swing
* JButton class
* JRadioButton class
* JTextArea class
* JComboBox class
* JTable class
* JColorChooser class
* JProgressBar class
* JSlider class
* Digital Watch
* Graphics in swing
* Displaying Image
* Edit Menu for Notepad
* Open Dialog Box
* Creating Notepad
* Creating Games and applications

1. **LayoutManagers 3 Hrs.**

* BorderLayout
* GridLayout
* FlowLayout
* BoxLayout
* CardLayout

1. **Applet 9 Hrs.**

* Life Cycle of Applet
* Graphics in Applet
* Displaying image in Applet
* Animation in Applet
* EventHandling in Applet
* JApplet class
* Painting in Applet
* Digital Clock in Applet
* Analog Clock in Applet
* Parameter in Applet
* Applet Communication
* Creating Games

1. **Reflection API 6 Hrs.**

* Reflection API
* newInstance() & Determining the class object
* javap tool
* creating javap tool
* creating appletviewer
* Accessing private method from outside the class

1. **Collection 6 Hrs.**

* Collection Framework
* ArrayList class
* LinkedList class
* ListIterator interface
* HashSet class
* LinkedHashSet class
* TreeSet class
* PriorityQueue class
* ArrayDeque class
* Map interface
* HashMap class
* LinkedHashMap class
* TreeMap class
* Hashtable class
* Comparable and Comparator
* Properties class

1. **JDBC 12 Hrs.**

* JDBC Drivers
* Steps to connect to the database
* Connectivity with Oracle
* Connectivity with MySQL
* Connectivity with Access without DSN
* DriverManager
* Connection interface
* Statement interface
* ResultSet interface
* PreparedStatement
* ResultSetMetaData
* DatabaseMetaData
* Storing image
* Retrieving image
* Storing file
* Retrieving file
* Stored procedures and functions
* Transaction Management
* Batch Processing
* JDBC New Features

1. **Java New Features 6 Hrs.**

* Assertion
* For-each loop
* Varargs
* Static Import
* Autoboxing and Unboxing
* Enum Type
* Annotation

1. **Live Project 20 Hrs.**

* Getting requirements
* Preparing database and business logics
* Developing application
* Testing and implementing the project
* Troubleshooting the project application after implementation
* Summary