Rajarshi Shahu Mahavidyalaya (Autonomous), Latur Department of Computer Science

Teaching Plan (Semester-III,V)

(July-2021 to Dec-2021)

Name of the Teacher: Ms. Latoriya Pooja S

1. Details of Classes to be taught

Sr. No.	Class	Subject	Course code and title	Total
				Lectures
1	B. Sc. SY	Computer Science	Operating System	45
			U-COS-343	
2	B. Voc. SY	Computer	Operating System	60
		Technology	U-OPS-427	
3	B. Voc. TY	Computer	Logical Reasoning and	
		Technology	Personality	60
			Development	
			U-LPD-658	
4	B. Voc. TY	Computer	Kotlin Programming	60
		Technology	U-KPR-662	

Course: Operating System (B. Voc. -SY)

Sr.	Unit and Chapter to be	Expected	Date	Academic	No. of Test /
No.	covered	No. of		activities to	Assignment with
		Lectures		be organized	topic and date
1	Unit I Introduction to				
1	Operating System		0F 07 2021		
	What is an operating	08	05.07.2021 to	PPT	
	system? History of operating		20.07.2021	representation	
	system, Computer hardware & software, Different			for	
	operating systems			Introduction of introduction	
	Various System Software			of Operating	
	associated with Operating	07	22.07.2021	System	
	Systems, Shell and Kernel,		to		
	Systems Calls and their types and implementation		04.08.2021		
2	Unit II Process & Thread Management				
	Processes, PCB, Process States, Threads & TCB, difference and Similarities in Threads and Process Inter- process communication, CPU scheduling, IPC problems. Process Synchronization &	05	05.08.2021 to 12.08.2021	PPT representation for Process and Thread management	Unit Test-I
	deadlocks	05	16.08.2021		
	Critical Section Problems &Semaphores, Classical Problems of process Synchronization		To 23.08.2021		
	Introduction to deadlocks,				

Deadlock detection and recovery, Deadlock avoidance, Deadlock prevention, issues.	05	24.08.2021 To 31.08.2021			
3 Unit III Memory Management Address Spaces and Address Translation, Swapping & memory allocation Paging & Segmentation, Virtual Memory & Demand Paging, Page Replacement Algorithm, Thrashing	07	01.09.2021 To 15.10.2021 To 29.09.2021	PPT presentation for Memory Management Topic		
4 Unit IV File and Disk Management File Systems: Files, directories, file system & Directories implementation, file-system management and optimization, File Allocation Methods MS-DOS file system, UNIX V7 file system Disk Structure ,Disk Scheduling Algorithm (FCFS, RAID, Network Operating System, Real Time Operating System, Distributed Operating System	07	30.09.2021 To 13.10.2021 To 28.10.2021 O1.11.2021 To	PPT Presentation on File Management and Disk Management Used E-white Board for problem solving.	Activity Unit test-II	based
Revision		02.11.2021			

Course: Logical Reasoning and Personality Development (B. Voc-TY)

Sr.	Unit and Chapter to be	Expected	Date	Academic	No. of Test /
No.	covered	No. of Lectures		activities to be organized	Assignment with topic and date
	I HCF and LCM, Square Root and Cube Root, Average, Problem on Ages, Ratio and Proportion, Partnership, Percentage, Discount, Profit and Loss Problems on Trains, Time and Distance, Time and Work, Boats and Streams, Simple Interest, Compound Interest, Area, Surds and Indices, Volume and Surface Area, Seating arrangement, Blood Relations, Syllogisms and Venn Diagrams.	05	07.07.2021 To 15.07.2021 To 28.07.2021 29.07.2021 To 07.08.2021	PPT presentation for Aptitude and Using E-White Board for Solving the Mathematical Problems	
2	Unit II Quantitative Aptitude II and Logical Reasoning Permutation & Combination, Geometry & Mensuration, Selection and Conditionals, Mapping and best routes.	07	11.08.2021 To 21.08.2021	PPT presentation for Aptitude & Logical Reasoning concepts and Using E-White Board for Solving the Mathematical Problems	

