MCC 401: PROGRAMMING WITH JAVA

Module – 1   (16 hours)

Introduction to Java Programming Language, Data Types and Operations, Structured Programming, Selection Statements, Loops, Methods, Method Abstraction and Stepwise Refinement, Arrays, Object-Oriented Programming: Classes and Objects, Constructors, Implementing & Designing Classes, Use of Keywords: static, final, this, Class Abstraction and Encapsulation, Strings and Text I/O, Inheritance and Polymorphism, use of super keyword, Overriding vs. Overloading, Object: The Cosmic Superclass, Abstract Classes and Interfaces, Packages, Object-Oriented Design and Patterns.

Module – 2   (12 hours)

GUI Programming: GUI Basics, Graphics, Event-Driven Programming, Creating User Interfaces, Applets and Multimedia, Exception Handling, Binary I/O, Files & Streams, Recursion, Dynamic Binding, Generics & Generic Programming, Java Collections Framework, Algorithm Efficiency, Searching & Sorting.

Module – 3   (12 hours)

Multithreading, Networking, JDBC, Internationalization, Advanced GUI Programming: MVC, JavaBeans and Bean Events, Containers, Layout Managers, and Borders, Menus, Toolbars, Dialogs and Swing Models, JTable and JTree, New Features of Java.

Text Books:

1. Y. Daniel Liang, "Introduction to Java Programming: Comprehensive Version", 7th Edition, 2009, Pearson Education Inc., New Delhi. (Book Chapters: 1 to 24, 26, 29 to 37)
2. Cay S. Horstmann, "Big Java", 3rd Edition, Wiley India Pvt. Ltd., New Delhi.

Reference Books:

1. Richard A. Johnson, "An Introduction to Java Programming and Object Oriented Application Development", First Edition, 2007, CENGAGE Learning India Pvt. Ltd., New Delhi.
2. E. Balagurusamy, "Programming with Java: A Primer", 3rd Edition, 2008, McGraw-Hill Education (India), New Delhi.
3. Harvey M. Deitel & Paul J. Deitel, "Java How to Program", 8th Edition, 2009, PHI Learning Pvt. Ltd., New Delhi.
4. Mahesh P. Bhave & Sunil A. Patekar, "Programming with Java", First Edition, 2009, Pearson Education, Inc. New Delhi.
5. P. Radha Krishna, "Object-Oriented Programming through Java", First Edition, 2007, Universities Press (India) Pvt. Ltd., Hyderabad.