

**Government Degree College Eturnagaram**

**Annual teaching plan**

**Academic year 2017-18**

**Name of Department: Computer Science**

**Name of the Faculty: K.Venkat reddy**

**Subject: Computer Science**

**Semester - 1.**

**Paper: 1 OOPS with C++**

<b>S.No</b>	<b>Title of the topic to be taught</b>	<b>Month</b>	<b>Number of periods Allotted</b>
1	<b>Unit I</b> Algorithm and its Characteristics, Pseudo Code / Flow chart, Programs Object Oriented programming , Generations of programming language, Program Paradigms, Features of OOP, Merits and Demerits of OOP Language. Basics of C++ Programming Introduction, History, Structure, Writing the first program. Files used in a c++ program Compiling and Executing , Using Commands , Keywords, Identifiers, data types ,variables , Constants, Input and Output statements ,Operators, type conversion type casting	August	15
2	<b>Unit II</b> <b>Functions:</b> Introduction Functions, Passing Data by Value, Reference Variables, Using Reference Variables as Parameters. I mine Functions, Default Arguments, and Overloading Functions. Passing Arrays to Functions. Object Oriented Programming: Procedural and Object-Oriented Programming. Terminology, Benefits, OOP Languages, and OOP Applications, Arrays: Introduction, Declaration, Accessing elements of Arrays. Storing values in array, calculating the length of the Array, One Dimensional Array for inter function communication , Two Dimensional Arrays , Multi	September	20

	dimensional Arrays Pointers: Defining Pointers, Pointer Variables, pointer Expression and Pointer Arithmetic, Null pointer.		
3	<b>Unit III</b> Structure, Union and Enumerated data types; Structure declaration and its members, Initialization Structure (Union), Accessing members of a Structure (Union). Array of Structures (Union). Structures verses Unions, Enumeration Types. Classes: Introduction, Defining an Instance of a Class, Separating Class Specification from Implementation, Inline Member Functions.	October	17
4	<b>Unit IV</b> Operator overloading and type conversion Scope of operator overloading, syntax for operator overloading , operator that can be not be overloaded, implementing operator overloading, overloading Unary operators, Overloading Binary operators. Inheritance And Runtime polymorphism, Defining Classes ,Access, Specifications, types of inheritance, Constructors, Passing Arguments to Constructors, Destructors, Overloading Constructors.	November	21
5	EXAMINATIONS	December	

**Semester - II**

**Paper: II Data Structures and File Processing**

S.No	Title of the topic to be taught	Month	Number of periods Allotted
1	<b>Unit I</b> Basic data Structure: Introduction to Data Structures, Types of Data Structures, and Introduction to Algorithms, Pseudo code, and Relationship among data, data structures, and algorithms, Implementation of data structures, Analysis of Algorithms. Stacks: Concept of Stacks and Queues, Stacks, Stack Abstract Data Type, Representation of Stacks Using Sequential Organization (Arrays), Multiple Stacks, Applications of Stack, Expression Evaluation and Conversion, Polish notation and expression conversion, Processing of Function Calls, Reversing a String with a Stack, Recursion. Memory Management: Garbage collection algorithms for equal sized blocks, storage allocation for objects with mixed size, buddy systems	January	15

2	<p><b>Unit II</b></p> <p>Recursion: Introduction, Recurrence, Use of Stack in Recursion, Variants of Recursion, Recursive Functions, Iteration versus Recursion.</p> <p>Queues: Concept of Queues, Queue as Abstract Data Type, Realization of Queues Using Arrays, Circular Queue, Multi-queues, Deque, Priority Queue, Applications of Queues,</p> <p>Linked Lists: Introduction, Linked List, Linked List Abstract Data Type, Linked List Variants, Doubly Linked List, Circular Linked List, Representation of Sparse Matrix Using Linked List, Linked Stack, Linked Queue, Generalized Linked List, More on Linked Lists.</p>	February	20
3	<p><b>Unit III</b></p> <p>Trees: Introduction, Types of Trees, Binary Tree, Binary Tree Abstract Data Type, Realization of a Binary Tree, Insertion of a Node in Binary Tree, Binary Tree Traversal, Other Tree Operations, Binary Search Tree, Threaded Binary Tree, Applications of Binary Trees.</p> <p>Searching and Sorting: Searching, Search Techniques, Sorting, Multiway Merge and Polyphase Merge, Comparison of All Sorting Methods, Search Trees: Symbol Table, Optimal Binary Search Tree, AVL Tree (Height-balanced Tree).</p>	March	17
4	<p><b>Unit IV</b></p> <p>Hashing: Introduction, Key Terms and Issues, Hash Functions, Collision Resolution Strategies, Hash Table Overflow, Extendible Hashing, Dictionary, Skip List, Comparison of Hashing and Skip Lists.</p> <p>Heaps: Basic Concepts, Implementation of Heap, Heap as Abstract Data Type, Heap Applications,</p> <p>Indexing and Multiway Trees: Introduction, Indexing, Types of Search Trees</p> <p>Files: Introduction, External Storage Devices, File Organization, Sequential File Organization, Direct Access File Organization, Indexed Sequential File Organization, Linked Organization.</p>	April	21
5	EXAMINATIONS	May	