3	Assumption and Binary Logic, Clock and Calendars, Puzzles, Data Sufficiency, Graph Related, Tables and Case lets, Trigonometry, Logarithms, and Sets Unit-III PERSONALITY	08	25.08.2021 To 04.09.2021		Unit Test - I
	Leadership, Self-Preparation and Communication Leadership: Introduction to Leadership, Leadership Power, Leadership Styles, Leadership in Administration. • Preparation of Self- Introduction • Body language • SWOT Analysis • Increasing vocabulary Introduction to Communication, Flow of Communication, Listening,	07	08.09.2021 To 23.09.2021	PPT presentation for Personality Development and Some Gestures Videos	
	Barriers of Communication, How to overcome barriers of communication Communication Skills and Listening Skills 1) Group Discussion 2) Debate 3)Extempore 4)Seminar 5) Effective presentations. Interview Skills	08	To 09.10.2021		
4	Unit IV Stress and Time Management and Motivation Stress: Introduction to Stress,			PPT Presentation and motivational Videos	

Causes of Stress, Impact	07	13.10.2021 To	
Management Stress,		22.10.2021	
Managing Stress, Building			
self-esteem and self-			Activity Based
confidence. Time: Time as a			Unit Test-II
Resource, Identify Important			
Time Management Wasters,			
Individual Time Management			
Styles, Techniques for better			
Time Management.		23.10.2021 To	
Motivation: Introduction to Motivation, Relevance and types of Motivation, Motivating the subordinates, Analysis of Motivation	08	02.11.2021	

Course: Kotlin Programming (B. Voc-TY)

		Date		No. of Test /
covered	No. of		activities to be	Assignment
	Lectures		organized	with topic and
				date
Unit I Introduction to Kotlin				
Introduction. Overview.				
Syntax, Architecture, Variable,				
Datatypes, Operator,	0 5	በ 5 በ7 2 በ21 ፕሬ		
Conditional statements, Loops,	0.5			
Enum. Array- Generic Array,		12.07.2021		
Arrays of Primitives, Create an				
Array, Create an array using				
closure, Create an uninitialized				
array.			PPT	
String- String Equality, String			presentation of	
Literals, Elements of string.			Kotlin	
Kotlin Application-Kotlin on	05	13.07.2021 To	Programming	
server side, Kotin on Android.		22.07.2021		
Functions- Definition,				
		26.07.2021 To		
		03.08.2021		
Dasic Lailibuas.				
Ranges- Integral types Ranges,				
downTo() function, step()				
function, until function				
	Unit I Introduction to Kotlin Introduction, Overview, Environment Setup, Basic Syntax, Architecture, Variable, Datatypes, Operator, Conditional statements, Loops, Enum. Array- Generic Array, Arrays of Primitives, Create an Array, Create an array using closure, Create an uninitialized array. String- String Equality, String Literals, Elements of string. Kotlin Application-Kotlin on server side, Kotin on Android. Functions- Definition, Recursive Function, Default and Named Argument, Higer order function, Inline function, Vararg parameter in function, Basic Lambdas. Ranges- Integral types Ranges, downTo() function, step()	Unit I Introduction to Kotlin Introduction, Overview, Environment Setup, Basic Syntax, Architecture, Variable, Datatypes, Operator, Conditional statements, Loops, Enum. Array- Generic Array, Arrays of Primitives, Create an Array, Create an array using closure, Create an uninitialized array. String- String Equality, String Literals, Elements of string. Kotlin Application-Kotlin on server side, Kotin on Android. Functions- Definition, Recursive Function, Default and Named Argument, Higer order function, Inline function, Vararg parameter in function, Basic Lambdas. 05 Ranges- Integral types Ranges, downTo() function, step()	Unit I Introduction to Kotlin Introduction, Overview, Environment Setup, Basic Syntax, Architecture, Variable, Datatypes, Operator, Conditional statements, Loops, Enum. Array- Generic Array, Arrays of Primitives, Create an Array, Create an array using closure, Create an uninitialized array. String- String Equality, String Literals, Elements of string. Kotlin Application-Kotlin on server side, Kotin on Android. Functions- Definition, Recursive Function, Default and Named Argument, Higer order function, Inline function, Vararg parameter in function, Basic Lambdas. Ranges- Integral types Ranges, downTo() function, step()	Unit I Introduction to Kotlin Introduction, Overview, Environment Setup, Basic Syntax, Architecture, Variable, Datatypes, Operator, Conditional statements, Loops, Enum. Array- Generic Array, Arrays of Primitives, Create an Array, Create an array using closure, Create an uninitialized array. String- String Equality, String Literals, Elements of string. Kotlin Application-Kotlin on server side, Kotin on Android. Functions- Definition, Recursive Function, Default and Named Argument, Higer order function, Inline function, Vararg parameter in function, Basic Lambdas. Ranges- Integral types Ranges, downTo() function, step()

