



SWARNANDHRA

COLLEGE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

Accredited by National Board of Accreditation, AICTE, New Delhi, Accredited by NAAC with "A" Grade – 3.32 CGPA, Recognized under 2(f) & 12(B) of UGC Act 1956, Approved by AICTE, New Delhi, Permanent Affiliation to JNTUK, Kakinada Seetharampuram, W.G.DT., Narsapur-534280, (Andhra Pradesh)

DEPARTMENT OF ARTIFICIAL INTELIGENCE AND

MACHINE LEARNING

TEACHING PLAN

Course Code	Course Title		Semester/ Regulation	Branch	Contact Periods /Week	Academic Year	Date of commencement of Semester	
20AD7J04	Object Oriented Programming through JAVA		VII / (R20)	AI&DS	5	2025-2026	09-06-2025	
S. No	COURSE OUTCOMES						Knowledge Level	
1	Evaluate default value of all primitive data type, Operations, Expressions, Control- flow, Strings						K3, K4	
2	Determine Class, Objects, Methods, Inheritance, Exception, Runtime Polymorphism, User defined Exception handling mechanism						K3	
3	Illustrating simple inheritance, multi-level inheritance, Exception handling mechanism.						K1, K5	
4	Construct Threads, Event Handling, implement packages, developing applets						K1, K5	
5	Students will learn to use Java's String methods and understand the differences between String, String Buffer, and StringBuilder for effective string manipulation						K2, K4, K5	
UNIT	Out Comes/ Bloom's Level	Topics No.	Topics/ Activity			Text Book/ Reference	Contact Hour	Delivery Method
Unit-I								
I	CO – 1	1.1.1	Object Oriented Programming Introduction			T1,R1	1	Chalk ,talk
		1.1.2	Writing Simple Java Programs			T1,R1	1	Chalk ,talk
		1.1.3	Elements or Tokens in Java,			T1,R2	1	Chalk ,talk
	Program Structure in Java	1.1.4	Java Statements, Command Line Arguments			T1,R2	1	Chalk ,talk
		1.1.5	User Input to Programs			T3,R1	1	Chalk ,talk
		1.1.6	Escape Sequences ,Comments, programming Style			T1,R2	1	Chalk ,talk
		1.2.1	Data Types, Variables, and Operators: Introduction, Data Types in Java,			T1,R2	1	Chalk ,talk
		1.2.2	Declaration of Variables, Type Casting,			T3,R1	1	Chalk ,talk



SWARNANDHRA

COLLEGE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

Accredited by National Board of Accreditation, AICTE, New Delhi, Accredited by NAAC with "A" Grade – 3.32 CGPA, Recognized under 2(f) & 12(B) of UGC Act 1956, Approved by AICTE, New Delhi, Permanent Affiliation to JNTUK, Kakinada Seetharampuram, W.G.DT., Narsapur-534280, (Andhra Pradesh)

		1.2.3	Scope of Variable, Literal Constants	T1,R1	1	Chalk ,talk
		1.2.4	Symbolic Constants, Formatted Output with printf() Method,	T1,R1	1	Chalk ,talk
		1.2.5	Static Variables and Methods	T1,R1	1	Chalk ,talk
		1.2.6	Attribute Final	T1,R1	1	Chalk ,talk
		1.2.7	Introduction to Operators, Types of operators,	T1,R2	1	Chalk ,talk
		1.2.8	Assignment Operator (=), Basic Arithmetic Operators, Precedence and Associativity of Operators,	T2,R1	1	Chalk ,talk
		1.2.9	Increment (++) and Decrement (--) Operators,.	T2,R1	1	Chalk ,talk
		1.3.0	Ternary Operator, Relational Operators, Boolean Logical Operators, Bitwise Logical Operators	T2,R1	2	Chalk ,talk
		1.3.1	Control Statements: Introduction, if Expression, Nested if Expressions, if-else Expressions,	T1,R2	1	Chalk ,talk
		1.3.2	Ternary Operator ? : , Switch Statement,	T3,R1	1	Chalk ,talk
		1.3.3	Iteration Statements, while Expression, do-while Loop,	T1,R2	1	Chalk ,talk
		1.3.4	for Loop, Nested for Loop, For-Each Loop, Break Statement, Continue Statement	T2,R1	1	Chalk ,talk
				Total	21	
Unit-II						
II	CO - 2	2.1.1	Classes and Objects: Introduction, Class Declaration and Modifiers, Class Members,	T1,R2	1	Chalk ,talk
	Implement object-oriented programming principles using Java	2.1.2	Declaration of Class Objects, Assigning One Object to Another,	T2,R1	1	Chalk ,talk
		2.1.3	Access Control for Class Members, Accessing Private Members of class	T1,R2	1	Chalk ,talk
		2.1.4	Constructor Methods for Class,	T3,R1	1	Chalk ,talk
		2.1.5	Overloaded Constructor Methods,	T1,R2	1	Chalk ,talk
		2.1.6	Nested Classes, Final Class and Methods,	T2,R1	1	Chalk ,talk
		2.1.7	Passing Arguments by Value and by Reference,	T1,R2	1	Chalk ,talk
		2.1.8	Keyword this, Methods: Introduction, Defining Methods	T3,R1	1	Chalk ,talk
		2.2.1	Overloaded Methods, Overloaded Constructor Methods, Class Objects as Parameters in Methods,	T2,R1	2	Chalk ,talk



