GIET UNIVERSITY, GUNUPUR, ODISHA

SCHOOL OF ENGINEERING

Incorporated by Act 23 of Govt. of Odisha and under approval of UGC & AICTE
Accredited by NAAC with a CGPA of 3.28/4 at *A Grade*
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Subject Code	Name of the Subject	L	T	P	C	QP
	OBJECT ORIENTED PROGRAMMING THROUGH JAVA	**3**	**0**	**0**	**3**	**A**

Course Educational Objectives

CEO1	The model of object oriented programming: abstract data types, encapsulation, inheritance and polymorphism
CEO2	Fundamental features of an object oriented language like Java: object classes and interfaces, exceptions and libraries of object collections
CEO3	How to take the statement of a business problem and from this determine suitable logic for solving the problem; then be able to proceed to code that logic as a program written in Java.
CEO4	How to test, document and prepare a professional looking package for each business project using java doc.

Course Outcomes: ***Upon successful completion of this course, students should be able to:***

CO1	Analyze ,formulate and model problems using concepts of object oriented analysis and design and implement using Java.
CO2	Write programs using basic data types and strings, using loops, Array.
CO3	Analyze the problems and resolve run-time errors with Multithreading and Exception Handling techniques
CO4	Understand the power of generics and Collections Framework and Java.io package

CO-PO & PSO Mapping

COs	PROGRAMME OUTCOMES												PSOs		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	1											1		
CO2	3	2	2										1		
CO3	2	2	2										2		
CO4	2	1	2										1		
Avg.													1		

SYLLABUS

Unit – I **[12Hrs]**

An introduction to Object Oriented Programming, Features of Object Oriented Programming Introduction to Java. Difference between C/C++ and Java, Features of Java, First Java Program, Writing the java program, Compiling the program, JVM and its significance in executing a program, Architecture of JVM. Understanding, Java Tokens, Datatypes, Operators, Control Structures and Arrays, Conditional Statements, Loops/ Iterators, Jumping Statements, Java Arrays, Multidimensional Arrays, Taking Input from keyboard, Command Line Arguments, Using Scanner Class, Using Buffered Reader class.

Unit - II **[12Hrs]**

Introduction to Classes and Objects. Constructors, static Keyword, this Keyword, Array of Objects, Access Modifiers (Public, Private, Protected, Default). Inheritance, Types of Inheritance and Java supported Inheritance, super, Polymorphism, Method Overloading, Constructor Overloading, Method Overriding, Dynamic Method Dispatching. String Manipulations. Wrapper classes, Auto boxing and unboxing. Abstract classes, Interfaces, Multiple Inheritance Using Interfaces,

Java API Packages, User-Defined Packages, Accessing Packages, Error and Exception Handling, Types of exceptions Hierarchy of Exception classes, try, catch, finally, throw, throws, Commonly used Exceptions and their details ,User defined exception classes.

Unit – III [12 Hrs]

Multithreading, Thread in Java, Thread execution prevention methods. (yield(), join(), sleep()), Concept of Synchronization, Inter Thread Communication, Basics of Deadlock, Demon Thread, Improvement in Multithreading, Inner Classes, Introduction, Member inner class, Static inner class, Local inner class, Anonymous inner class.

IO Streams (java.io package), Byte Stream and Character Stream, Files and Random Access Files, Serialization, Collection Frame Work (java.util), Util Package interfaces, List, Set, Map.

Unit – IV **[12 Hrs.]**

Applet Introduction, Life Cycle of an Applet, GUI with an Applet, Abstract Window Toolkit (AWT), Introduction to GUI, Description of Components and Containers, Component/Container hierarchy, Understanding different Components/Container classes and their constructors, Event Handling, Different mechanisms of Event Handling, Listener Interfaces, Adapter classes.

Teaching Methods: Chalk& Board/ PPT/Video Lectures

Text Book:

1. *Programming in Java. Second Edition. Oxford Higher Education. (SachinMalhotra/ SauravChoudhary)*
2. *Core Java For Beginners. (RashmiKanta Das), Vikas Publication*

Reference Book:

3. *JAVA Complete Reference (9th Edition) HerbaltSchelidt*