S.No	Title of the topic to be taught	Month	Number of periods Allotted
1	<p><b>Unit - I</b>  Introduction: Database-System Applications, Purpose of Database Systems, View of Data, Database Languages, Relational Databases, Database Design, Data Storage and Querying, Transaction Management, Database Architecture, Database Users and Administrators.  Introduction to the Relational Model: Structure of Relational Databases, Database Schema, Keys, Schema Diagrams, Relational Query Languages, Relational Operations.</p>	August	15
2	<p><b>Unit - II</b>  Database Design and the E-R Model: Overview of the Design Process, The Entity- Relationship Model, Constraints, Removing Redundant Attributes in Entity Sets, Entity-Relationship Diagrams, Reduction to Relational Schemas, Entity-Relationship Design Issues, Extended E-R Features, Alternative Notations for Modeling Data, Other Aspects of Database Design.  Relational Database Design: Features of Good Relational Designs, Atomic Domains and First Normal Form, Decomposition Using Functional Dependencies, Functional- Dependency Theory, Decomposition Using Multivalued Dependencies, Normal Forms-2 NF, 3 NF, BCNF, The Database Design Methodology for Relational Databases</p>	September	20
3	<p><b>Unit - III</b>  Introduction to SQL: Overview of the SQL Query Language, SQL Data Definition, Basic Structure of SQL Queries, Additional Basic Operations, Set Operations, Null Values, Aggregate Functions, Nested Subqueries, Modification of the Database Intermediate SQL: Join Expressions, Views, Transactions, Integrity Constraints, SQL Data Types and Schemas, Authorization.  Advanced SQL: Accessing SQL from a Programming Language, Functions and Procedures, Triggers, Recursive Queries.</p>	October	17
4	<p><b>Unit - IV</b>  Transaction Management: Transaction Support–Properties of Transactions, Database Architecture, Concurrency Control–The Need for Concurrency Control, Serializability and Recoverability, Locking Methods, Deadlock, Time Stamping Methods, Multi-version Timestamp Ordering, Optimistic Techniques, Granularity of Data Items, Database Recovery–The Need for Recovery, Transactions and Recovery, Recovery Facilities, Recovery Techniques, Nested Transaction Model. Security: Database Security–Threats, Computer-Based Controls–Authorization, Access Controls, Views, Backup and Recovery, Integrity, Encryption, RAID.</p>	November	21

5	EXAMINATIONS	December	
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**Semester - II**

**Paper: IV Design and Analysis of Algorithms**

S.No	Title of the topic to be taught	Month	Number of periods Allotted
1	<p><b>Unit I</b></p> <p>Fundamentals of the Analysis of Algorithm Efficiency: The Analysis Framework, Asymptotic Notations and Basic Efficiency Classes.</p> <p>Divide-and-Conquer: maximum-subarray problem, Strassen's algorithm for matrix multiplication, The substitution method for solving recurrences, The recursion-tree method for solving recurrences, The master method for solving recurrences.</p> <p>Dynamic Programming: Rod cutting, Matrix-chain multiplication, Elements of dynamic programming, longest common subsequence, Optimal binary search trees. Greedy Algorithms: An activity-selection problem, Elements of the greedy strategy, Huffman codes, Matroids and greedy methods, task-scheduling problem as a matroid.</p>	January	15
2	<p><b>Unit II</b></p> <p>Searching and Sorting Techniques: Review of elementary sorting techniques-selection sort, Bubble sort, insertion sort, more sorting techniques-quick sort, heap sort, merge sort, shell sort, external sorting.</p> <p>Limitations of Algorithm: Lower-Bound Arguments, Decision Trees, P, NP, and NP-Complete Problems.</p> <p>Polynomials and the FFT: Representing polynomials, The DFT and FFT, Efficient FFT implementations.</p> <p>Number-Theoretic Algorithms: Elementary number-theoretic notions, Greatest common divisor(GCD), Modular arithmetic, Addition and Multiplication of two large numbers.</p>	February	20
3	<p><b>Unit III</b></p> <p>String Matching: The naive string-matching algorithm, The Rabin-Karp algorithm, String matching with finite automata, The Knuth-Morris-Pratt algorithm.</p> <p><b>NP-completeness:</b> Polynomial time, Polynomial time verification NP-Completeness and reducibility, NP-completeness Proofs, NP-Completeness problems</p> <p>Approximation Algorithms: The vertex-cover problem, The traveling-</p>	March	17

	salesman problem, The set-covering problem, Randomization and linear programming, The subset-sum problem.		
4	Unit IV Elementary Graph Algorithms: Representations of graphs, Breadth-first search, Depth-first search, Topological sort, strongly connected components. Minimum Spanning Trees: Growing a minimum spanning tree, the algorithms of Kruskal and Prim. Single-Source Shortest Paths: The Bellman-Ford algorithm, Single-source shortest paths in directed acyclic graphs, Dijkstra's algorithm, Difference constraints and shortest paths, Proofs of shortest-paths properties.	April	21
5	EXAMINATIONS	May	

**Semester - V**

**Paper: V- GUI**

<b>S.No</b>	<b>Title of the topic to be taught</b>	<b>Month</b>	<b>Number of periods Allotted</b>
1	Getting Started with Visual basics 6.0 Working with Controls Menus, Mouse-Events and dialog boxes	August	15
2	Graphics,MDI and fixed Grid Object Linking Objects and Classes	September	20
3	Working with Add – ins Files and File System Control ODBC and Data Access objects	October	17
4	Working with Active X data Objects Data Environment and Data Report	November	21
5	All about Active X Controls	December	21

6	Active Exe and Active DLL Active X Documents	January	17
7	Built In Active X controls Introducing Web Browser And DHTML	February	07

**Principal**

**IQAC coordinator**

**Lecturer**

**Government Degree College Eturnagaram**  
**Annual teaching plan**  
**Academic year 2018-19**

**Name of Department:** Computer Science

**Name of the Faculty:** K.Venkat reddy

**Subject:** Computer Science

**Semester - 1.**

**Paper: 1 OOPS with C++**

<b>S.No</b>	<b>Title of the topic to be taught</b>	<b>Month</b>	<b>Number of periods Allotted</b>
1	<b>Unit I</b> Algorithm and its Characteristics, Pseudo Code / Flow chart, Programs Object Oriented programming , Generations of programming language, Program Paradigms, Features of OOP, Merits and Demerits of OOP Language. Basics of C++ Programming Introduction, History, Structure, Writing the first program. Files used in a c++ program Compiling and Executing , Using Commands , Keywords, Identifiers, data types ,variables , Constants, Input and Output statements ,Operators, type conversion type casting	August	15
2	<b>Unit II</b> Functions: Introduction Functions, Passing Data by Value, Reference Variables, Using Reference Variables as Parameters. I mine Functions, Default Arguments, and Overloading Functions. Passing Arrays to Functions. Object Oriented Programming: Procedural and Object-Oriented Programming. Terminology, Benefits, OOP Languages, and OOP Applications.	September	20