2	Unit II Classes and Objects				
	Defining Class Hierarchies-Class, Visibility Modifiers, Inner and nested classes, Inheritance. Declaring a Class with nontrivial constructor or properties: Primary Constructor and initializer blocks, Secondary constructor, initializing the superclass in different ways, implementing properties declared in interfaces.	07	04.08.2021 To 23.08.2021	PPT presentation of Classes and Objects in Kotlin Programming.	Unit Test-I
	Compiler-generated methods: Universal object methods, Data Classes, Class Delegation. Declaring an instance- Object Declaration: Singleton Objects, Annotations	08	24.08.2021 To 07.09.2021		
3	Unit III Exception Handling and Null Safety Exception Handling: Introduction, try catch, Multiple catch Block, Nested try-catch block, finally Block, throw keyword Null Safety: Nullable Types and Non-Nullable Types, Smart	08	08.09.2021 To 14.09.2021	PPT presentation on Exceptional Handling and Null Safety	
	cast, Unsafe and Safe Cast Operator, Elvis Operator	07	15.09.2021 To 25.09.2021		
4	Why use Kotlin on android? Kotlin on Android, Setting up	08	27.09.2021 To 13.10.2021	PPT Presentation on Kotlin for Android	

kotlin for android, Using Kotlin			Activity based
in Android Studio		14.10.2021 To	Unit test-II
Auto-Generated Gradle		02.11.2021	
Configuration, Converting Java	07		
Code to Kotlin, APP #1: A TO-			
DO List app			

Course: Operating System (B. Sc.-SY)

Sr.	Unit and Chapter to be	Expected	Date	Academic	No. of Test /
No.	covered	No. of		activities to be	Assignment
		Lectures		organized	with topic and
					date
1	Unit-I Introduction and				
	Operating System				
	Organization				
	Introduction: System				
	Software, Resource				
	Abstraction, OS strategies.				
	Types of operating systems -	07	08.07.2021 To		
	Multiprogramming, Batch,		23.07.2021		
	Time Sharing, Single user				
	and Multiuser, Process			PPT	
	Control & Real Time			presentation of	
	Systems.			Operating	
	Operating System			System	
	Organization: Factors in				
	operating system design,		24072021 To		
	basic OS functions,	06	24.07.2021 To		
	implementation		07.08.2021		
	consideration, process				
	modes, and methods of				
	requesting system services –				
	system calls and system				
	programs.				

2	Unit II Process Management System view of the process and resources, initiating the OS, process address space, critical section, process abstraction, resource abstraction process hierarchy, Thread	06	12.08.2021 To 21.08.2021		Unit test-I
	model Scheduling: Scheduling Mechanisms, Strategy selection, non- preemptive and preemptive strategies, Deadlock	06	04.09.2021		
3	Unit III Memory Management: Mapping address space to memory space, memory allocation strategies, fixed partition, variable partition Paging, virtual memory, Demand Paged, Segment Memory Management.	05	09.09.2021 To 18.09.2021.04 To 30.09.2021	PPT presentation on Memory Management	
4	Unit IV Device and Information Management System Techniques for Device management, Device management characteristics, Channels and control units Device allocation consideration A simple file system, General model of a file system, Symbolic File System, Basic File System.	05	01.10.2021 To 09.10.2021 To 02.11.2021	PPT Presentation on Device and information management in operating system	Activity based Unit Test- II

