DHANALAKSHMI SRINIVASAN ENGINEERING COLLEGE
(AUTONOMOUS)
(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)
Re-Accredited with 'A' Grade By NAAC, Accredited by TCS.
Accredited by NBA (AERO, CSE, IT & MECH)
Re-Accredited by NBA (BME, ECE, EEE)
PERAMBALUR - 621212.

COURSE PLAN (2025-2026)

Name of the Faculty Members				
Designation/Department	ASSISTANT PROFESSOR /IT			
Course Code/Name	U23ITT34/OBJECT ORIENTED PROGRAMMING			
Year/Section/Department	II / IT - B & C			
Credits Details	L:3	T:0	P:0	C:3
Total Contact Hours Required	45			

Syllabus:

UNIT-I INTRODUCTION TO OOP AND JAVA	**9**
Overview of OOP – Object oriented programming paradigms – Features of Object-Oriented Programming – Java Buzzwords – Overview of Java – Data Types, Variables and Arrays –Operators – Control Statements – Programming Structures in Java – Defining classes in Java –Constructors-Methods - Access specifiers - Static members- JavaDoc comments	
UNIT-II INHERITANCE, PACKAGES AND INTERFACES	**9**
Overloading Methods − Objects as Parameters − Returning Objects −Static, Nested and Inner Classes. Inheritance: Basics− Types of Inheritance -Super keyword -Method Overriding − Dynamic Method Dispatch −Abstract Classes − final with Inheritance. Packages and Interfaces: Packages −Packages and Member Access −Importing Packages − Interfaces.	
UNIT–III EXCEPTION HANDLING AND MULTITHREADING	**9**
Exception Handling basics − Multiple catch Clauses − Nested try Statements − Java′s Built-in Exceptions −User defined Exception. Multithreaded Programming: Java Thread Model−Creating a Thread and Multiple Threads − Priorities − Synchronization − Inter Thread Communication-Suspending −Resuming, and Stopping Threads −Multithreading. Wrappers − Auto boxing	
UNIT-IV I/O, GENERICS, STRING HANDLING	**9**
I/O Basics − Reading and Writing Console I/O − Reading and Writing Files. Generics: Generic Programming − Generic classes − Generic Methods − Bounded Types − Restrictions and Limitations. Strings: Basic String class, methods and String Buffer Class.	
UNIT-V JAVAFX EVENT HANDLING, CONTROLS AND COMPONENTS	**9**
JAVAFX Events and Controls: Event Basics − Handling Key and Mouse Events. Controls: Checkbox, Toggle Button − Radio Buttons − List View − Combo Box − Choice Box − Text Controls −Scroll Pane. Layouts − Flow Pane − HBox and VBox − Border Pane − Stack Pane − Grid Pane. Menus− Basics − Menu − Menu bars − Menu Item.	

TOTAL: 45 PERIODS

Objectives:

- To understand Object Oriented Programming concepts and basic characteristics of Java
- To understand Object Oriented Programming concepts and basics of Java programming language
- To know the principles of packages, inheritance and interfaces
- To develop a java application with threads and generics classes
- To define exceptions and use I/O streams
- To design and build Graphical User Interface Application using JAVAFX

Text Books:

T1: Herbert Schildt, "Java: The Complete Reference", 11 th Edition, McGraw Hill Education, New Delhi, 2019

T2**:** Herbert Schildt, "Introducing JavaFX 8 Programming", 1 st Edition, McGraw Hill Education, New Delhi, 2015

Reference Books:

1. Cay S. Horstmann, "Core Java Fundamentals", Volume 1, 11 th Edition, Prentice Hall, 2018.

Course Plan:

Topic No	Topic Name	Reference Detail	Page No	Teaching Methodology	No of periods required	Cumulative periods
UNITI	**OVERVIEW**					**(9)**
1.	Overview of OOP– Object oriented programming paradigms	T3	1.2	**BB**	1	1
2.	Features of Object Oriented Programming – Java Buzzwords	T3	1.2	**BB/ PPT**	1	2
3.	Overview of Java – Data Types, Variables and Arrays	T3	1.11	**BB/ PPT**	1	3
4.	Operators – Control Statements	T3	1.19	**BB/ PPT**	1	4
5.	Programming Structures in Java	T3	1.56	**BB/ PPT**	1	5
6.	Defining classes in Java	T3	1.56	**BB/ PPT**	1	6
7.	Constructors-Methods	T3	1.59	**BB/ PPT**	1	7
8.	Access specifiers -Static members	T3	1.63	**BB/ PPT**	1	8
9.	JavaDoc comments	T3	1.67	**BB/ PPT**	1	9
Outcome of Unit I: • Apply the concepts of classes and objects to solve simple problems						
UNITII						**(9)**
10.	Returning Objects –Static, Nested and Inner Classes	T1	161-170	**BB/ PPT**	1	10
11.	Inheritance: Basics– Types of Inheritance	T1	174-175	**BB/ PPT**	1	11
12.	Super keyword -Method Overriding	T1	180-183, 185-187	**BB/ PPT**	1	12
13.	Dynamic Method Dispatch	T1	184-185	**BB/ PPT**	1	13
14.	Abstract Classes–final with Inheritance	T1	196-200	**BB/ PPT**	1	14

15.	Packages and Interfaces	T1	200-208	**BB/ PPT**	1	15
16.	Packages – Packages and Member Access	T2	249-255, 258-260	**BB/ PPT**	1	16
17.	Importing Packages–Interfaces.	T2	204-210	**BB/ PPT**	1	17
18.	Overloading Methods – Objects as Parameters	T2	53-63	**BB/ PPT**	1	18

Outcome of UnitII:

- Develop programs using inheritance, packages and interfaces.