	<p>Arrays: Introduction, Declaration, Accessing elements of Arrays. Storing values in array, calculating the length of the Array, One Dimensional Array for inter function communication , Two Dimensional Arrays , Multi dimensional Arrays</p> <p>Pointers: Defining Pointers, Pointer Variables, pointer Expression and Pointer Arithmetic, Null pointer.</p>		
3	<p><b>Unit III</b> Structure, Union and Enumerated data types; Structure declaration and its members, Initialization Structure (Union), Accessing members of a Structure (Union). Array of Structures (Union). Structures verses Unions, Enumeration Types.</p> <p>Classes: Introduction, Defining an Instance of a Class, Separating Class Specification from Implementation, Inline Member Functions.</p>	October	17
4	<p><b>Unit IV</b> Operator overloading and type conversion Scope of operator overloading, syntax for operator overloading , operator that can be not be overloaded, implementing operator overloading, overloading Unary operators, Overloading Binary operators.</p> <p>Inheritance And Runtime polymorphism, Defining Classes ,Access, Specifications, types of inheritance, Constructors, Passing Arguments to Constructors, Destructors, Overloading Constructors.</p>	November	21
5	EXAMINATIONS	December	

S.No	Title of the topic to be taught	Month	Number of periods Allotted
1	<p><b>Unit - I</b>            Introduction: Database-System Applications, Purpose of Database Systems, View of Data, Database Languages, Relational Databases, Database Design, Data Storage and Querying, Transaction Management, Database Architecture, Database Users and Administrators.            Introduction to the Relational Model: Structure of Relational Databases, Database Schema, Keys, Schema Diagrams, Relational Query Languages, Relational Operations.</p>	August	15
2	<p><b>Unit - II</b>            Database Design and the E-R Model: Overview of the Design Process, The Entity- Relationship Model, Constraints, Removing Redundant Attributes in Entity Sets, Entity-Relationship Diagrams, Reduction to Relational Schemas, Entity-Relationship Design Issues, Extended E-R Features, Alternative Notations for Modeling Data, Other Aspects of Database Design.            Relational Database Design: Features of Good Relational Designs, Atomic Domains and First Normal Form, Decomposition Using Functional Dependencies, Functional- Dependency Theory, Decomposition Using Multivalued Dependencies, Normal Forms-2 NF, 3 NF, BCNF, The Database Design Methodology for Relational Databases</p>	September	20
3	<p><b>Unit - III</b>            Introduction to SQL: Overview of the SQL Query Language, SQL Data Definition, Basic Structure of SQL Queries, Additional Basic Operations, Set Operations, Null Values, Aggregate Functions, Nested Subqueries, Modification of the Database Intermediate SQL: Join Expressions, Views, Transactions, Integrity Constraints, SQL Data Types and Schemas, Authorization.            Advanced SQL: Accessing SQL from a Programming Language, Functions and Procedures, Triggers, Recursive Queries.</p>	October	17

4	<b>Unit - IV</b> Transaction Management: Transaction Support– Properties of Transactions, Database Architecture, Concurrency Control–The Need for Concurrency Control, Serializability and Recoverability, Locking Methods, Deadlock, Time Stamping Methods, Multi-version Timestamp Ordering, Optimistic Techniques, Granularity of Data Items, Database Recovery–The Need for Recovery, Transactions and Recovery, Recovery Facilities, Recovery Techniques, Nested Transaction Model. Security: Database Security–Threats, Computer-Based Controls–Authorization, Access Controls, Views, Backup and Recovery, Integrity, Encryption, RAID.	November	21
5	<b>EXAMINATIONS</b>	December	

**Semester – V**

**Paper: V-Programming in Java**

<b>S.No</b>	<b>Title of the topic to be taught</b>	<b>Month</b>	<b>Number of periods Allotted</b>
1	<b>Unit I</b> Introduction: Java Essentials, JVM, Java Features, Creation and Execution of Programs, Data Types, Type Conversion, Casting, Conditional Statements, Loops, Branching Mechanism, Classes, Objects, Class Declaration, Creating Objects, Method Declaration and Invocation, Method Overloading,	August	5
2	<b>Unit II</b> Constructors – Parameterized Constructors, Constructor Overloading, Cleaning-up unused Objects. Class Variables & Method-static Keyword, this Keyword, One-Dimensional Arrays, Two-Dimensional Arrays, Command-Line Arguments, Inner Class. Inheritance: Introduction, Types of Inheritance, extends Keyword, Examples, Method Overriding, super, final Keyword, Abstract classes, Interfaces, Abstract Classes Verses Interfaces. Packages: Creating and Using Packages, Access	September	15

	Protection, Wrapper Classes, String Class, String Buffer Class		
<b>3</b>	<b>Unit III</b> Exception: Introduction, Types, Exception Handling Techniques, User-Defined Exception. Multithreading: Introduction, Main Thread and Creation of New Threads –By Inheriting the Thread Class or Implementing the Runnable Interface, Thread Lifecycle, Thread Priority and Synchronization.	<b>October</b>	<b>12</b>
<b>4</b>	<b>Unit IV</b> Applets: Introduction, Example, Life Cycle, Applet Class, Common Methods Used in Displaying the Output. Event Handling: Introduction, Types of Events, Example AWT: Introduction, Components, Containers, Button, Label, Checkbox, Radio Buttons, Container Class, Layouts. Swing: Introduction, Differences between Swing and AWT, JFrame, JApplet, JPanel, Components in Swings, Layout Managers, JTable, Dialog Box. Database Handling Using JDBC: Introduction, Types of JDBC Drivers, Load the Driver, Establish Connection, Create Statement, Execute Query, Iterate Resultset, Scrollable Resultset, Developing a JDBC Application.	<b>November</b>	<b>6</b>
<b>5</b>	<b>EXAMINATIONS</b>	<b>December</b>	

### Semester - V

### Paper: V-B Visual Programming

<b>S.No</b>	<b>Title of the topic to be taught</b>	<b>Month</b>	<b>Number of periods Allotted</b>
1	<b>Unit I</b> Introduction to VB: Writing windows application with VB, Programming languages -procedural, object oriented, event driven; VB Environment, Writing first VB project, compiling, debugging, and running the programs.	August	5

