

# Rajarshi Shahu Mahavidyalaya, (Autonomous), Latur

## Department of Computer Science

### Teaching Plan (Semester-IV,II )

(Dec-2021 to April-2022)

Name of the Teacher: Ms. Jadhav Sunita M.

#### 1. Details of Classes to be taught

Sr. No.	Class	Subject	Course code and title	Total Lectures
1	B. Sc. SY	Computer Science	U-COS-444 Digital Electronics and Microprocessor 8086	45
2	B. Voc. SY	Computer Technology	CT.SC.403 Data Structure and Algorithms	60
3	M. Sc. FY	Computer Science	M. Sc. CS CC-5 Compiler Design	60
4	B. Voc. FY	Computer Technology	CT.SC.PR.4 Web Development (Skill Component)	60

#### Course: Digital Electronics and Microprocessor 8086 (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	<b>UNIT – I Boolean Algebra And Gate Network</b>  Introduction with definitions of Logic gate, Truth table, Boolean	03	17/12/2021 to	Use of Black Board , Book,  Notes	

	<p>Equation, Logic symbol. Digital Signals</p> <p>Basic Gates and Derived Gates: AND, OR, NOT, NAND, NOR, Ex-OR, Ex- NOR</p> <p>Basic laws and rules of Boolean algebra, De-Morgan's theorem I &amp; II, Universal property of NAND gate &amp; NOR gate,</p> <p>Formats of logical equation SOP,POS, K-map examples for SOP and POS format</p>	<p>03</p> <p>05</p> <p>04</p>	<p>23/12/2021</p> <p>24/12/2021 to 30/12/2021</p> <p>01/01/2022 to 13/01/2022</p> <p>15/01/2022 to 22/01/2022</p>	<p>Use of Black Board, Book, Notes</p>	
2	<p><b>UNIT – II Logic Circuit</b></p> <p><b>Combinational Logic Circuit :</b> Adder and Subtractor -half Adder, full adder, half subtractor, full subtractor, Multiplexer and De-multiplexer with its application, Difference between mux and De-mux , Encoder and decoder with types.</p> <p><b>Sequential Logic Circuit :</b> Basics of Clock signal, Triggering methods Flip Flop with types SR flip-flop, D flip-flop, T flip-flop, JK flip flop , Shift Register with its types (SISO,SIPO,PISO,PIPO) Counter with types Asynchronous, Synchronous, Up, Down , Difference between synchronous and Asynchronous counter</p>	<p>05</p> <p>05</p>	<p>27/01/2022 to 04/02/2022</p> <p>05/02/2022 to 17/02/2022</p>	<p>Use of Black Board, Book, Notes</p>	<p>Unit Test-I</p>

3	<p><b>UNIT – III Control Unit And Memory</b></p> <p>General model of control unit, Hardwired control unit, Micro-programmed control unit</p> <p>Memory Characteristics, Memory Hierarchies, Classification of memory, Primary and Secondary memories, Virtual and Cache memory, High speed Memories: Interleaved and Associative memory</p>	03  07	18/02/2022 to 25/02/2022  26/02/2022 to 12/03/2022	Use of Black Board, Book, Notes	
4	<p><b>Unit – IV Introduction To Microprocessor 8086</b></p> <p>General Block Diagram of Microprocessor, History of microprocessor Features of Intel 8086, Architecture of Intel 8086,</p> <p>Functional Pin Diagram of Intel 8086 Pin description, Buses, Format of instruction, Addressing Modes of Intel 8086 Instruction set of Intel 8086,</p> <p>Assembly Language Programming of 8086</p>	04  04  02	17/03/2022 to 24/03/2022  25/03/2022 to 01/04/2022  07/04/2022 to 08/04/2022	Use of Black Board, Book, Notes	Unit test-II

**Course: Data Structure and Algorithms (B. Voc.-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 to Algorithms and Data Structures</b></p> <p><b>Analysis of Algorithms</b> Mathematical Background, Process of Analysis, Calculation of Storage Complexity, Calculation of Run Time Complexity</p> <p><b>Arrays</b> Arrays and Pointers, Sparse Matrices, Polynomials, Representation of Arrays, Row Major Representation, Column Major Representation, Applications, Array operations.</p>	<p>07</p> <p>08</p>	<p>20/12/2022 to 29/12/2022</p> <p>30/12/2022 to 12/01/2022</p>	<p>Use of White Board and black board for explaining algorithms</p>	
2	<p><b>Unit II – Link List, Stack and Queue</b></p> <p><b>Lists</b> Abstract Data Type-List, Array Implementation of Lists, Linked Lists-Implementation, Doubly Linked Lists-Implementation, Circularly Linked Lists-Implementation, Applications</p> <p><b>Stacks</b> Abstract Data Type-Stack, Implementation of Stack, Implementation of Stack using Arrays, Implementation of Stack using Linked Lists, Algorithmic Implementation of Multiple Stacks, Applications</p> <p><b>Queues</b> Abstract Data Type-Queue, Implementation of Queue, Array Implementation, Linked List Implementation, Implementation of Multiple Queues, Implementation of Circular Queues, Array Implementation, Linked List Implementation of a circular</p>	<p>04</p> <p>04</p> <p>07</p>	<p>13/01/2022 to 19/01/2022</p> <p>20/01/2022 to 27/01/2022</p> <p>31/01/2022 to 09/02/2022</p>	<p>Use of White Board for explaining data Structures</p>	<p>Unit Test-I</p>