SWARNANDHRA

COLLEGE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

Accredited by National Board of Accreditation, AICTE, New Delhi, Accredited by NAAC with "A" Grade – 3.32 CGPA, Recognized under 2(f) & 12(B) of UGC Act 1956, Approved by AICTE, New Delhi, Permanent Affiliation to JNTUK, Kakinada Seetharampuram, W.G.DT., Narsapur-534280, (Andhra Pradesh)

		2.2.2	Access Control, Recursive Methods,	T2,R1	1	Chalk ,talk
		2.2.3	Nesting of Methods, Overriding Methods,	T1,R2	1	Chalk ,talk
		2.2.4	Attributes Final and Static.	T3,R1	1	Chalk ,talk
				Total	13	
Unit-III						
III	CO – 3	3.1.1	Arrays: Introduction, Declaration and Initialization of Arrays,	T1,R2	1	Chalk ,talk
	Arrays/ Inheritance / Interfaces	3.1.2	Storage of Array in Computer Memory, Accessing Elements of Arrays,	T2,R1	1	Chalk ,talk
		3.1.3	Operations on Array Elements, Assigning Array to Another Array,	T1,R2	1	Chalk ,talk
		3.1.4	Dynamic Change of Array Size, Sorting of Arrays	T3,R1	1	Chalk ,talk
		3.1.5	Search for Values in Arrays, Class Arrays, Two dimensional Arrays, Arrays of Varying Lengths, Three- dimensional Arrays, Arrays as Vectors.	T3,R1	1	Chalk ,talk
		3.2.1	Inheritance: Introduction, Process of Inheritance, Types of Inheritances,	T1,R2	1	Chalk ,talk
		3.2.2	Universal Super Class-Object Class, Inhibiting Inheritance of Class	T2,R1	1	Chalk ,talk
		3.2.3	Using Final, Access Control and Inheritance,	T1,R2	1	Chalk ,talk
		3.2.4	Multilevel Inheritance, Application of Keyword Super,	T3,R1	1	Chalk ,talk
		3.2.5	Constructor Method and Inheritance,	T1,R2	1	Chalk ,talk
		3.2.6	Method Overriding,	T2,R1	1	Chalk ,talk
		3.2.7	Dynamic Method Dispatch, Abstract Classes, Interfaces and Inheritance.	T1,R2	1	Chalk ,talk
		3.3.1	Interfaces: Introduction, Declaration of Interface, Implementation of Interface,	T1,R2	1	Chalk ,talk
		3.3.2	Multiple Interfaces, Nested Interfaces, Inheritance of Interfaces,	T2,R1	1	Chalk ,talk
		3.3.3	Default Methods in Interfaces, Static Methods in Interface,	T1,R2	1	Chalk ,talk
		3.3.4	Functional Interfaces, Annotations.	T3,R1	1	Chalk ,talk
				Total	16	
Unit-IV						
	CO – 4	4.1.1	Packages and Java Library: Introduction, Defining Package, Importing Packages and	T1,R2	2	Chalk ,talk



