

AC –
Item No. –

As Per NEP 2020

**Tolani College of
Commerce
(Autonomous)**



Knowledge is Supreme

Title of the Course: Core Java

**Programme: B.Sc.(Information Technology)
Semester - IV**

Syllabus for 4 credits

From the academic year-2024-2025

Sr. No.	Heading	Particulars
1	Description of the course :	Core Java refers to the standard edition of the Java programming language, which includes the fundamental components and libraries necessary for general-purpose application development. It serves as the foundation for other editions of Java, such as Java EE (Enterprise Edition) and Java ME (Micro Edition).
2	Vertical :	Major
3	Type :	Theory and Practical
4	Credit:	4 credits
5	Hours Allotted :	60 Hours
6	Marks Allotted:	100 Marks Continuous Evaluation =40 Semester End =60
7	Course Objectives:	<ol style="list-style-type: none"> 1 To understand the basic concepts and fundamentals of platform independent object-oriented language. 2. To demonstrate skills in writing programs using exception handling techniques and multithreading. 3. To understand streams and efficient user interface design techniques. 4. AWT structure and demonstration.
8	Course Outcomes:	<ol style="list-style-type: none"> 1. Use the syntax and semantics of java programming language. 2. Develop reusable programs using the concepts of inheritance, polymorphism, interfaces and packages. 3. Apply the concepts of Multithreading and Exception handling to develop efficient and error free codes. 4. Design event driven GUI and web related applications which mimic the real word scenarios.

9	Modules:-
	Module 1: Introduction, Control flow statements, Iterations (15 hours)
	<ul style="list-style-type: none"> • History, architecture and its components, Java Class File, Java Runtime Environment, The Java Virtual Machine, JVM Components. • Data types: primitive data types, Object Reference Types, Strings, Auto boxing, operators and properties of operators, Arithmetic operators, assignment operators, increment and decrement operator, relational operator, logical operator, bitwise operator, conditional Operator • Control flow statements: The If...Else If...Else Statement, TheSwitch...Case Statement • Iterations: The While Loop, The Do ... While Loop, The For Loop, The Foreach Loop, Labeled Statements, The Break And ContinueStatements, The Return Statement
	Module 2: Classes (15 hours)
	<ul style="list-style-type: none"> • Types of Classes, Scope Rules, Access Modifier, Instantiating Objects From A Class, Initializing The Class Object AndIts Attributes, Class Methods, Accessing A Method, Method Returning A Value, Method's Arguments, Method Overloading, • Constructors, this Instance, super Instance, Characteristics Of Members Of A Class, constants, this instance, static fields and methods of a class, garbage collection. • Inheritance, super keyword, Abstract Classes And Interfaces. • Abstract Methods, Interfaces, Abstract Class, Packages.
	Module 3: Arrays and collection, Multithreading, Exceptions, Byte stream (15 hours)
	<ul style="list-style-type: none"> • Two Dimensional Arrays, Multi-DimensionalArrays, Vectors, array list, stack, queue, priority queue, link list. • Thread control methods, thread life cycle, the main thread, creating a thread, extending the thread class. • Catching Java Exceptions, Catching Run-Time Exceptions, Handling Multiple Exceptions, The finally Clause, The throws Clause. • Reading console input, writing console output, reading file, writing file, writing binary data, reading binary data, gettingstarted with character streams, writing file, reading file.

Module 4: Abstract Window Toolkit:**(15 hours)**

- Window Fundamentals, Component, Container.
- Panel, Window, Frame, Canvas. Components – Labels, Buttons, Check Boxes, Radio Buttons, Choice Menus, Text Fields, Text, Scrolling List, Scrollbars, Panels, Frames,
- Swing.
- Layouts, Flow Layout, Grid Layout, Border Layout, Card Layout.

10**References:**

1. **Author:** Vaishali Shah, **Title:** Core Java 8 for Beginners, **Publisher:**SPD 1st,**Year:** 2015
2. **Author:** Herbert Scheldt ,**Title:** Java: The Complete Reference **Publisher:** McGraw Hill **Edition:**9th,**Year:**2014
3. **Author:** Joel Murach ,**Title:** Java with Net Beans, **Publisher:** Michael Urban, SPD **Edition:**1st,**Year:**2016

13**Internal Continuous Assessment: 40%****Semester End Examination : 60%****14****Continuous Evaluation through:**

Practical

Question Paper Pattern:

Scheme of Evaluation Pattern
Table 1A: Scheme of Continuous Evaluation (CE/Practical)
Scheme of Evaluation Pattern

Sub-components	Maximum Marks	Conditions for passing
Practical exam	30	a) A learner must be present for each of the sub-components. b) Combined passing criteria
Journal and Viva	10	
Total	40	

Table 1B: Scheme of Semester End Examination (SEE) Evaluation
Question Paper Pattern for Semester End Examination (SEE)
Maximum Marks: 60 **Duration: 2 Hrs.**
 Note: All questions are compulsory. Each question has an internal choice.

Question Number	Nature of Questions	Maximum Marks
1)	Attempt any 3	
a)		15
b)		
c)		
d)		
e)		
2)	Attempt any 3	
a)		15
b)		
c)		
d)		
e)		
3)	Attempt any 3	
k)		
l)		
m)		
n)		
o)		
4)	Attempt any 3	
a)		15
b)		
c)		
d)		
e)		