Name & Signature
of Teacher
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HoD

Head

Dept. of Computer Science

Rajarshi Shahu Mahavidyalaya, Latur

PRINCIPAL.
Rajarshi Shahu Mahavidyalaya
(Autonomous), Latur

Rajarshi Shahu Mahavidyalaya (Autonomous), Latur Department of Computer Science

Teaching Plan (Semester-VI, IV)
(Dec-2021 to April-2022)

Name of the Teacher: Ms. Latoriya Pooja S.

1. Details of Classes to be taught:

Sr. No.	Class	Subject	Course code and	Total
			Title	Lectures
			Mathematical Foundation	
1.	B. Voc. (CT) FY	Computer Technology	(U-MAF-307)	60
			Android Application	
2.	B. Voc. (CT) TY	Computer Technology	Development using Kotlin	60
			(UADK-763)	
	M.Sc. (CS) FY	Computer Science	Numerical Methods	
3.			(P-NUM-126)	60
			Advanced Java	
4.	M.Sc. (CS) SY	Computer Science	Programming	60
			(U-AJP-428)	

Course: Android Application Development using Kotlin (B. Voc.-TY)

Sr.	Unit and Chapter to be	Expected	Date	Academic	No. of Test /
No.	covered	No. of		activities to	Assignment with
		Lectures		be	topic and date
				organized	
1	Unit I:Kotlin OOPs				
	Kotlin OOPs: Class and Object, Nested and Inner Class,	05	17.12.202 To 24.12.2021	Use of Black board and	
	Kotlin: Constructor ,Visibility Modifier,	10	25.12.2021 To	Projector Presentation	
	Kotlin Inheritance :Abstract Class, Kotlin Interface , Data Class, Sealed Class		10.01.2022		
2	Unit II Android Startup and kotlin Android			Use of Black board and	
	Install Android Studio, The Activity And The User Interface	05	11.01.2022 to 21.01.2022	Projector Presentation and Smart	
	Extract: Activity & UI Building The UI and a Calculator App	05	22.01.2022 to 29.01.2022	Board for graphical	Unit Test-I
	Extract: starting with A First App, Android Events	05	31.01.2022 to 07.02.2022	presentation	
3	Unit III Basic Controls and Layouts Basic Controls: Extract		08.02.2022		
	Basic Controls, Extract More Controls	07	To 21.02.2022	Use of Black board and Projector	
	Layout Containers: Extract Layouts – LinearLayout	08	22.02.2022 To	Projector Presentation	
	The Constraint Layout: Extract Bias & Chains		07.03.2022		

4	Unit IV:Menus and Other			Use of Black	
	Controls			board and	
		07	08.03.2022	Projector	
	Programming The UI:		To 21.03.2022	Presentation	Activity based
	Extract Programming the UI, Extract Layouts and Auto		21.03.2022	and Smart	
	naming Components,			Board for	Unit Test-II
				graphical	
			22.03.2022	presentation	
	Menus & The Action Bar,	08	То		
	Menus, Context & Popup,		04.04.2022		
	Spinners, Pickers				
5	Revision	06	05.04.2022		
			То		
			13.04.2022		

Course: Advance Java Programming (M.Sc. - SY)

Sr. No.	Unit and Chapter to be covered Unit I: Introduction and	Expected No. of Lectures	Date	Academic activities to be organized	No. of Test / Assignment with topic and date
	Object Oriented Programming Programming language Types and Paradigms, Computer Programming Hierarchy, How Computer Architecture Affects a Language?, Why Java? Flavors of Java, Java Designing Goal, Role of Java Programmer in Industry, Features of Java Language JVM -The heart of Java, Java's	05	17.12.2021 To 24.12.2021 To	Use of Black board and Projector Presentation and also the use of smart board for programming	
	Magic Byte code. Installing Java, Java Program Development, Java Source File Structure, Compilation, Executions Seminar Object Oriented Programming Class Fundamentals, Object & Object reference, Object Life time & Garbage Collection, Creating and Operating Objects,	05	30.12.2021 31.12.2021 01.01.2022 To 07.01.2022		