	Controls : Introduction to controls textboxes, frames, check boxes, option buttons, images, setting borders and styles, the shape control, the line control, working with multiple controls and their properties, designing the user interface, keyboard access, tab controls, default & cancel property, coding for controls.		
2	<p>Variables, constants, and Calculation: Data types, naming rules and conversion, constants-named and intrinsic, declaring variables, scope of variables, value function, arithmetic operations, formatting data Counting and accumulating Sums.</p> <p><b>Unit II</b></p> <p>Decisions and Conditions : If statement, Conditions comparing numeric variables and constants, comparing strings, compound conditions (and, or, not), nested if statements, using if statements with option buttons &amp; check boxes, displaying message in message box, input validation. Calling event procedures, debugging VB projects, Debugging Step-by-Step Tutorial. Modular programming: Menus, using common dialog box, writing general procedure.</p>	September	15
3	<p><b>Unit III</b></p> <p>Forms Handling: Multiple forms, creating, adding, removing forms, hide, show method, load, unload statement, me keyword, referring to objects on a different forms, Variables and constants in Multiple-Forms.</p> <p>Iteration Handling: Lists Boxes and Combo Boxes, Do/loops, for/next loops, using msgbox function, using string function</p> <p>Arrays: control Arrays, the case structure, single-dimension arrays, for Each/Next statement, table lookup, using list boxes with array, multi dimensional arrays.</p>	October	11
4	<p><b>Unit IV</b></p> <p>Database Connectivity: VB and database, using the data control, viewing a database file-step-by step, Navigating the Database in code, using list boxes and combo boxes</p>	November	6

	as data-bound controls, adding a lookup table and navigation-step-by-step, updating a database file, Record sets, working with database fields, creating a new Dynaset.		
5	<b>EXAMINATIONS</b>	December	

**Semester - VI.**

**Paper: Elements of Scripting Languages**

<b>S.No</b>	<b>Title of the topic to be taught</b>	<b>Month</b>	<b>Number of periods Allotted</b>
<b>1</b>	<b>Unit I :</b> HTML, Browsers and their types, URL's, web sites, Domain Names, static and dynamic sites and active web pages, Files Creation, Web Server, Web Client/Browser Hyper Text Markup Language, HTML Tags, Paired Tags, Commonly used HTML Commands Titles and Footers, Paragraph Breaks, Line Breaks, Heading Styles, Drawing Lines, Text Styles, Other Text Effects, Indenting Text, Lists, Types of Lists.	<b>January</b>	<b>20</b>
<b>2</b>	<b>Unit II</b> Using the Border attribute, Using the Width and Height Attribute, Using the Align Attribute, Tables - Header, Data rows, The Caption Tag, Attributes - Width and Border, BGCOLOR, COLSPAN, ROWSPAN, External Document References, Internal Document References, Images as Hyperlinks, Introduction to Frames, tag, <FRAME> tag. DHTML Introduction, use and its elements, Cascading Style Sheets – Introduction, Using Inline Styles, Sample Examples, Defining Your Own Styles, Properties in Values in Styles, A worked example	<b>February</b>	<b>22</b>
<b>3</b>	<b>Unit III</b> JavaScript, Advantages, JavaScript Syntax, Data Types and Literal, Type Casting, Variables, Incorporating variables in a Script, Array, Operators and Expressions, Arithmetic Operators, Logical Operators, Comparison Operators, String Operators, Assignment Operators, Conditional Expression, Ternary and Special Operators JavaScript Programming Constructs, If - then - else,	<b>March</b>	<b>22</b>

	Immediate If, For Loop, Built-in Functions, User Defined functions, Declaring functions, Place of Declaration, Passing Parameters, Variable Scope, Return Values, Recursive Functions, Placing text in a Browser, Dialog Boxes - Alert dialog box, Prompt dialog box, Confirm dialog box.		
<b>4</b>	<b>Unit IV</b> The Form Object, The Form Object's Methods, Text Element, Password Element, Button Element, Submit Button Element, Reset Button Element, Checkbox Element, Radio Element.	<b>April</b>	<b>4</b>
<b>5</b>	<b>EXAMINATIONS</b>	<b>May</b>	

**Semester – VI**

**Paper: VI-(B) - Operating Systems**

<b>S.No</b>	<b>Title of the topic to be taught</b>	<b>Month</b>	<b>Number of periods Allotted</b>
<b>1</b>	<b>Unit I</b> Introduction: Computer-System Architecture, Computing Environments. Operating-System Structures: Operating-System Services, User Interface for Operating-System, System Calls, Types of System Calls, Operating System Structure. Process Management: Process Concept, Process Scheduling, Operations on Processes, Inter process Communication, Examples– Producer-Consumer Problem.	<b>January</b>	<b>20</b>
<b>2</b>	<b>Unit II</b> CPU Scheduling: Concepts, Scheduling Criteria, Scheduling Algorithms. Process Synchronization: Critical-Section Problem, Peterson's Solution, Synchronization, Semaphores, Monitors. Deadlocks: System Model, Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery from Deadlock.	<b>February</b>	<b>22</b>

3	<b>Unit III</b> Main Memory: Introduction, Swapping, Contiguous Memory Allocation, Segmentation, Paging. Virtual Memory: Introduction, Demand Paging, Page Replacement, Allocation of Frames, Thrashing. <b>Unit IV</b> Mass-Storage Structure: Overview, Disk Scheduling, RAID Structure. File Systems: File Concept, Access Methods, Directory and Disk Structure, File-System Mounting.	<b>March</b>	<b>22</b>
4	Protection. File System Implementation, Directory Implementation, Allocation Methods, Free-Space Management	<b>April</b>	<b>4</b>
5	<b>EXAMINATIONS</b>	<b>May</b>	

Lecturer

IQAC coordinator

Principal



**Government Degree College Eturnagaram**

**Annual teaching plan**

**Academic year 2019-20**

**Name of Department:** Computer Science

**Name of the Faculty:** K.Venkat reddy

**Subject:** Computer Science

**Semester - 1. Paper: 1 – Programming in C**

<b>S.No</b>	<b>Title of the topic to be taught</b>	<b>Month</b>	<b>Number of periods Allotted</b>
1	<b>Unit I:</b> Introduction of Computers, Classification of Computers , Anatomy of a Computer , Memory Hierarchy, Introduction to OS , Operational overview of a CPU. Program Fundamentals: Generations and Classification of Programming languages, Compiling, Interpreting , Loading , Linking of a Program . Introduction to C language, Structure of a C program Comments, Program Statements, C Tokens. Keywords, Identifiers, Data Types, Variables. Constants. Operators and Expressions, Expression Evaluation—precedence and associativity, Type Conversions	September	15
2	<b>Unit II:</b> Input-Output: Non-formatted and Formatted Input and Output Functions. Escape Sequences. Control Statements: Selection Statements — if, if-else, nested if. nested if-else, comma operator, conditional operator. switch. Iterative Statements—while, for, do-while: Special Control Statement—go to, break, continue, return, exit. Arrays and Strings: One-dimensional Arrays, Character Arrays, Functions from ctype.h, string.h, Multidimensional Array's. <b>Unit III:</b>	October	12