	queue, Implementation of Deque, Array Implementation of a Deque				
3	<b>Unit III – Trees and Graph</b> <b>Trees</b> Abstract Data Type-Tree, Implementation of Tree, Tree Traversals, Binary Trees, Implementation of Binary Tree, Binary Tree Traversals, Recursive Implementation of Binary Tree Traversals, Non Recursive Implementations of Binary Tree Traversals, Applications  <b>Graphs</b> Definitions, Shortest Path Algorithms, Dijkstra's Algorithm, Graphs with Negative Edge costs, Acyclic Graphs, All Pairs Shortest Paths Algorithm, Minimum cost Spanning Trees, Kruskal's Algorithm, Prims's Algorithm, Applications, Breadth First Search, Depth First Search, Finding Strongly Connected Components	10           10	10/02/2022  to 28/02/2022    02/03/2022 to  17/03/2022	Use of White Board for explaining data Structures	
4	<b>Unit IV – Searching and Sorting</b>  <b>Searching</b> Linear Search, Binary Search, Applications  <b>Sorting</b> Selection Sort, Insertion Sort, Bubble Sort, Quick Sort, 2-way Merge Sort, Heap Sort	03      07	21/03/2022 to  24/03/2022    28/03/2022 to  06/04/2022	Use of White Board for explaining data Structures	Unit test-II

Name of the Teacher  
and Signature

Head of Department

Principal

# **Rajarshi Shahu Mahavidyalaya, (Autonomous), Latur**

## **Department of Computer Science**

### **Teaching Plan (Semester-I)**

**(Sept-2021 to Dec-2021)**

**Name of the Teacher: Ms. Jadhav Sunita M.**

#### **2. 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. FY	Computer Technology	CT.GE.102 Statistical Methods (General Education)	60
2	B. Voc. FY	Computer Technology	CT.SC.101 Basics of Computer Programming (Skill Component)	60
3	M. Sc. FY	Computer Science	M. Sc. CS-CC-2 Computer System Architecture	60

## Course: Statistical Methods (B. Voc. - FY)

### 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 Elementary statistic:</b> Introduction , classification of data, presentation of statistical data,  values of variable and frequency,  Cumulative frequency distribution,  Diagrammatic presentation of statistical data,  type of graphs, charts and diagrams, Histogram Bar chart, pie chart, frequency polygon, OGIVE</p>	<p>04</p> <p>04</p> <p>07</p>	<p>21/09/2021 to 27/09/2021</p> <p>28/09/2021 to 01/10/2021</p> <p>04/10/2021 to 13/10/2021</p>	<p>PPT representation on Introduction</p> <p>PPT representation on Histogram, Bar chart</p> <p>Assignment</p>	
2	<p><b>Unit-II Measures of central Tendency:</b>  Introduction, central tendency of data, mean, properties of arithmetic mean,  Short cut method of calculating A.M for discrete series,  Calculation of arithmetic mean for grouped frequency,</p>	<p>07</p>	<p>14/10/2021 to 26/10/2021</p>	<p>PPT representation on Central tendency of data</p> <p>Use of white board for problem solving</p>	

	<p>Distribution: continuous series,</p> <p>calculation of arithmetic mean from grouped frequency distribution with open end class,</p> <p>geometric mean, Harmonic mean,</p> <p>advantages and disadvantages of A.M, G.M and H.M. median quartiles deciles and percentiles, mode</p>	08	27/10/2021 to 11/11/2021	<p>Assignment</p> <p>PPT representation on advantages and disadvantages</p>	Unit Test-I
3	<p><b>Unit-III Measures of Dispersion:</b></p> <p>Introduction, Dispersion, Range, Mean deviation, standard Deviation, Relative measure of Dispersion,</p> <p>moments and measures of skewness and Kurtosis: Introduction, moments, skewness, Kurtosis</p>	07	15/11/2021 to 23/11/2021	<p>PPT presentation on deviation</p> <p>Use of white board for problem solving</p> <p>PPT presentation on skewness and kurtosis</p>	
		08	24/11/2021 to 05/12/2021		
4	<p><b>Unit-IV Correlation and Regression:</b></p> <p>Introduction, correlation, determination of correlation by Two-way frequency table, scatter diagram, co-variance method or Karl Pearson's method, Rank method, concurrent deviation method,</p> <p>properties of correlation, coefficient, regression equation of X on Y, Regression coefficients, properties of linear regression</p>	07	06/12/2021 to 14/12/2021	<p>PPT Presentation on correlation</p>	Unit test-II
		08	15/12/2021 To 28/12/2021	Assignment	



