

SEMESTER III

Course Code	USA20301J	Course Name	PROGRAMMING IN JAVA	Course Category	C	Professional Core	L	T	P	C
							4	0	4	6

Pre-requisite Courses	Nil	Co-requisite Courses	Nil	Progressive Courses	Nil
Course Offering Department	Computer science	Data Book / Codes/Standards	Nil		

Course Learning Rationale (CLR):		Learning			Program Learning Outcomes (PLO)														
<i>The purpose of learning this course is to:</i>		1	2	3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CLR-1 :	To understand the principles and concepts of Object Oriented Programming	Level of Thinking (Bloom)	Expected Proficiency (%)	Expected Attainment (%)	Fundamental Knowledge	Application of Concepts	Link with Related Disciplines	Procedural Knowledge	Skills in Specialization	Ability to Utilize Knowledge	Skills in Modeling	Analyze, Interpret Data	Investigative Skills	Problem Solving Skills	Communication Skills	Analytical Skills	ICT Skills	Professional Behavior	Life Long Learning
CLR-2 :	To learn how to extend Java classes with inheritance and dynamic binding.																		
CLR-3 :	To learn how to produce robust programs in Java using Exception Handling																		
CLR-4 :	To achieve parallelism using threading concepts																		
CLR-5 :	To understand the basics of Graphical User Interface Programming																		
CLR-6 :	To design and program stand-alone Java applications																		
Course Learning Outcomes (CLO):		At the end of this course, learners will be able to:																	
CLO-1 :	Use an integrated development environment to write, compile, run, and test simple object-oriented Java programs.	3	80	70	L	H	-	H	L	-	-	-	L	L	-	H	-	-	-
CLO-2 :	Read and make elementary modifications to Java programs that solve real-world problems.	3	85	75	M	H	L	M	L	-	-	-	M	L	-	H	-	-	-
CLO-3 :	Validate input in a Java program	3	75	70	M	H	M	H	L	-	-	-	M	L	-	H	-	-	-
CLO-4 :	Identify and fix defects and common security issues in code.	3	85	80	M	H	M	H	L	-	-	-	M	L	-	H	-	-	-
CLO-5 :	To design reading and writing files in Java.	3	85	75	H	H	M	H	L	-	-	-	M	L	-	H	-	-	-
CLO-6 :	To develop various applications like banking, Inventory, etc	3	80	70	L	H	M	H	L	-	-	-	L	L	-	H	-	-	-

Duration (Hour)	24	24	24	24	24
S-1	SLO-1	The Genesis of Java	Introducing classes	Inheritance Basics	Introduction to Java Thread model
					Introduction to Event Handling

	SLO-2	How java changed the internet	Class fundamentals	Understanding Types of Inheritance: Single, Multilevel, Hierarchical Inheritance	Creating a Thread by Extending Thread Class	Understanding ActionEvent&ItemEvent
S-2	SLO-1	Java's magic: Byte Code	Declaring Objects	How does java support multiple inheritance?	Creating a Thread by implementing Runnable Interface.	Understanding KeyEvent&MouseEvent
	SLO-2	Introduction to Java Buzzword	Assigning object Reference variables	using Super keyword	Thread Class	TextEvent, WindowEvent, ComponentEvent
S-3	SLO-1	Understanding Java Buzzwords - Simple, Object Oriented, Robust, Multithreaded, Architecture-Neutral, Interpreted and high performance, Distributed, Dynamic	Introducing method	What is Method Overriding?	Creating multiple threads	Introduction to Event Listener Interfaces
	SLO-2	Evolution of Java	What are Constructors? What are the Characteristics of constructors?	Understanding Dynamic method dispatch	Assigning Thread priorities	Working with ActionListener& AdjustmentListener
S-4	SLO-1	Introduction to Object Oriented Concepts of Java	Understanding Types of Constructors	Introduction to Abstract keyword	Applying Synchronization	Working with ContainerListener, ItemListener, ComponentListener
	SLO-2	Understanding Encapsulation, Polymorphism, Inheritance	Using this Keyword	Working with Abstract class and Method & Using final with inheritance,	Inter-thread communication	Working with KeyListener&MouseListener
S-5-8	SLO-1	Laboratory1: Learning to work with Java IDE and Writing Simple Conversion Programs	Laboratory 4: Classes and Objects	Laboratory 7: Inheritance, Method Overriding, Abstract classes and methods	Laboratory 10: Multithreading	Laboratory 13: Event Handling
	SLO-2					
S-9	SLO-1	Introduction to Lexical Issues of Java	Introduction to Garbage Collection	Introduction to Package	Introduction to Legacy Classes	Introduction AWT Controls
	SLO-2	Understanding Whitespaces, Identifiers, Literals Comments, Separators, Keywords	Using Finalize() method	Creating a Package	Working with Vector class	Working with Laboratoryel controls
S-10	SLO-1	Introduction to Data types of Java	Overloading methods	Understanding Access Protection	Examples using Vector class	Working with Buttons controls