	Functions: Concept of Function. Using Functions. Call-by-Value Vs Call-by-reference. Passing Arrays to Functions, Scope of Variables. Storage Classes. Inline Functions. and Recursion.		
3	<p>Pointers: introduction. Address of Operator (&amp;), Pointer. Uses of Pointers. Arrays and Pointers. Pointers and Strings, Pointers to Pointers. Array of Pointers, Pointer to Array. Dynamic memory Allocation.</p> <p><b>Unit— IV</b></p> <p>User-defined Data Types: Declaring a Structure (Union) and its members, Initialization Structure (Union), Accessing members of a Structure (Union). Array of Structures (Union). Structures verses Unions, Enumeration Types.</p> <p>Files: introduction, Using Files in C. Working with Text Files. working north Binary files. files of Records, Random Access to Files of Records. Other File management Functions.</p>	November	10
4	EXAMINATIONS	December	

## Semester - II.

## Paper: III -Data Base Management Systems

S.No	Title of the topic to be taught	Month	Number of periods Allotted
1	<p><b>Unit - I</b></p> <p>Introduction: Database-System Applications, Purpose of Database Systems, View of Data, Database Languages, Relational Databases, Database Design, Data Storage and Querying, Transaction Management, Database Architecture, Database Users and Administrators.</p> <p>Introduction to the Relational Model: Structure of Relational Databases, Database Schema, Keys, Schema Diagrams, Relational Query Languages, Relational Operations</p> <p><b>Unit - II</b></p> <p>Database Design and the E-R Model: Overview of the Design Process, The Entity- Relationship Model, Constraints, Removing Redundant Attributes in Entity</p>	September	15

	Sets, Entity-Relationship Diagrams, Reduction to Relational Schemas, Entity-Relationship Design Issues, Extended E-R Features, Alternative Notations for Modeling Data, Other Aspects of Database Design. Relational Database Design: Features of Good Relational Designs, Atomic Domains and First Normal Form,		
2	Decomposition Using Functional Dependencies, Functional- Dependency Theory, Decomposition Using Multi value Dependencies, Normal Forms-2 NF, 3 NF, BCNF, The Database Design Methodology for Relational Databases  <b>Unit - III</b> Introduction to SQL: Overview of the SQL Query Language, SQL Data Definition, Basic Structure of SQL Queries, Additional Basic Operations, Set Operations, Null Values, Aggregate Functions, Nested Sub queries, Modification of the Database Intermediate SQL: Join Expressions, Views, Transactions, Integrity Constraints, SQL Data Types and Schemas, Authorization. Advanced SQL: Accessing SQL from a Programming Language, Functions and Procedures, Triggers, Recursive Queries.	October	12
3	<b>Unit - IV</b> Transaction Management: Transaction Support– Properties of Transactions, Database Architecture, Concurrency Control–The Need for Concurrency Control, Serializability and Recoverability, Locking Methods, Deadlock, Time Stamping Methods, Multi-version Timestamp Ordering, Optimistic Techniques, Granularity of Data Items, Database Recovery–The Need for Recovery, Transactions and Recovery, Recovery Facilities, Recovery Techniques, Nested Transaction Model. Security: Database Security–Threats, Computer-Based Controls–Authorization, Access Controls, Views, Backup and Recovery, Integrity, Encryption, RAID.	November	16
4	<b>EXAMINATIONS</b>	December	

S.No	Title of the topic to be taught	Month	Number of periods Allotted
1	<p><b>Unit I</b> Introduction: Java Essentials, JVM, Java Features, Creation and Execution of Programs, Data Types, Type Conversion, Casting, Conditional Statements, Loops, Branching Mechanism, Classes, Objects, Class Declaration, Creating Objects, Method Declaration and Invocation, Method Overloading</p> <p><b>Unit II</b> Constructors – Parameterized Constructors, Constructor Overloading, Cleaning-up unused Objects. Class Variables &amp; Method-static Keyword, this Keyword, One-Dimensional Arrays, Two-Dimensional Arrays, Command-Line Arguments, Inner Class.</p>	September	19
2	<p>Inheritance: Introduction, Types of Inheritance, extends Keyword, Examples, Method Overriding, super, final Keyword, Abstract classes, Interfaces, Abstract Classes Verses Interfaces.</p> <p>Packages: Creating and Using Packages, Access Protection, Wrapper Classes, String Class, String Buffer Class</p> <p><b>Unit III</b> Exception: Introduction, Types, Exception Handling Techniques, User-Defined Exception.</p> <p>Multithreading: Introduction, Main Thread and Creation of New Threads –By Inheriting the Thread Class or Implementing the Run able Interface, Thread Lifecycle, Thread Priority and Synchronization.</p> <p>Input/output: Introduction, java.io Package, File Class, File Input Stream Class, File Output Stream Class, Scanner Class</p>	October	15

<b>3</b>	<b>Unit IV</b> Applets: Introduction, Example, Life Cycle, Applet Class, Common Methods Used in Displaying the Output. Event Handling: Introduction, Types of Events, Example	<b>November</b>	<b>12</b>
<b>4</b>	<b>EXAMINATIONS</b>	<b>December</b>	

**Semester - V**

**Paper: V-B Visual Programming**

<b>S.No</b>	<b>Title of the topic to be taught</b>	<b>Month</b>	<b>Number of periods Allotted</b>
1	<b>Unit I</b> Introduction to VB: Writing windows application with VB, Programming languages -procedural, object oriented, event driven; VB Environment, Writing first VB project, compiling, debugging, and running the programs. Controls : Introduction to controls textboxes, frames, check boxes, option buttons, images, setting borders and styles, the shape control, the line control, working with multiple controls and their properties, designing the user interface, keyboard access, tab controls, default & cancel property, coding for controls. Variables, constants, and Calculation: Data types, naming rules and conversion, constants-named and intrinsic, declaring variables, scope of variables, value function, arithmetic operations, formatting data Counting and accumulating Sums. check boxes, displaying message in message box, input validation. Calling event procedures, debugging VB projects, Debugging Step-by-Step Tutorial. Modular programming: Menus, using common dialog box, writing general procedure.	September	18

