



Faculty of: **Computer Science**

Course: **Bachelor of Computer Applications**

Semester: **III**

Subject Code: **4CS03ABJ1**

Subject Name: **Basics of Java**

Sr. No	Branch Code	Subject Code	Subject Name	Teaching hours/ Week			Credit hours	Credit Points	Evaluation Scheme/ Semester								
				Th	Tu	Pr			Theory				Practical				Total
									Internal Assessment		End Semester Exams		Internal Assessment		End Semester Exams		
									Marks	Duration	Marks	Duration	Marks	Duration	Marks	Duration	
2	2	4CS03ABJ1	Basics of Java	4	--	4	8	6	15(SE)	1Hr.	70	2½ Hrs.	50(IP)	1 ½ Hrs.	--	--	200
									15(CE)				50(CE)				

**AIM:**

- To develop proficiency in creating console-based application using core java concepts.
- To gain knowledge of pure Object-Oriented Programming (OOP) language concepts.
- To Implement simple GUI and event driven application.

### COURSE CONTENTS

**Unit I Introduction to Java language**

**05 Hrs.**

- Introduction of Java and history of java
- Java features/buzzwords
- Difference between Java & C, Java & C++
- JDK, JRE & JVM
- Editions of Java (J2SE, J2EE, J2ME)
- Java program structure
- Creating simple java program, Compiling and running it.
- Command line arguments

**Unit II Basics, decision making and looping statements**

**12 Hrs.**

- Java tokens
- Variables and constants
- Scope of variables
- Data types
- Operators
- Type casting
- Decision making statements
- Looping and jumping statements
- Arrays (one dimensional, two dimensional and jagged array)

**Unit III Introduction to classes, objects and methods**

**06 Hrs.**

- Introduction to class and object
- How to create fields and methods and how to access them using object
- Constructor
- Finalize method
- Static members

- Method overloading
- Visibility controls/access specifiers

#### **Unit IV Inheritance and interface**

**10 Hrs.**

- Inheritance and its types (Single, multilevel, hierarchical, multiple inheritances)
- Defining subclass
- Constructor in inheritance
- Super keyword
- Method overriding
- Use of final keyword with variable, method and class
- Abstract method and class
- Interface introduction, defining, extending and implementing interfaces
- Multiple inheritance using interface

#### **Unit V Packages: Putting classes together**

**03 Hrs.**

- Introduction to package
- Java API packages
- Creating, accessing and using user defined packages
- Adding class to package

#### **Unit VI Multithreading & Exception handling**

**12 Hrs**

- Introduction to thread and multithreading environment
- Thread life cycle
- Creating thread using Thread class and Runnable interface
- Thread priorities
- Various Thread methods like start(), stop(), yield(), start(), stop(), suspend(), resume(), wait(), notify()
- Introduction to error in program, types of errors (compile and runtime errors)
- Introduction to exception, common java exceptions
- Exception handling mechanism (using try... catch block)
- Multiple catch statements
- Finally statement
- Throw keyword
- Throwing user defined exception

#### **REFERENCE BOOKS:**

1. Programming with Java A Primer, Author: E. Balagurusamy, Published by Tata McGraw Hill, ISBN 978-0-07-061713-1
2. Java2 The Complete Reference, Author: Schildt, Published by Tata McGraw Hill, ISBN 0070495432