## Course: Basics of Computer Programming(B. Voc.-FY)

### 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: Algorithm, Flowchart &amp; Programming Basic:</b> Algorithm and flowcharts Definition and properties Developing well known algorithms</p> <p>Principles of flowcharting</p> <p>Flow charting symbols Converting algorithm to flowchart</p> <p><b>Programming Basic</b></p> <p>What is Programming?</p> <p>Tokens</p> <p>Data Type</p> <p>Variables</p> <p>Constants</p> <p>Operators</p>	05	21/09/2021 to 28/09/2021	PPT presentation on Algorithm and flowchart. Use of E-White Board for explaining algorithms and flowchart	
	<p>10</p> <p>01/10/2021 to 19/10/2021</p>	10	01/10/2021 to 19/10/2021	PPT presentation on Programming Basic	
2	<p><b>UNIT II: C Language Basic</b></p> <p>Introduction to C Introduction and History of C Formatted input and output Structure of C program Hello World Program</p> <p><b>Decision Making and Looping</b></p> <p>Decision making Statements: - simple if, if else, nested if else</p> <p>Switch Statement, Looping</p>	03	22/10/2021 to 25/10/2021	Use of E-White Board for explaining Structure of C program  Use of white board for programming	Unit-I

	<p>Statements: - for, while and do while break, continue</p> <p>Nested Loop Programs on above statements</p>	12	26/10/2021 to 15/11/2021	PPT presentation on if statement, switch statement, looping statements and Use of White Board for explaining programs	
3	<p><b>UNIT III : Array, String and Function</b></p> <p><b>Array and String</b></p> <p>Difference between Variable and Array</p> <p>Array Memory Structure</p> <p>One Dimensional Array</p> <p>Multi-Dimensional Array</p> <p>String</p> <p><b>Introduction to function</b> What is Function? Function Signature No Arguments and no return values, Arguments but no return values Arguments with return values</p>	06	16/11/2021 to 23/11/2021	PPT presentation on Array and Use of E-White Board for explaining programs	
		09	26/11/2021 to 06/12/2021	PPT presentation on Function and Use of E-White Board for explaining programs	
4	<p><b>UNIT IV : Pointer and Structure : Pointers</b></p> <p>Understanding pointers</p> <p>Declaring and initializing pointers</p> <p>Accessing a variable through pointers.</p> <p><b>Introduction to Structure</b></p> <p>Difference between Array and Structure : Structure Member</p> <p>Structure Variable Union</p> <p>Programs on Pointers Structure and Union</p>	05	07/12/2021 to 13/12/2021	PPT Presentation on Pointers and structure. Use of E-White Board for explaining programs	Unit test-II
		10	14/12/2021 to 28/12/2021		Quiz Competition on C programming

## Course: Computer System Architecture (M. Sc CS-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	<p><b>UNIT I:</b></p> <p><b>DESIGN METHODOLOGY AND PROCESSORS DESIGN</b></p> <p>Introduction to system modeling, Combinational and Sequential circuit design, Register level design,</p> <p>Processor level components, Queuing models, Simulation, Processor organization, Information representation,</p> <p>Instruction sets, Instruction format &amp; types, RISC, CICS processor concepts.</p>	03	27/09/2021 to 29/09/2021	PPT presentation on RISC,CISC	
		06	30/09/2021 to 07/10/2021		
		06	08/10/2021 to 14/10/2021		

2	<p><b>UNIT II: CONTROL UNIT AND MEMORY</b></p> <p>General model of control unit, Hardwired control unit, Micro-programmed control unit,</p> <p>Memory Characteristics, Memory Hierarchies, Classification chart of memory, Primary and Secondary memories, Virtual and Cache memory, High speed Memories: Interleaved and Associative memory.</p>	05	16/10/2021 to 21/10/2021	PPT presentation on classification of memories	Unit Test-I
3	<p><b>UNIT III: INTRODUCTION TO MICROPROCESSOR 8085</b></p> <p>Introduction to Microprocessor, History of Microprocessor, Buses, Format of instruction,</p> <p>Introduction to 8085 processor with Features, Architecture of Intel 8085, Functional Pin Diagram of Intel 8085, Pin description, Addressing Modes, Instruction set, Programming of 8085</p>	03	08/11/2021 to 10/11/2021	PPT presentation on architecture of Intel 8085	Seminar on dated 15/11/2021 16/11/2021 22/11/2021 23/11/2021 29/11/2021 30/11/2021
4	<p><b>UNIT – IV INTRODUCTION TO OTHER MICROPROCESSOR</b></p>			PPT presentation on architecture of Intel 8086	

<p>Features of Intel 8086,  Architecture of Intel 8086,  Functional Pin Diagram of Intel 8086,  Addressing Modes of Intel 8086,  Instruction set of Intel 8086,  Assembly Language  Programming of 8086,  Introduction to 80386  microprocessor,  Features of 80836,  Architecture of 80836.</p>	07	02/12/2021 to 11/12/2021		Seminar on dated 06/12/2021 07/12/2021 13/12/2021 14/12/2021 20/12/2021 21/12/2021
	08	15/12/2021 to 29/12/2021		27/12/2021 28/12/2021 Unit test-II

**Name of the Teacher  
and Signature**

**Head of Department**

**Principal**