2	<p><b>Unit II</b> Decisions and Conditions : If statement, Conditions comparing numeric variables and constants, comparing strings, compound conditions (and, or, not), nested if statements, using if statements with option buttons &amp;</p> <p><b>Unit III</b> Forms Handling: Multiple forms, creating, adding, removing forms, hide, show method, load, unload statement, me keyword, referring to objects on a different forms, Variables and constants in Multiple-Forms.</p> <p>Iteration Handling: Lists Boxes and Combo Boxes, Do/loops, for/next loops, using msgbox function, using string function</p> <p>Arrays: control Arrays, the case structure, single-dimension arrays, for Each/Next statement, table lookup, using list boxes with array, multi dimensional arrays.</p>	October	15
3	<p><b>Unit IV</b></p> <p>Database Connectivity: VB and database, using the data control, viewing a database file-step-by step, Navigating the Database in code, using list boxes and combo boxes as data-bound controls, adding a lookup table and navigation-step-by-step, updating a database file, Record sets, working with database fields, creating a new Dynaset.</p>	November	10
4	<b>EXAMINATIONS</b>	December	

**Semester - VI.**

**Paper: Elements of Scripting Languages**

S.No	Title of the topic to be taught	Month	Number of periods Allotted
1	<p><b>Unit I :</b> HTML, Browsers and their types, URL's, web sites, Domain Names, static and dynamic sites and active web pages, Files Creation, Web Server, Web Client/Browser Hyper Text Markup Language, HTML Tags, Paired Tags,</p>	January	19

	Commonly used HTML Commands Titles and Footers, Paragraph Breaks, Line Breaks, Heading Styles, Drawing Lines, Text Styles, Other Text Effects, Indenting Text, Lists, Types of Lists.		
<b>2</b>	<p><b>Unit II</b></p> <p>Using the Border attribute, Using the Width and Height Attribute, Using the Align Attribute, Tables - Header, Data rows, The Caption Tag, Attributes - Width and Border, BGCOLOR, COLSPAN, ROWSPAN, External Document References, Internal Document References, Images as Hyperlinks, Introduction to Frames, tag, &lt;FRAME&gt; tag.</p> <p>DHTML Introduction, use and its elements, Cascading Style Sheets – Introduction, Using Inline Styles, Sample Examples, Defining Your Own Styles, Properties in Values in Styles, A worked example</p>	<b>February</b>	<b>18</b>
<b>3</b>	<p><b>Unit III</b></p> <p>JavaScript, Advantages, JavaScript Syntax, Data Types and Literal, Type Casting, Variables, Incorporating variables in a Script, Array, Operators and Expressions, Arithmetic Operators, Logical Operators, Comparison Operators, String Operators, Assignment Operators, Conditional Expression, Ternary and Special Operators JavaScript Programming Constructs, If - then - else, Immediate If, For Loop, Built-in Functions, User Defined functions, Declaring functions, Place of Declaration, Passing Parameters, Variable Scope, Return Values, Recursive Functions, Placing text in a Browser, Dialog Boxes - Alert dialog box, Prompt dialog box, Confirm dialog box.</p>	<b>March</b>	<b>10</b>

S.No	Title of the topic to be taught	Month	Number of periods Allotted
1	<p><b>Unit I</b> Introduction: Computer-System Architecture, Computing Environments. Operating-System Structures: Operating-System Services, User Interface for Operating-System, System Calls, Types of System Calls, Operating System Structure. Process Management: Process Concept, Process Scheduling, Operations on Processes, Inter process Communication, Examples– Producer-Consumer Problem.</p>	January	20
2	<p><b>Unit II</b> CPU Scheduling: Concepts, Scheduling Criteria, Scheduling Algorithms. Process Synchronization: Critical-Section Problem, Peterson’s Solution, Synchronization, Semaphores, Monitors. Deadlocks: System Model, Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery from Deadlock.</p>	February	22
3	<p><b>Unit III</b> Main Memory: Introduction, Swapping, Contiguous Memory Allocation, Segmentation, Paging. Virtual Memory: Introduction, Demand Paging, Page Replacement, Allocation of Frames, Thrashing. <b>Unit IV</b> Mass-Storage Structure: Overview, Disk Scheduling, RAID Structure. File Systems: File Concept, Access Methods, Directory and Disk Structure, File-System Mounting.</p>	March	22

Lecturer

IQAC coordinator

Principal



**Government Degree College Eturnagaram**  
**Annual teaching plan**  
**Academic year 2020-2021**

**Name of Department:** Computer science

**Name of the Faculty:** P.Jeevaveni

**Subject:** Computer science

**Semester - I.**

**Paper: I-Programming in C**

S.No	Title of the topic to be taught	Month	Number of periods Allotted
1	<p><b>Unit I:</b>            Introduction of Computers, Classification of Computers , Anatomy of a Computer , Memory Hierarchy, Introduction to OS , Operational overview of a CPU.            Program Fundamentals: Generations and Classification of Programming languages, Compiling, Interpreting , Loading , Linking of a Program .            Introduction to C language, Structure of a C program</p>	February	8
2	<p>Comments, Program Statements, C Tokens. Keywords, Identifiers, Data Types, Variables. Constants. Operators and Expressions, Expression Evaluation—precedence and associatively, Type Conversions.  <b>Unit II:</b>            Input-Output: Non-formatted and Formatted Input and Output Functions. Escape Sequences.            Control Statements: Selection Statements — if, if-else, nested if. nested if-else, comma operator, conditional operator. switch.            Iterative Statements—while, for, do-while: Special Control Statement—go to, break, continue, return, exit.            Arrays and Strings: One-dimensional Arrays, Character Arrays, Functions from ctype.h, string.h, Multidimensional Array's.  <b>Unit III:</b>            Functions: Concept of Function. Using Functions. Call-by-Value Vs Call-by-reference. Passing Arrays to Functions, Scope of Variables. Storage Classes. Inline Functions. and Recursion.</p>	March	16