	SLO-2	Understanding byte,short,int,long, float,double,chars,boolean	Overloading constructors	Importing packages	Understanding Stack class	Working with CheckBoxes
S-11	SLO-1	What is variable?, Declaring a variable, dynamic initialization of variables	Using objects as parameters	Introduction to Interfaces	Examples using Stack class	Working with CheckBoxGroup controls
	SLO-2	Scope and lifetime of variables	Argument Passing	Defining an interface	Introduction to Legacy Interfaces	Working with Choice controls controls
S-12	SLO-1	Introduction to Operators	Returning Objects	Implementing Interfaces	Understanding Enumeration Interface	Working with Lists controls
	SLO-2	Working with Arithmetic, Relational, Logical, Bitwise, Conditional, Assignment operators	Recursion	How Interfaces are extended?	Examples using Enumeration interface	Working with TextField controls
S 13-16	SLO-1	Laboratory2: Operators	Laboratory 4: Overloading Methods and Constructors, finalize() method	Laboratory 8: Packages and Interfaces	Laboratory 11: Legacy Classes and Interfaces	Laboratory 14: AWT Controls
	SLO-2					
S-17	SLO-1	What is Array?, Initialization of Arrays	Introducing Access Control	What is Exception?	Introduction to Utility classes	Introduction to Layout Manager
	SLO-2	Understanding Types of Arrays	Understanding Static variables and methods	Understanding Exception Types	Working with StringTokenizer	Understanding Flow Layout
S-18	SLO-1	Introduction to Control Statements	Understanding Final variables and methods	Introduction to Exception handling	Working with Date class	Understanding Border Layout
	SLO-2	Working with Selection Statements- All forms of if & Switch	Working with Nested Class	Working with try and catch	Working with Calendar	Understanding Grid Layout
S-19	SLO-1	Introduction to Iterative Statements	Understanding Inner Class	Using multiple catch clauses	Working with GregorianCalendar	Introduction to I/O Streams
	SLO-2	Working with while, do-while, for, for each statements	Introduction to String Class	Working with Finally, Throw and throws	Working with Random Class	Byte Streams classes
S-20	SLO-1	Introduction to Jump Statements	Working with String Handling Methods	Understanding Built-in Exceptions	Working with Scanner Class	Character Streams classes
	SLO-2	Working with break,	Command Line arguments	Creating user defined Exceptions	Examples using utility classes	Examples using Byte and Character

		continue and return statements				Streams
S 21- 24	SLO-1	Laboratory 3: Arrays, Control Statements	Laboratory 6: String Class, Command Line Arguments	Laboratory 9: Exception Handling	Laboratory 12: Utility Classes	Laboratory 15: Layout Managers, Byte and Character Streams
	SLO-2					

Learning Resources	1. Herbert Schildt, (2007), "Java: The Complete Reference", Seventh Edition, Tata McGraw publication 2. Arnold and J. Goslin, (2000), "The Java Programming Language", Second Edition, Addison Wesley
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Learning Assessment											
Bloom's Level of Thinking		Continous Learning Assessment(50% Weightage)								Final Examination (50% weightage)	
		CLA – 1 (10%)		CLA – 2 (10%)		CLA – 3 (20%)		CLA – 4# (10%)			
		Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice
Level 1	Remember	20%	20%	15%	15%	15%	15%	15%	15%	15%	15%
	Understand										
Level 2	Apply	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
	Analyze										
Level 3	Evaluate	10%	10%	15%	15%	15%	15%	15%	15%	15%	15%
	Create										
	Total	100 %		100 %		100 %		100 %		100%	

Course Designers		
Experts from Industry	Experts from Higher Technical Institutions	Internal Experts
Mr. S. Karthik, IT Analyst, Tata Consultancy Services	Dr. Neelanarayanan,, Professor, School of Computer Science and Engineering, VIT Chennai	Mrs.E.Sweety Bakyarani
		Dr.G.Kalpana