SWARNANDHRA

COLLEGE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

Accredited by National Board of Accreditation, AICTE, New Delhi, Accredited by NAAC with "A" Grade – 3.32 CGPA, Recognized under 2(f) & 12(B) of UGC Act 1956, Approved by AICTE, New Delhi, Permanent Affiliation to JNTUK, Kakinada Seetharampuram, W.G.DT., Narsapur-534280, (Andhra Pradesh)

IV	Packages and Java Library / Exception Handling		Classes into Programs, Path and Class Path,			
		4.1.2	Packages in Java SE, Java..lang Package and its Classes, Class Object,	T2,R1	1	Chalk ,talk
		4.1.3	Enumeration, class Math, Wrapper Classes,	T3,R1	2	Chalk ,talk
		4.1.4	Auto-boxing and Auto-unboxing, Java util Classes and Interfaces,	T1,R2	2	Chalk ,talk
		4.1.5	Formatter Class, Random Class,	T1,R1	1	Chalk ,talk
		4.1.6	Time Package, Class Instant (java.time. Instant), Formatting for Date/Time in Java,	T1,R2	1	Chalk ,talk
		4.2.1	Exception Handling: Introduction, Hierarchy of Standard Exception Classes,	T2,R1	1	Chalk ,talk
		4.2.2	Keywords throws and throw, try, catch, and finally Blocks	T1,R2	2	Chalk ,talk
		4.2.3	Multiple Catch Clauses, Class Throwable, Unchecked Exceptions, Checked Exceptions.	T3,R1	2	Chalk ,talk
		4.2.4	try-with-resources, Catching Subclass Exception, Custom Exceptions, Nested try and catch Blocks, Rethrowing exception, Throws Clause.	T3,R1	1	Chalk ,talk
				Total	15	
Unit-V						
V	CO-5	5.1.1	String Handling in Java: Introduction, Interface Char Sequence,	T1,R2	1	Chalk ,talk
	String Handling in Java	5.1.2	Class String, Methods for Extracting Characters from Strings,	T2,R1	1	Chalk ,talk
		5.1.3	Methods for Comparison of Strings, Methods for Modifying Strings	T1,R2	1	Chalk ,talk
		5.1.4	Methods for Searching Strings, Data Conversion and Miscellaneous Methods,		2	
		5.1.5	Class String Buffer.	T3,R1	2	Chalk ,talk
		5.1.6	Class String Builder	T3,R1	1	Chalk ,talk
				Total	9	
CUMULATIVE PROPOSED PERIODS				74		
Text Books:						
S.No	AUTHORS,BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION					
1	Anitha Seth, B.L.Juneja, JAVA one step ahead, First Edition, Oxford University Press, 2017.					
2	Herbert Schildt, Java:The complete Reference 8th edition, TMH.					
3	Hari Mohan Pandey, Java Programming by Pearson,Pearson India					



SWARNANDHRA

COLLEGE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

Accredited by National Board of Accreditation, AICTE, New Delhi, Accredited by
NAAC with "A" Grade – 3.32 CGPA, Recognized under 2(f) & 12(B) of UGC Act 1956,
Approved by AICTE, New Delhi, Permanent Affiliation to JNTUK, Kakinada
Seetharamapuram, W.G.DT., Narsapur-534280, (Andhra Pradesh)

Reference Books:

S.No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION
1	Y Daniel Liang, Introduction to Java programming, 7 th Edition, Pearson Education, 2009
2	Joel Murach, Murach's Java Programming

Web Details:

1	https://nptel.ac.in/courses/106/105/106105191/		
2.	https://www.w3schools.com/java/java_data_types.asp		
		Name	Signature with Date
i.	Faculty	Dr B Rama Krishna	BRK
ii.	Course Coordinator	Dr. G. Sudhakar	GS
iii.	Module Coordinator	Mr..K V N A S M PRASAD	T. Kumar 10/6.
iv.	Programme Coordinator	Dr. B. Rama Krishna	BRK

A. J. S.
Principal

PRINCIPAL
Swarnandhra College
Engineering & Technology
SEETHARAMAPURAM
NARSAPUR - 534 280, W.G.D

