

## 1st Semester

### MSCS101 PROGRAMMING WITH JAVA (3-0-0)

#### Module-I (10 Periods)

JAVA BASICS: Concept of Object oriented Paradigm, History of Java, Java buzzwords, JVM architecture, simple java program, Data types, Variables, Scope and life time of variables, final variable, operators, control statements, type conversion and casting, arrays, methods, Static block, Static Data, Static Method, User defined class, constructors, Use of this keyword, Object class, Scanner class, String and String Buffer Classes, Package, Wrapper class.

#### Module-II (10 Periods)

INHERITANCE AND POLYMORPHISM: Basic concepts, Types of inheritance, Member access rules, Method Overloading, Method overriding, Usage of this and Super key word, Dynamic method dispatch, final class, final method.

Abstraction: Abstract classes, Usage of final keyword, Interface concept: Defining and Implementing interfaces, Multiple Inheritance through interfaces.

EXCEPTION HANDLING: Exception types, Usage of Try, Catch, Throw, Throws and Finally keywords, Built-in Exceptions, Creating own Exception classes

#### Module-III (10 Periods)

MULTI THREADING: Concepts of Thread, Thread life cycle, creating threads using Thread class and Runnable interface, Thread priorities, Synchronization, Inter Thread communication.

I / O : Concepts of streams, Difference between binary Io and Character IO, Stream classes- Byte and Character stream, Reading console Input and Writing Console output, File Handling,

Collections: Collections hierarchy, ArrayList, Array vs ArrayList.

#### Module-IV (10 Periods)

GUI Programming: AWT Vs Swing, AWT class hierarchy, Swing class hierarchy user interface components- Labels, Button, Text Components, Check Box, Check Box Group, Choice, List Box, Panels – Scroll Pane, Menu, Scroll Bar.

Working with Frame class and JFrame class, Colour, Fonts and layout managers. EVENT HANDLING: Event Delegation Model (EDM), Events, Event sources, Event Listeners, , Handling Action Event, Mouse, Keyboard and Window Events, Adapter classes, Inner classes.

DialogBoxes, JList, JComboBox

Database Programming: JDBC concept, Types of Drivers, Connection, Statement, Prepared Statement, Resultset, Web programming using applet, Basics of Server side programming, Servlet.

#### Books:

1. Herbert schildt (2010), The complete reference, 7th edition, Tata Mc graw Hill, New Delhi
2. Liang Y. Daniel, Introduction to Java Programming, 7th Edition, 2009, Pearson Education

#### Reference Book

1. Head First Java, O'rielly publications