

# **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**

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

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

### 1. Summary of Lesson Plan

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

	Deadlock detection and recovery, Deadlock avoidance, Deadlock prevention, issues.	05	24.08.2021 To 31.08.2021		
3	<b>Unit III Memory Management</b>  Address Spaces and Address Translation, Swapping & memory allocation  Paging & Segmentation, Virtual Memory & Demand Paging, Page Replacement Algorithm, Thrashing	07       08	01.09.2021  To  14.09.2021    15.10.2021  To  29.09.2021	PPT presentation for Memory Management Topic	
4	<b>Unit IV File and Disk Management</b>  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  <b>Revision</b>	07       08       02	30.09.2021  To  13.10.2021    14.10.2021  To  28.10.2021   01.11.2021  To  02.11.2021	PPT Presentation on File Management and Disk Management       Used E-white Board for problem solving.	Activity based Unit test-II



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

## 1. Summary of Lesson Plan

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

## Course: Kotlin Programming (B. Voc-TY)

## 1. Summary of Lesson Plan

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2	<b>Unit II Classes and Objects</b>  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.  Compiler-generated methods: Universal object methods, Data Classes, Class Delegation. Declaring an instance- Object Declaration: Singleton Objects, Annotations	07	04.08.2021 To 23.08.2021	PPT presentation of Classes and Objects in Kotlin Programming.	Unit Test-I
		08	24.08.2021 To 07.09.2021		
3	<b>Unit III Exception Handling and Null Safety</b>  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 cast, Unsafe and Safe Cast Operator, Elvis Operator	08	08.09.2021 To 14.09.2021	PPT presentation on Exceptional Handling and Null Safety	
		07	15.09.2021 To 25.09.2021		
4	<b>Unit IV Kotlin for Android</b>  Why use Kotlin on android? Kotlin on Android, Setting up	08	27.09.2021 To 13.10.2021	PPT Presentation on Kotlin for Android	

	<p>kotlin for android, Using Kotlin in Android Studio</p> <p>Auto-Generated Gradle Configuration, Converting Java Code to Kotlin, APP #1: A TO-DO List app</p>	07	14.10.2021 To 02.11.2021		<p>Activity based</p> <p>Unit test-II</p>
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**Course: Operating System (B. Sc.-SY)**

## 1. Summary of Lesson Plan

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



2	<b>Unit II Process Management</b>  System view of the process and resources, initiating the OS, process address space, critical section, process abstraction, resource abstraction process hierarchy, Thread model Scheduling: Scheduling Mechanisms, Strategy selection, non-preemptive and preemptive strategies, Deadlock	06	12.08.2021 To 21.08.2021		Unit test-I
		06	26.08.2021 To 04.09.2021		
3	<b>Unit III Memory Management:</b> 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	PPT presentation on Memory Management	
		05	23.09.2021 To 30.09.2021		
4	<b>Unit IV Device and Information Management System</b>  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	PPT Presentation on Device and information management in operating system	Activity based Unit Test- II
		05	21.10.2021 To 02.11.2021		

**Name & Signature of Teacher**

Laturiya pojas

**HoD**

**Head**

**Dept. of Computer Science**  
Rajarshi Shahu Mahavidyalaya, Latur

**Principal**  
**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:**

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

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

### 2. Summary of Lesson Plan

Sr. No.	Unit and Chapter to be covered	Expected No. of Lectures	Date	Academic activities to be organized	No. of Test / Assignment with topic and date
1	<b>Unit I: Kotlin OOPs</b>  Kotlin OOPs: Class and Object, Nested and Inner Class,  Kotlin: Constructor ,Visibility Modifier,  Kotlin Inheritance :Abstract Class, Kotlin Interface , Data Class, Sealed Class	05    10	17.12.2021 To 24.12.2021   25.12.2021 To 10.01.2022	Use of Black board and Projector  Presentation	
2	<b>Unit II Android Startup and kotlin Android</b>  Install Android Studio, The Activity And The User Interface  Extract: Activity & UI Building The UI and a Calculator App  Extract: starting with A First App, Android Events	05  05  05	11.01.2022 to 21.01.2022  22.01.2022 to 29.01.2022  31.01.2022 to 07.02.2022	Use of Black board and Projector Presentation and Smart Board for graphical presentation	Unit Test-I
3	<b>Unit III Basic Controls and Layouts</b> <b>Basic Controls:</b> Extract Basic Controls, Extract More Controls <b>Layout Containers:</b> Extract Layouts – LinearLayout  <b>The Constraint Layout:</b> Extract Bias & Chains	07  08	08.02.2022 To 21.02.2022  22.02.2022 To 07.03.2022	Use of Black board and Projector Presentation	