	The Idea behind Exception		12.02.2022	Also the use of	
		05	05.02.2022 To	and smart board.	
	Programming Exception Handling			Use of Black board	
	Thread and GUI				
3	Unit-III: Exception handling,				
	Seminar		04.02.2022		
	Convention For Packages.		03.02.2022		
	Setting for Packages, Naming		To		
	Defining Package, CLASSPATH		22.01.2022		
	Package as Access Protection,				
	and Interfaces in Packages,			Presentation	
	Package Organizing Classes	08		graphical presentation	
	Seminar			projector for the	
	Methods ,Use of "super"		21.01.2022	Also the use of	
	Overriding Super Class			and smart board.	
	Constructors in inheritance,			Use of Black board	Unit Test -I
	and Methods , Role of				
	Java, Inheriting Data members				
	in OOP, Types of Inheritance in	07	To 20.01.2022		
	Use and Benefits of Inheritance	07	10.01.2022		
	Inheritance and Packages				
2	Unit II: Extending Classes				
	Seminar		08.01.2022		
	Native Method.				
	Members, Finalize() Method,				
	Recursion, Dealing with Static				
	Method Overloading,				
	Argument Passing Mechanism ,				
	Interfaces Defining Methods,				
	Classes ,Abstract Class &				
	Inner Class &Anonymous				
	Modifiers, methods Nested,				
	code block, Access Control,				
	Constructor & initialization				

"Exceptions & Errors ,Types of Exception ,Control Flow In Exceptions, JVM reaction to Exceptions ,Use of try, catch, finally, throw, throws in Exception Handling ,In-built and User Defined Exceptions, Checked and Un-Checked Exceptions. Seminar	05	15.02.2022 To 23.02.2022	projector for the graphical presentation	
Thread: Understanding Threads, Needs of Multi-Threaded Programming, Thread Life-Cycle, Thread Priorities ,Synchronizing Threads, Inter Communication of Threads ,Critical Factor in Thread – Dead Locks GUI Programming Designing Graphical User Interfaces in Java, Components and Containers, Basics of Components, Using Containers, Layout Managers, AWT Components, Adding a Menu to Window, Extending GUI Features Using Swing Components, Java Utilities (java.util Package) The Collection Framework: Collections of Objects, Collection Types, Sets, Sequence, Map, Understanding Hashing, Use of Array List &Vector.nit-IV	05	25.02.2022 To 04.03.2022		
Seminar		05.03.2022		
4 Unit IV: Event Handling,			Use of Black board	
JDBC and Servlets			and smart board. Also the use of	
Event Handling Event-Driven Programming in			projector for the graphical	

Java, Event- Handling Process,			presentation	
Event-Handling Mechanism,			Presentation	
The Delegation Model of Event				
Handling, Event Classes, Event	0 E	07.03.2022		
Sources, Event Listeners,	05			
Adapter Classes as Helper		То		
Classes in Event Handling.		14.03.2022		
Seminar				
Database Programming using JDBC Introduction to JDBC, JDBC		15.03.2022		
Drivers & Architecture, CURD				
operation Using JDBC,	05	16.03.2022		
Connecting to non-	03	To 23.03.2022		
conventional Databases.				
Seminar		24.03.2022		
Java Server Technologies Servlet Web Application Basics,				Activity Based Unit Test-II
Architecture and challenges of				
Web Application, Introduction				
to servlet, Servlet life cycle,		25.03.2022 To		
Developing and Deploying	05	01.04.2022		
Servlets, Exploring				
Deployment, Descriptor				
(web.xml), Handling Request				
and Responses				
Seminar		04.04.2022		
Revision		05.04.2022		
		To 11.04.2022		
Final Seminar		12.04.2022		
		To 16.04.2022		

Course: Mathematical Foundation (CT.GE.203) (B. Voc.-FY)