3	<p>Pointers: introduction. Address of Operator (&amp;), Pointer. Uses of Pointers. Arrays and Pointers. Pointers and Strings, Pointers to Pointers. Array of Pointers, Pointer to Array. Dynamic memory Allocation.</p> <p><b>Unit— IV</b></p> <p>User-defined Data Types: Declaring a Structure (Union) and its members, Initialization Structure (Union), Accessing members of a Structure (Union). Array of Structures (Union). Structures verses Unions, Enumeration Types.</p> <p>Files: introduction, Using Files in C. Working with Text Files. working north Binary files. files of Records, Random Access to Files of Records. Other File management Functions.</p>	April	11
4	EXAMINATIONS	September	

## Semester - II.

## Paper: II Programming with C++

S.No	Title of the topic to be taught	Month	Number of periods Allotted
1	<p><b>Unit I</b></p> <p>Introduction to C++: Applications. Example Programs. Tokens, Data Types. Operators, Expressions. Control Structures, Arrays, Strings, Pointers, Searching and Sorting Arrays.</p>	April	5
2	<p>Functions: Introduction, Proton pe, Passing Data by Value, Reference Variables, Using Reference Variables as Parameters. I mine Functions, Default Arguments, Overloading Functions. Passing Arrays to Functions.</p> <p>Object Oriented Programming: Procedural and Object-Oriented Programming. Terminology, Benefits, OOP Languages, and OOP Applications.</p> <p><b>Unit II</b></p>	June	17

	Classes: Introduction, Defining an Instance of a Class, Separating Class Specification from Implementation, Inline Member Functions. Constructors, Passing Arguments to Constructors, Destructors, Overloading Constructors, Private Member Functions, Arrays of Objects. Instance and Static Members, Friends of Classes. Member-wise Assignment, Copy Constructors. Operator Overloading. Object Conversion, Aggregation.		
3	<p><b>Unit III</b></p> <p>Inheritance: Introduction, Protected Members and Class Access, Base Class Access Specification. Constructors and Destructors in Base and Derived Classes, Redefining Base Class Functions, Class hierarchies, Polymorphism and Virtual Member Functions, Abstract Base Classes and Pure Virtual Functions. Multiple Inheritance.</p> <p>C++ Streams: Stream Classes. Unformatted I/O Operations. Formatted I/O Operations.</p>	July	19
4	<p><b>Unit IV</b></p> <p>Exceptions: Introduction. Throwing an Exception, Handling an Exception. Object-Oriented Exception Handling with Classes, Multiple Exceptions, Extracting Data from the Exception Class. Re-throwing an Exception.</p> <p>Templates: Function Templates—introduction. Function Templates with h4ultiple T) pc. Overloading with Function Templates, Class Templates — introduction, Defining Objects of the Class Terri plate, Class Templates and Inheritance. Introduction to the STL.</p>	August	20
5	<b>EXAMINATIONS</b>	October	

S.No	Title of the topic to be taught	Month	Number of periods Allotted
1	<p><b>Unit - I</b></p> <p>Basic data Structure: Introduction to Data Structures, Types of Data Structures, and Introduction to Algorithms, Pseudo code, and Relationship among data, data structures, and algorithms, Implementation of data structures, Analysis of Algorithms.</p> <p>Linked Lists: Introduction, Linked List, Linked List Abstract Data Type,</p>	February	5
2	<p><b>Unit II:</b></p> <p>Linked List, Circular Linked List, Representation of Sparse Matrix Using Linked List, Linked Stack, Linked Queue.</p> <p>Stacks: Concept of Stacks and Queues, Stacks, Stack Abstract Data Type, Representation of Stacks Using Sequential Organization (Arrays), Multiple Stacks, Applications of Stack, Expression Evaluation and Conversion, Polish notation and expression conversion, Processing of Function Calls, Reversing a String with a Stack, Recursion.</p> <p>Queues: Concept of Queues, Queue as Abstract Data Type, Realization of Queues Using Arrays, Circular Queue, Multi-queues, Dequeue, Priority Queue, Applications of Queues,</p> <p><b>Unit III:</b></p> <p>Trees: Introduction, Types of Trees, Binary Tree, Binary Tree Abstract Data Type, Realization of a Binary Tree, Insertion of a Node in Binary Tree, Binary Tree Traversal, Other Tree Operations, Binary Search Tree, Threaded Binary Tree, Applications of Binary Trees.</p>	March	19
3	<p>Trees: Symbol Table, Optimal Binary Search Tree, AVL Tree (Height-balanced Tree).</p> <p><b>Unit - IV</b></p> <p>Graphs: Introduction, Representation of Graphs, Graph Traversal – Depth First Search, Breadth First Search, Spanning Tree, Prim’s Algorithm, Kruskal’s Algorithm.</p> <p>Hashing: Introduction, Key Terms and Issues, Hash Functions, Collision Resolution Strategies, Hash Table Overflow, Extendible Hashing Heaps: Basic Concepts, Implementation of Heap, Heap as Abstract Data Type, Heap Sort, Heap Applications.</p>	April	6

<b>4</b>	<b>EXAMINATIONS</b>	<b>JULY</b>	
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**Semester – IV**

**Paper:IV - DATA BASE MANAGEMENT SYSTEMS**

<b>S.No</b>	<b>Title of the topic to be taught</b>	<b>Month</b>	<b>Number of periods Allotted</b>
1	<p><b>Unit - I</b></p> <p>Introduction: Database-System Applications, Purpose of Database Systems, View of Data, Database Languages, Relational Databases, Database Design, Data Storage and Querying, Transaction Management, Database Architecture, Database Users and Administrators.</p> <p>Introduction to the Relational Model: Structure of Relational Databases, Database Schema, Keys, Schema Diagrams, Relational Query Languages, Relational Operations.</p>	April	9
2	<p><b>Unit - II</b></p> <p>Database Design and the E-R Model: Overview of the Design Process, The Entity- Relationship Model, Constraints, Removing Redundant Attributes in Entity Sets, Entity-Relationship Diagrams, Reduction to Relational Schemas, Entity-Relationship Design Issues, Extended E-R Features, Alternative Notations for Modeling Data, Other Aspects of Database Design.</p> <p>Relational Database Design: Features of Good Relational Designs, Atomic Domains and First Normal Form, Decomposition Using Functional Dependencies, Functional- Dependency Theory, Decomposition Using Multivalued Dependencies, Normal Forms-2 NF, 3 NF, BCNF, The Database Design Methodology for Relational Databases</p>	June	14
3	<p><b>Unit - III</b></p> <p>Introduction to SQL: Overview of the SQL Query Language, SQL Data Definition, Basic Structure of SQL Queries, Additional Basic Operations, Set Operations, Null Values, Aggregate Functions, Nested Subqueries, Modification of the Database</p>	July	6
4	<p>Intermediate SQL: Join Expressions, Views, Transactions, Integrity Constraints, SQL Data Types and Schemas,</p>	August	16

