Prasad.V.Potluri Siddhartha Institute of Technology, Kanuru,Vijayawada

Programming with JAVA

Course Code	19IT3405	**Year**	II	**Semester**	II
Course Category	PC	**Branch**	IT	**Course Type**	Theory
Credits	3	**L-T-P**	3-0-0	**Prerequisites**	C Language
Continuous Internal Evaluation :	30	**Semester End Evaluation:**	70	**Total Marks:**	100

Course Outcomes	
Upon Successful completion of course, the student will be able to	
CO1	Illustrate the need, principles and basics of JAVA. (Understand)
CO2	Apply the knowledge of Java constructs to develop applications(Apply)
CO3	Analyze and the behavior of programs involving fundamental programming concepts in JAVA. (Analyze)
CO4	Apply object-oriented concepts to design, code and debug simple programs. (Apply)
CO5	Apply the use of Java in a variety of technologies and on different platforms. (Apply)

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (H:High, M: Medium, L:Low)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	2	2									2	2
CO2	2	2	2	2									2	2
CO3	2	2	2	2									2	2
CO4	2	2	2	2									2	2
CO5	2	2	2	2									2	2

Syllabus		
Unit No	**Contents**	**Mapped CO**
I	**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. **Classes, Objects and Methods:** Introduction, defining a class, declaring objects, assigning object reference variables, introducing methods, accessing class members, returning a value, constructors,	**CO1-CO5**

	parameterized constructors, this keyword, garbage collection, overloading constructors and methods, recursion, understanding static, introducing final, Using command line arguments.	
II	**Strings**: String, StringBuffer and StringTokenizer classes. **Basic I/O:** DataInputStream, DataOutputStream, BufferedReader, InputStreamReader, 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. **Interfaces:** Introduction, defining an interface, implementing interfaces. Accessing interfaces through interface references, nested interfaces, variables in interfaces, interfaces can be extended.	**CO1-CO5**
III	**Package:** Defining a package, CLASSPATH, Packages and member access, importing packages. **Exception Handling:** Fundamentals, types, uncaught exceptions, using try and catch, multiple catch clauses, nested try statement, throw, throws, finally, built-in exceptions, creating your own exception subclasses. **Multi Threaded programming:** Thread model, Creating a Thread: implementing runnable, extending Thread, creating multiple threads, using isAlive() and join(), Thread Priorities, synchronization.	**CO1-CO5**
IV	**Event handling:** Event handling mechanisms, delegation event model, Event classes, sources of events, event listener interfaces, Handling mouse and keyboard events, adapter classes, inner class. **Graphics Programming with AWT**: Introduction, abstract window toolkit classes, Window fundamentals. **AWT controls:** AWT Control fundamentals - labels, buttons, check boxes, choice lists, lists, scroll bars, text field, text area, layout managers	**CO1-CO5**
V	**Swing:** Origins, key features, MVC connection, Components and Containers **Exploring Swing**- JLabel, JTextField, JButton, JCheckBox, JRadioButton, JList, JComboBox. **Applets:** Two types of Applets, The Applet Class, Applet Architecture, An Applet Skelton, Swing Applets.	**CO1-CO5**

Learning Recourses
Text Books
The Java Complete Reference, Herbert Scheldt, 10/e, TMH Publications, 2018.
References
1. E. Balagurusamy, Programming with JAVA, 2/e, 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. Kathy Sierra, Head First Java, 2/e, Shroff Publishers, 2012.
E-Recourses and other Digital Material

1. https://nptel.ac.in/courses/106/105/106105191/
2. https://www.w3schools.com/java/java_intro.asp
3. https://www.tutorialspoint.com/java/index.htm