

SREENIVASA INSTITUTE of TECHNOLOGY and MANAGEMENT STUDIES

I MCA - II Semester

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16MCA121 OBJECT ORIENTED PROGRAMMING THROUGH JAVA

Course Objectives

- To learn Java basic concepts
- To Explore Java Inheritance , Interfaces and Collection Framework
- To Create and use Java Packages
- To Design Applets using swing package
- To Learn Handling of Exceptions and Events
- To Create Multiple Threads using Java

UNIT - 1: Fundamentals of Object-Oriented Programming & Java Evolution

Introduction, Object-Oriented Paradigm, Basic Concepts of Object-Oriented Programming, Benefits of OOP, Applications of OOP, Java History, Java Features, How Java differs from c and c++, Java Environment, constants, Data Types, Variables, Type Conversion and Casting, Automatic Type Promotion in Expression, Arrays, Operators and Expressions, Control Statements.

UNIT - 2: Inheritance, Interfaces and Packages

Introduction, Defining a Class, Adding Variables, Adding Methods, Creating Objects, Accessing Class members, Constructors, Method Overloading, Static members, Inheritance, Overriding Methods, Final Variables, Methods and classes, Abstract Methods and Classes, Visibility control, Packages-Introduction, Java API Package, Using System Package, Naming Conventions, Creating Packages, Accessing a Package.

UNIT - 3: Interfaces and Collection Framework

Interfaces-Defining an Interface, Implementing Interfaces, Interfaces can be extended , Collections Overview: The Collection Interfaces – The List Interface, The Set Interface, The Collections Classes - HashSet, Stack, LinkedList, ArrayList, Vector, Accessing a Collection Via an Iterator, String, StringBuffer Class, Utility classes – StringTokenizer, Scanner

UNIT – 4 : Exception Handling, Multithreading and Applets

.Exception Handling Fundamentals, Exception types, Uncaught Exception, Using try and caught, Multiple catch Clauses, Nested try statements, throw, throws, finally, Java's Built-in Exceptions, user defined Exceptions, Multithreaded Programming – Thread States, Life Cycle of a Thread , Creating a Thread, Creating Multiple Threads, Thread Priorities. Applets: How Applets differ from Applications, Building Applet Code, Applet Life Cycle, Designing a web page, Applet tag, Adding Applet to HTML File, Running the Applet.

UNIT – 5: Event handling and Swings

Two Event Handling Mechanism, The Delegation Event Model, Event Classes, Sources of Events, Event Listeners Interfaces, Adapter Classes. Swings - The Origins of Swings, Swing is Built on the AWT, Swing Features , Swing Components and Containers , A Simple Swing Application, Event Handling, Creating a Swing Applet- Exploring Swing.

Course Outcomes:

- Explore basic Object Oriented Programming Concepts through java
- Learn how to implement Inheritance and Polymorphism concepts thro' Java
- Know how to create and import packages
- Design Applet Programs using Swing package
- To handling various Exceptions and Events

TEXT BOOKS:

1. Java: The Complete Reference, 7/e , 2008, Herbert schildt , Tata McGraw Hill- New Delhi.
2. “Programming with Java”, 3e, , E.Balaguruswamy, Tata McGraw Hill- New Delhi

REFERENCE BOOKS:

1. Core Java- Volume 1-Fundamentals, 8/e, 2012, Cay S.Horstmann and Gary Cornell- Pearson Education, New Delhi.
2. Core Java- Volume2-Advanced Features, 8/e, 2012, Cay.S. Horstmann and Gary Cornell, Pearson Education, New Delhi.

3. Advanced Programming in Java 2, 2/e.,2005, K. Somasundaram , Jaico Publishing House, New Delhi.
4. Maurach's Beginning Java2-D.Lowe ,1/e,2005, J.Murach A. Steelman- Shroff Publishers and Distributors, New Delhi.
5. Introduction to Java Programming, 6/e, 2006, Y. Daniel Liang, Pearson Education, New Delhi.

SITAMS, CHITTOOR