Dr. Ambedkar Institute of Technology, Bengaluru-56

Department of Computer Science &EngineeringSchemeand Syllabus-NEP – 2022 -2023

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| CourseTitle | **JAVA PROGRAMMING(Practical Based Learning)** | | | | | | |
| CourseCode | **21CSL4084** | | | | | | |
| Category | **Ability Enhancement Course(AEC)** | | | | | | |
| Scheme andCredits | No.of Hours/Week | | | | | Total teachinghours | Credits |
| L | T | P | SS | Total |
| **0** | 00 | **02** | 00 | **02** | **24** | **01** |
| **CIE Marks: 50** | **SEEMarks: 50** | | **TotalMax. marks=100** | | **DurationofSEE:02 Hours** | | |

**COURSE OBJECTIVES:**

* Understand the fundamental features of Object-Oriented Programming paradigm.
* To learn the usage of Inheritance, Interfaces and Handle Exceptions.
* Create multithreaded programs and Event handling mechanism.
* Create the Graphical User Interface using Applets and AWT.
* To Learn File I/O application.

**LIST OF JAVA PROGRAMS:**

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| **1** |  | Write a program to find smallest of three numbers using **Ternary Operator.** |
|  | Write a program for Arithmetic calculator using **switch case** menu |
| **2** |  | Create a Java class called Student with the following details as variables within it. **(i) USN (ii) Name (iii) Branch (iv) Phone**. Write a program to create n Student objects and print the USN, Name, Branch, and Phone of these objects with suitable headings. |
|  | Write a program to determine whether two Strings are the Anagram. |
| **3** |  | Write a program to perform the following function:Garbage collection.Runtime available processors.Runtime freeMemory and totalMemory available. |
|  | Write a program for **Bubble sort** of an element using **Arrays**. |
| **4** |  | Write a program for **Method overloading** and **Constructor overloading**. |
|  | Write a program to create an **abstract class** named shape that contains two integers and an empty method named printArea(). Provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends the class shape. Each one of the class contains only the method printArea() that print the area of the given shape. |
| **5** |  | Demonstrate with a program how **Multiple inheritance** can be achived in Java using **interface**. |
|  | Write a program for handling MultipleException. |
| **6.** | Write a program that implements a **Multi-threaded** application that has three threads. **First** thread generates a random integer for every 1 second; **second** thread computes the square of the number and prints; **third** thread will print the value of cube of the number. | |
| **7** | Create a program to display **Clock** using **Applet**. | |
| **8.** | Demonstrate with a program to handle **File operations** for the following:   1. **Creating a file** 2. **Writing into the file** 3. **Read from the file** 4. **Delete the file** | |

**COURSE OUTCOMES:**

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| **Course Outcomes** | **Description** | **RBT Levels** |
| **CO1** | Able to use Java compiler /IDE Eclipse platform to write and execute java program. | **L4** |
| **CO2** | Apply Object oriented features and Java concepts on real time applications. | **L5** |
| **CO3** | Able to apply the concept of multithreading and implement exception handling. | **L3** |
| **CO4** | Develop applications using Console I/O and File I/O,GUI applications | **L5** |

**CO-PO Mapping**

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| **CO-PO Mapping** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **P06** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |
| **CO1** | **3** | **3** | **2** | **1** | **3** |  |  |  |  |  |  | **1** |
| **CO2** | **3** | **3** | **2** | **1** | **3** |  |  |  |  |  |  | **1** |
| **CO3** | **3** | **3** | **2** | **1** | **3** |  |  |  |  |  |  | **1** |
| **CO4** | **3** | **3** | **3** | **1** | **2** |  |  |  |  |  |  | **2** |

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