Sr.	Unit and Chapter to be	Expected	Date	Academic	No. of Test /
No.	covered	No. of		activities to	Assignment with
		Lectures		be	topic and date
				organized	
1	Unit I: Set Theory Introduction, Definition of set, Representation of set, ε-notation, Types of sets, Equality of sets, Subset of set, Union of sets,	05	02.02.2022 To 09.02.2022 10.02.2022 To	Use of Black	
	Intersection of sets, Disjoint sets, Universal set, Complement of set, Difference of sets,		16.02.2022 17.02.2022 To 24.02.2022	board.	
	Venn diagram, Application of sets				
2	Unit II: Determinants Formation of	08	28.02.2022		
	determinants, Minors & Co-factors of the elements of the determinant,		To 10.03.2022	Use of Black board and	Unit Test-I
	Properties of determinant, Application of determinants in Business	07	14.03.2022 To 23.03.2022	Smart Board	
	problems				
3	Unit III :Vectors & Matrices Vectors, Matrices, Difference between matrices and determinants, Types of	05	24.03.2022 To 30.03.2022	Use of black	
	matrices, Equality of matrices, Matrix addition multiplication, Scalar multiplication, System Of Linear	05	31.03.2022 To 07.04.2022	board and Projector Presentation	

	Definition, Properties, Theorems, Problems, Binomial theorem, Independent term, Middle term, Theorems.	07	19.04.2022 To 25.04.2022 To 30.04.2022	Use of Black board	Activity based Unit Test-II
4	to business and economics, Application of matrix algebra input output analysis. Unit IV: Permutation and				
	Equations, Transpose, Adjoint, Inverse of a square matrix, Solution of linear equation by matrix method, Elementary transformation, Solution of linear equation by Gauss-Jordan Elimination method, Rank of matrix, Linear dependence & independence of vectors, Linear Combination, Application of matrices in solving problems relating	05	11.04.2022 To 18.04.2022		

Course: Numerical Methods (M.Sc. - FY)

Sr.	Unit and Chapter to be	Expected	Date	Academic	No. of Test /
No.	covered	No. of		activities to be	Assignment
		Lectures		organized	with topic
					and date
1	IInit I. Computor				
1	Unit I: Computer				
	Algebraic & Solution of				
	Algebraic equations	Λ.	03.02.2022		
	Computer Arithmetic:	05	To 09.02.2022		
	Floating Point				
	representation of Numbers,	~ -	10.02.2022		
	Arithmetic operation with	05	То	Use of White board	
	Normalized floating point,		16.02.2022		
	Solution of algebraic		4 7 00 000		
	equations: Bisection	05	17.02.2022 To		
	method, Method of false		23.02.2022		
	position,				
	Newton-Raphson Method,				
	Secant Method.				
2	Unit II: Interpolation and				
	Numerical Differentiation		240222		
	and Numerical Integration		24.02.2022 To		
	Finite differences [forward	05	03.03.2022		
	& backward], Lagrange	05	04.03.2022	Use of White board	Unit Test -I
	interpolation, Difference		То	for problems	
	tables, Numerical		10.03.2022	solving	
	differentiation & numerical	05	11.03.2022		
	integration, Trapezoidal		To To		
	rule, Simpson's 1/3 Rule,		17.03.2022		
	Simpson's 3/8 Rule.				

3	Unit-III: Matrices and linear system of equations Introduction, Solution of linear system, Matrix inversion method, Gaussian elimination method, Modification of gauss Method to compute the inverse.	05 05	19.03.2022 To 25.03.2022 To 31.03.2022 01.04.2022 To 08.04.2022	Use of white board	
4	Unit IV: Curve Fitting Least square Curve fitting, Fitting a straight line, Nonlinear curve, Fitting polynomial of nth degree.	08	09.04.2022 To 21.04.2022 To 30.04.2022	Use of white board	Activity Based Unit Test-II
5	Seminar		02.05.2022 To 05.05.2022		
6	Revision		06.05.2022 To 10.05.2022	Use of white board	

Name & Signature

of Teacher taring poojas.

HoD

Dept. of Computer Science
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