

22UCSC401**Object Oriented Programming****(3-0-0) 3****Contact Hours: 39**

Course Learning Objectives (CLOs): This course focuses on the following learning perspectives:

- Object Oriented (OO) concepts/philosophy and its benefits and drawbacks in system development.
- Basic features of Java programming language to implement Object Oriented (OO) Key concepts like ADT/Encapsulation, reusability (Inheritance/Composite Objects), polymorphism etc., and other core basic features.

Course Outcomes (COs):

Description of the Course Outcome: At the end of the course the student will be able to:		Mapping to POs(1-12) / PSOs (13-16)		
		Substantial Level (3)	Moderate Level (2)	Slight Level (1)
CO-1	Prepare an abstract data type for the given scenario and write simple programs using basic features of Java.	13	1	-
CO-2	Write a program to solve given problem using packages and interfaces.	2, 14	1, 16	3
CO-3	Write a program to solve given problem using exception handling and allow interleaved execution using threads.	2, 14	1	3
CO-4	Use streams in developing system that needs facility for storage and retrieval of data.	2, 14, 16	1	3
CO-5	Write Java programs to explore networking capabilities and build applications.	2, 14, 16	1	3
CO-6	Develop a web-based application using J2EE features.	2, 14	1	3
CO-7	Build an appropriate graphical user interface for a given problem specification using Java FX feature.	2, 14	1	3
CO-8	Write a program using lambda expression to solve a given problem.	2, 14	1	3

POs/PSOs	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Mapping Level	2.0	3.0	1.0	-	-	-	-	3.0	-	-	-	-	3.0	3.0	-	2.3

Pre-requisites: Knowledge of Programming language (any)

Contents:

Unit-I

Basic Features of Java: Why object orientation? Key concepts of OOP, Classes: Introduction, Objects, Methods, Constructors, Abstraction, Encapsulation, Inheritance, Polymorphism in Java, String class in Java **9 Hrs**

SDMCET: Syllabus

Unit-II

Core Features - 1: Packages and Interfaces, Exceptions, Threads. **7 Hrs**

Unit-III

Core Features - 2: Concurrency Utilities, Streams, Generics **7 Hrs**

Unit-IV

Advanced Features - 1: JDBC, Java Networking, Servlets and JSP **9 Hrs**

Unit-V

Advanced Features - 2: Lambda Expressions, JavaFX **7 Hrs**

Reference Books:

- 1) Herbert Schildt, "Java-The Complete Reference", 9/E, Tata McGraw Hill, 2014.
- 2) Grady Booch, "Object-Oriented Analysis and Design with Applications", 3/E, Pearson Education, 2007.
- 3) Jim Keogh "J2EE – The Complete Reference", McGraw Hill Publications, 2007