

GUJARAT UNIVERSITY

K. S. SCHOOL OF BUSINESS MANAGEMENT
[Five Years' (Full-time) Integrated Degree Course]

Semester-5 [M.Sc. (CA & IT)]

Subject Code: - KS_C_CC-355

Subject Name: - Object Oriented Programming with Java

Course Credit: - 3

Objective:

Implement the basic principles and concepts of object oriented programming using core java. To be able to develop GUI based platform independent application

Unit No.	Course Content	Weight-age (%)
1	<ul style="list-style-type: none">• Introduction to Object Oriented Environment :- Class, Object, Inheritance, Encapsulation, Abstraction Polymorphism,• Introduction of java: - The Byte-code, Features of Java, IDE for Java, Java Program Structure and Java's Class Library.• Data Types, Variables, and Operators :- The Simple Data Types, Literals, Variables, Scope of Variable, Type Conversion and Casting, Automatic Type Promotion in expressions, Java Operators, Operator Precedence.• Control Statements: - Selection Statements– if and switch, Iterative Statements –for, while, do.... While, Jump Statements-break, continue• Introduction to Classes: - Definition of a Class, Definition of Methods, Constructors, Creating Objects of a Class.	(20%)
2	<ul style="list-style-type: none">• Classes and Method in Detail: - Method overloading, Constructor Overloading, Assigning Object Reference Variables, Access Modifier. The Reference, Inner classes, Automatic Garbage Collection.• Arrays and Strings :-Arrays, Arrays of Characters, String Handling Using String Class,	(20%)

	<p>Operations on String Handling Using String Buffer Class.</p> <p>Inheritance:- Using Existing Classes, Class Inheritance, Choosing Base Class, Access Attributes, Polymorphism, Multiple Levels of Inheritance, Abstraction through Abstract Classes, Using Final Modifier, The Universal Super class -Object Class, Concept of Interface</p>	
3	<ul style="list-style-type: none"> • Packages and Interface:-Understanding Packages, Defining a Package, Packaging up Your Classes, Adding Classes from a Package to Your Program, Understanding CLASSPATH, Standard Packages, Access Protection in Packages. • Exception Handling:- The Idea behind Exceptions, Types of Exceptions, Dealing with Exceptions, Exception Objects, Defining Your Own Exceptions <p>Multithreading Programming:- The Java Thread Model, Understanding Threads, The Main Thread, Creating a Thread, Creating Multiple Threads, Thread Priorities, Synchronization, Inter -thread communication, Deadlocks</p>	(20%)
4	<ul style="list-style-type: none"> • Enumerations, Autoboxing & Annotations(Metadata):-Enumeration Fundamentals, Type Wrappers, Autoboxing and method, Introduction of Annotations • Input/output in Java :-I/O Basic, The Stream Classes, The Byte Streams, The Character Streams, I/O Classes, Reading Console Input Writing Console Output, Reading and Writing on Files, Serialization, Stream Benefits. • Generics:-introduction of generics • Collection Framework, Collection interface, list interface, map interface. 	(20%)
5	<ul style="list-style-type: none"> • Creating Applets in Java: - Applet Basics, Applet Architecture, Applet Life Cycle, Simple Applet Display Methods, Requesting Repainting, Using the Status Window, The HTML APPLET Tag Passing Parameters to Applets. • Handling Events in Java :- Two Event Handling Mechanisms, The Delegation Event Model, The Event Handling Process, Event Classes, Sources of Events, Event Listener Interfaces, Using the Delegation Event Model, Adapter Classes • Working with Windows, Graphics and Texts: - 	(20%)

	<p>Working with Graphics, Working with Color, Setting the Paint Mode, Working With Fonts, Managing Text Output Using Font Metrics, Exploring Text and Graphics.</p> <p>Working with AWT Controls, Layout Managers and Menus :- Control Fundamentals, Labels, Buttons, Check Boxes and Check, Box Groups, Choice Controls, Lists, Scroll Bars, Text Field and Text Area Controls, Understanding Layout Managers, Flow Layout Manager, Border Layout Manager, Grid Layout Manager, Using Insets Manager, Card Layout Manager, Menu Bars and Menus, Dialog Boxes, File Dialog</p>	
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Recommended Lecture Scheme: Approximately 45 hours of classroom teaching,

Recommended Practical Scheme: Applicable

Assignment: One assignment every month.

Main Reference Books:

1. Java The Complete Reference
By Herbert Schildt, TMH Publication, 8th Edition

Reference Books:

1. Beginning Java 2 By Ivor Horton , Wiley Computer Publishing, 5 Edition (2007)
2. Teach Yourself JAVA
By Josheph O'Neil & Herb Schildt, Tata McGrow Hill
3. Core Java: An Integrated Approach
By Dr. R Nageswara Rao, dreamtechh press, 1st edition
4. Programming with JAVA: A printer
By Balagurusamy, Tata McGrow Hill, 2nd Edition
5. Programming in java
By sachin malhotra & saurabh choudhary, oxford press