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

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

### 2. Summary of Lesson Plan

Sr. No.	Unit and Chapter to be covered	Expected No. of Lectures	Date	Academic activities to be organized	No. of Test / Assignment with topic and date
1	<p><b>Unit I: Introduction and Object Oriented Programming</b></p> <p>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</p> <p>JVM –The heart of Java, Java’s Magic Byte code. Installing Java, Java Program Development, Java Source File Structure, Compilation, Executions</p> <p><b>Seminar</b></p> <p><b>Object Oriented Programming Class</b></p> <p>Fundamentals , Object &amp; Object reference , Object Life time &amp; Garbage Collection, Creating and Operating Objects ,</p>	<p>05</p> <p>05</p> <p>05</p>	<p>17.12.2021 To 24.12.2021</p> <p>25.12.2021 To 30.12.2021</p> <p>31.12.2021</p> <p>01.01.2022 To 07.01.2022</p>	<p>Use of Black board and Projector Presentation and also the use of smart board for programming</p>	

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



	<p>,Exceptions &amp; 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.</p> <p><b>Seminar</b></p> <p><b>Thread:</b> Understanding Threads, Needs of Multi-Threaded Programming, Thread Life-Cycle, Thread Priorities ,Synchronizing Threads, Inter Communication of Threads ,Critical Factor in Thread –Dead Locks</p> <p><b>GUI Programming</b> 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 &amp;Vector.nit-IV</p> <p><b>Seminar</b></p>	05	<p>15.02.2022 To 23.02.2022</p> <p>24.02.2022</p> <p>25.02.2022 To 04.03.2022</p> <p>05.03.2022</p>	projector for the graphical presentation	
4	<p><b>Unit IV: Event Handling, JDBC and Servlets</b></p> <p><b>Event Handling</b> Event-Driven Programming in</p>			Use of Black board and smart board. Also the use of projector for the graphical	

	<p>Java, Event- Handling Process, Event-Handling Mechanism, The Delegation Model of Event Handling, Event Classes, Event Sources, Event Listeners, Adapter Classes as Helper Classes in Event Handling.</p> <p><b>Seminar</b></p> <p><b>Database Programming using JDBC</b> Introduction to JDBC, JDBC Drivers &amp; Architecture, CURD operation Using JDBC, Connecting to non-conventional Databases.</p> <p><b>Seminar</b></p> <p><b>Java Server Technologies Servlet</b> Web Application Basics, Architecture and challenges of Web Application, Introduction to servlet, Servlet life cycle, Developing and Deploying Servlets, Exploring Deployment, Descriptor (web.xml), Handling Request and Responses</p> <p><b>Seminar</b></p> <p><b>Revision</b></p> <p><b>Final Seminar</b></p>	<p>05</p> <p>05</p> <p>05</p>	<p>07.03.2022 To 14.03.2022</p> <p>15.03.2022</p> <p>16.03.2022 To 23.03.2022</p> <p>24.03.2022</p> <p>25.03.2022 To 01.04.2022</p> <p>04.04.2022</p> <p>05.04.2022 To 11.04.2022</p> <p>12.04.2022 To 16.04.2022</p>	<p>presentation</p>	<p>Activity Based Unit Test-II</p>
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## Course: Mathematical Foundation (CT.GE.203) (B. Voc.-FY)

### 3. Summary of Lesson Plan

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



	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 to business and economics, Application of matrix algebra input output analysis.	05	11.04.2022 To 18.04.2022		
4	<b>Unit IV: Permutation and Combinations</b>  Definition, Properties, Theorems, Problems,  Binomial theorem, Independent term, Middle term, Theorems.	07          08	19.04.2022 To 25.04.2022   26.04.2022 To 30.04.2022	Use of Black board	Activity based Unit Test-II


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


### 3. Summary of Lesson Plan

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



3	<b>Unit-III: Matrices and linear system of equations</b> Introduction, Solution of linear system, Matrix inversion method, Gaussian elimination method, Modification of gauss Method to compute the inverse.	05  05  05	19.03.2022 To 25.03.2022  26.03.2022 To 31.03.2022 01.04.2022 To 08.04.2022	Use of white board	
4	<b>Unit IV: Curve Fitting</b> Least square Curve fitting, Fitting a straight line, Nonlinear curve, Fitting polynomial of nth degree.	08  07	09.04.2022 To 21.04.2022  22.04.2022 To 30.04.2022	Use of white board	Activity Based Unit Test-II
5	<b>Seminar</b>		02.05.2022 To 05.05.2022		
6	<b>Revision</b>		06.05.2022 To 10.05.2022	Use of white board	

  
**Name & Signature  
of Teacher**  
Laturiya pooja S.

  
**HoD  
Head**  
**Dept. of Computer Science**  
Rajarshi Shahu Mahavidyalaya, Latur

  
**Principal**  
**PRINCIPAL**  
Rajarshi Shahu Mahavidyalaya  
(Autonomous), Latur