20CS2701A - JAVA PROGRAMMING

Offering Branches	CSE		
Course Category:	Open Elective -III	Credits:	3
Course Type:	Theory	Lecture-Tutorial-Practical:	3-0-0
Prerequisites:	-	Continuous Evaluation:	30
		Semester End Evaluation:	70
		Total Marks:	100

Course Outcomes

Upon successful completion of the course, the student will be able to:

CO1	**Understand** the fundamental concepts of Object Oriented Programming & constructs of Java programming language.	K2
CO2	**Apply** principles of object oriented programming to solve problems.	K3
CO3	**Apply** concepts of interfaces, exception handling mechanisms to solve the given problem.	K3
CO4	**Analyze** the problem and apply suitable object oriented programming constructs for solving the given problem.	K4

Contribution of Course Outcomes towards achievement of Program Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3													
CO2	3													
CO3	3													
CO4		3			3				3	3				
Avg.	**3**	**3**			**3**				**3**	**3**				

1- Low **2-Medium** **3-High**

Course Content

UNIT-1	**Java Evolution & Environment:** History and Evaluation of Java, Overview of Java language, Java's magic code: Byte code, Java Buzzwords, Three OOP principles, simple program. **Java programming environment**: Data types, variables and Arrays,Operators, control statements.	**CO1 CO2**
UNIT-2	**Classes, Objects and Methods:** Introduction, defining a class, declaring objects, assigning object reference variables, introducing methods, accessing class members, returning a value, constructors, parameterized constructors, this keyword, garbage collection, overloading constructors and methods, recursion, understanding static, introducing final, Using command line arguments. **Strings**: String, String Buffer and String Tokenizer classes.	**CO1 CO2**
UNIT-3	**Basic I/O:** Data Input Stream, Data Output Stream, Buffered Reader, Input Stream Reader, Scanner classes. **Inheritance:** Basics, Using super, creating multilevel hierarchy, order of constructor execution, method overriding, dynamic method dispatch, applying method overridden, Abstract classes, Using final with inheritance, The Object class.	**CO1 CO2**
UNIT-4	**Interfaces:** Introduction, defining an interface, implementing interfaces. Accessing interfaces through interface references, variables in interfaces, interfaces can be extended. **Package:** Defining a package, CLASSPATH, Packages and member access, importing packages.	**CO1 CO2 CO3**
UNIT-5	**Exception Handling:** Fundamentals, types, uncaught exceptions, usingtry and catch, multiple catch clauses, nested try statement, throw, throws, finally, built-in exceptions, creating your own exception subclasses.	**CO1 CO2 CO4**

	Multi-Threaded programming: Thread model, Creating a Thread: implementing runnable, extending Thread, creating multiple threads, using isAlive() and join(), Thread Priorities.	

Learning Resources

Text Books	1. The Java Complete Reference, Herbert Scheldt, 10th edition, TMH Publications, 2018.
Reference Books	1. Programming with JAVA, E. Balagurusamy, 2nd edition, TMH Publications, 2014. 2. Core Java: An Integrated Approach, New: Includes All Versions up-to Java 8, by R. Nageswara Rao, Dream-Tech Publishers. 3. Head First Java, Kathy Sierra, 2nd edition, Shroff Publishers, 2012