UNIT–III						**(9)**
19.	Exception Handling basics–Multiple catch Clauses	T1	207-208	**BB/ PPT**	1	19
20.	Nested try Statements–Java's Built-in Exceptions	T1	208-219	**BB/ PPT**	1	20
21.	User defined Exception. Multithreaded Programming	T1	220-225	**BB/ PPT**	2	22
22.	Java Thread Model– Creating a Thread and Multiple Threads	T2	566-568	**BB/ PPT**	1	23
23.	Priorities– Synchronization	T1	289-290	**BB/ PPT**	2	25
24.	Inter Thread Communication-Suspending	T1	290-293	**BB/ PPT**	2	27
25.	Resuming, and Stopping Threads	W2	-	**BB/ PPT**	1	28
26.	Multithreading. Wrappers–Auto boxing	T1	231-232	**BB/ PPT**	1	29

Outcome of Unit III:

- Make use of exception handling mechanisms and multithreaded model to solve realworld problems

UNIT -IV						**(9)**
27.	I/O Basics–Reading and Writing Console I/O	T1	232-244	**BB**	1	30
28.	Reading and Writing Files. Generics	T1	245-251	**BB/ PPT**	1	31
29.	Generics: Generic Programming	T2	734-735	**BB**	1	32
30.	Generic classes – Generic Methods	T2	613-618	**BB/ PPT**	1	33
31.	Bounded Types – Restrictions and Limitations	T2	618-629	**BB/ PPT**	1	34
32.	Basic String class	W2	-	**BB/ PPT**	1	35
33.	methods and String Buffer Class	T1	231-232	**BB/ PPT**	1	36

Outcome of Unit IV:

- Build Java applications with I/O packages, string classes, Collections and generics Concepts

UNIT-V						**(9)**
34	JAVAFX Events and Controls: Event Basics	T2	281-306	**BB/ PPT**	1	37
35.	Handling Key and Mouse Events	T2	294-321	**BB/ PPT**	1	38
36.	Checkbox ,Toggle Button	T2	323-340	**BB/ PPT**	1	39

37.	Toggle Button–Radio Buttons	T2	342-350	**BB**	1	40
38.	Radio Buttons–List View	T2	350-360	**BB/ PPT**	1	41
39.	Combo Box–Choice Box–Text Controls	T2	282-285, 368-400	**BB/ PPT**	1	42
40.	Scroll Pane .Layouts, Flow Pane – HBox and VBox	T2	377-400	**BB/ PPT**	1	43
41.	Border Pane–Stack Pane–Grid Pane. Menus	T2	385-391	**BB/ PPT**	1	44
42.	Basics–Menu – Menu bars – Menu Item.	T2	392-421	**BB/ PPT**	1	45

Outcome of Unit-V

- Integrate the concepts of event handling
- Integrate JavaFX components and controls for developing GUI based applications

Course Outcomes - Program Outcome Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	1	1	-	2	-	-	-	-	1	-	-	3	3
CO2	3	1	3	-	2	-	-	-	-	1	-	-	3	3
CO3	3	2	3	-	2	-	-	-	-	1	-	-	3	3
CO4	3	2	3	-	2	-	-	-	-	1	-	-	3	3
CO5	2	1	3	-	2	-	-	-	-	1	-	-	3	3
CO6	2	1	3	-	2	-	-	-	-	1	-	-	3	3
Avg	**2.67**	**1.33**	**2.67**	**-**	**2**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	3	3

[Levels of correlation: 3(High), 2(Medium), 1(Low)]

Content beyond Syllabus /Gap identification:

Assignment: 1

Register Number	Total Number	Mode of Assignment MCQ/Seminar/PPT	Topics
Assignment:1			
		Written	• Features of Object Oriented Programming – Java Buzzwords • Operators – Control Statements
Assignment:2			
		PPT	• Inheritance: Basics– Types of Inheritance • Packages and Interfaces
Assignment:3			
		Seminar	• Nested try Statements–Java's Built-in Exceptions • Inter Thread Communication-Suspending
Assignment:4			

		Case study Report/Mini Project/Model	• Bounded Types – Restrictions and Limitations • Reading and Writing Files. Generics
Assignment:5			
		Written/MCQ	• Toggle Button – Radio Buttons • Basics – Menu – Menu bars – Menu Item.

Submission Details:

Phase 1(Before AT 1)		Phase 2 (Before AT 2)		Phase 3 (Model)
Assignment 1	**Assignment 2**	**Assignment 3**	**Assignment 4**	**Assignment 5**

PLAN OF ASSESSMENT TEST –DISTRIBUTION OF MARKS:

TEST	CO- MARK WISE DISTRIBUTION						BLOOM'S LEVEL MARK WISE DISTRIBUTION					
AT-1	CO1	CO2	CO3	CO4	CO5	CO6	BTL1	BTL2	BTL3	BTL4	BTL5	BTL6
	37	23	--	--	--	--	21	23	16	--	--	--
AT-2	CO1	CO2	CO3	CO4	CO5	CO6	BTL1	BTL2	BTL3	BTL4	BTL5	BTL6
	--	--	37	23	--	--	--	--	--	--	--	--
MODEL	CO1	CO2	CO3	CO4	CO5	CO6	BTL1	BTL2	BTL3	BTL4	BTL5	BTL6
	20	20	20	20	20	--	--	--	--	--	--	--

Google Class Code Details:

Class Name: II IT-OOPS

Class Code: fsbteab

Prepared by

AP/IT

Verified By

HOD/IT

Approved By
Principal