VASAVI COLLEGE OF ENGINEERING (Autonomous)
IBRAHIMBAGH, HYDERABAD – 500 031
DEPARTMENT OF INFORMATION TECHNOLOGY

OBJECT ORIENTED PROGRAMMING USING JAVA
(GENERAL POOL : OPEN ELECTIVE-I)
(Common for CIVIL, ECE, EEE & MECH)
SYLLABUS FOR B.E. III SEMESTER

L:T:P (Hrs/week):2:0:0	SEE Marks: 60	Course Code: **U23OE310IT**
Credits: 2	CIE Marks: 40	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
The Objectives of the course:	*On completion of the course, students will be able to*
Provide an overview of object-oriented programming concepts and explore java libraries.	1. Illustrate object-oriented programming features using Java. 2. Perform exception handling and multithreading. 3. Perform I/O operations, String manipulation using java libraries. 4. Implement data structures using collections framework.

UNIT-I
Object Oriented Programming Fundamentals :
Object, Class, Abstraction, Encapsulation, Inheritance, Polymorphism.
Java Programming Fundamentals: Overview of Java , Java-keywords, Data types, Variables, Arrays, Command Line Arguments, Operators, Control statements, Structure of a Java class, Classes, Methods, Abstract Classes, Nested Classes. **Interfaces :** Defining interfaces, extending interfaces, implementing interfaces.
Packages: Creation, importing a package and user defined package.

UNIT-II
Exception Handling: Introduction, types of exceptions, syntax of exception handling code, multiple catch statements, using finally statement, user-defined exceptions.
Multithreaded Programming: Introduction to threads, creating threads, extending the Thread class, implementing the Runnable interface, life cycle of a thread, priority of a thread.

UNIT-III
Exploring java.io : Java I/O classes and interfaces, Files, Character, and Byte Streams.
Exploring java.lang: Object, Wrapper classes, String, StringBuffer, System.
Exploring java.util: Scanner, StringTokenizer.

UNIT-IV
Introduction to Generics: Defining Generics, Generics and Subtyping.
Introduction to Collections: Collection Framework, Benefits of Collections Framework, Collection Framework Interfaces : Collection , Set, List, Queue, Deque, Sorted Set, Map, Sorted Map. Collection Framework Implementations : HashSet, TreeSet, ArrayList, LinkedList, PriorityQueue, ArrayDeque, HashMap, TreeMap. Traversing Collections. Collection Framework Algorithms : Sorting, Searching.

Learning Resources:
1. Herbert Schildt, The Complete Reference Java, 9th Edition, Tata McGraw Hill Education,2014.
2. Nell Dale, Chip Weems, Programming and Problem solving with JAVA, Jones and Bartlett Publisher, 2004.
3. C Thomas Wu, An Introduction to Object Oriented Programming with Java, 5th edition, McGraw Hill Publishing, 2010.
4. Y. Daniel Liang , An Introduction to JAVA Programming, Tata McGraw Hill, 2009.
5. Kathy Sierra, Head First Java, 2/e, Shroff Publishers, 2012.
6. https://nptel.ac.in/courses/106105191/
7. https://docs.oracle.com/javase/tutorial/

The break-up of CIE: Internal Tests+ Assignments + Quizzes

1	No. of Internal Tests	:	2	Max. Marks for each Internal Tests	:	30
2	No. of Assignments	:	2	Max. Marks for each Assignment	:	5
3	No. of Quizzes	:	2	Max. Marks for each Quiz Test	:	5

Duration of Internal Tests   : 90 Minutes