	<p>Authorization.</p> <p>Advanced SQL: Accessing SQL from a Programming Language, Functions and Procedures, Triggers, Recursive Queries.</p> <p><b>Unit - IV</b></p> <p>Transaction Management: Transaction Support– Properties of Transactions, Database Architecture, Concurrency Control–The Need for Concurrency Control, Serializability and Recoverability, Locking Methods, Deadlock, Time Stamping Methods, Multi-version Timestamp Ordering, Optimistic Techniques, Granularity of Data Items, Database Recovery–The Need for Recovery, Transactions and Recovery, Recovery Facilities, Recovery Techniques, Nested Transaction Model. Security: Database Security–Threats, Computer-Based Controls–Authorization, Access Controls, Views, Backup and Recovery, Integrity, Encryption, RAID.</p>		
5	<b>EXAMINATIONS</b>	October	

**Semester – V**

**Paper: V-Programming in Java**

<b>S.No</b>	<b>Title of the topic to be taught</b>	<b>Month</b>	<b>Number of periods Allotted</b>
<b>1</b>	<p><b>Unit I</b></p> <p>Introduction: Java Essentials, JVM, Java Features, Creation and Execution of Programs, Data Types, Type Conversion, Casting, Conditional Statements, Loops, Branching Mechanism, Classes, Objects, Class Declaration, Creating Objects, Method Declaration and Invocation, Method Overloading,</p>	<b>August</b>	<b>6</b>
<b>2</b>	<p><b>Unit II</b></p> <p>Constructors – Parameterized Constructors, Constructor Overloading, Cleaning-up unused Objects. Class Variables &amp; Method-static Keyword, this Keyword, One-Dimensional Arrays, Two-Dimensional Arrays, Command-Line Arguments, Inner Class.</p> <p>Inheritance: Introduction, Types of Inheritance, extends</p>	<b>September</b>	<b>12</b>

	Keyword, Examples, Method Overriding, super, final Keyword, Abstract classes, Interfaces, Abstract Classes Verses Interfaces. Packages: Creating and Using Packages, Access Protection, Wrapper Classes, String Class, String Buffer Class		
<b>3</b>	<b>Unit III</b> Exception: Introduction, Types, Exception Handling Techniques, User-Defined Exception. Multithreading: Introduction, Main Thread and Creation of New Threads –By Inheriting the Thread Class or Implementing the Run able Interface, Thread Lifecycle, Thread Priority and Synchronization.	<b>October</b>	<b>12</b>
<b>4</b>	<b>Unit IV</b> Applets: Introduction, Example, Life Cycle, Applet Class, Common Methods Used in Displaying the Output. Event Handling: Introduction, Types of Events, Example  AWT: Introduction, Components, Containers, Button, Label, Checkbox, Radio Buttons, Container Class, Layouts.	<b>November</b>	<b>5</b>
<b>5</b>	<b>EXAMINATIONS</b>	<b>July</b>	

**Semester – V**

**Paper: V- B. Visual Programming**

<b>S.No</b>	<b>Title of the topic to be taught</b>	<b>Month</b>	<b>Number of periods Allotted</b>
<b>1</b>	<b>Unit I</b> Introduction to VB: Writing windows application with VB, Programming languages -procedural, object oriented, event driven; VB Environment, Writing first VB project, compiling, debugging, and running the	<b>February</b>	<b>5</b>

	<p>programs.</p> <p>Controls : Introduction to controls textboxes, frames, check boxes, option buttons, images, setting borders and styles, the shape control, the line control, working with multiple controls and their properties, designing the user interface, keyboard access, tab controls, default &amp; cancel property, coding for controls.</p>		
<b>2</b>	<p>Variables, constants, and Calculation: Data types, naming rules and conversion, constants-named and intrinsic, declaring variables, scope of variables, value function, arithmetic operations, formatting data Counting and accumulating Sums.</p> <p><b>Unit II</b></p> <p>Decisions and Conditions : If statement, Conditions comparing numeric variables and constants, comparing strings, compound conditions (and, or, not), nested if statements, using if statements with option buttons &amp; check boxes, displaying message in message box, input validation. Calling event procedures, debugging VB projects, Debugging Step-by-Step Tutorial.Modular programming: Menus, using common dialog box, writing general procedure.</p>	<b>March</b>	<b>11</b>
<b>3</b>	<p><b>Unit III</b></p> <p>Arrays: control Arrays, the case structure, single-dimension arrays, for Each/Next statement,table lookup, using list boxes with array, multi dimensional arrays.</p> <p><b>Unit IV:</b></p> <p>Record sets, working with database fields, creating a new Dynaset.</p> <p>Advanced topics in VB: ActiveX controls, Dynamic link libraries (DLL), Multiple Document interface (MDI)</p>	<b>April</b>	<b>4</b>
<b>4</b>	<b>EXAMINATIONS</b>	<b>July</b>	

**Semester – VI**

**Paper:VII- Elements of Scripting Languages**

<b>S.No</b>	<b>Title of the topic to be taught</b>	<b>Month</b>	<b>Number of periods Allotted</b>
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1	<b>Unit I :</b> HTML, Browsers and their types, URL's, web sites, Domain Names, static and dynamic sites and active web pages, Files Creation, Web Server, Web Client/Browser Hyper Text Markup Language, HTML Tags, Paired Tags, Commonly used HTML Commands Titles and Footers, Paragraph Breaks, Line Breaks, Heading Styles, Drawing Lines, Text Styles, Other Text Effects, Indenting Text, Lists, Types of Lists.	April	6
2	<b>Unit II</b> Using the Border attribute, Using the Width and Height Attribute, Using the Align Attribute, Tables - Header, Data rows, The Caption Tag, Attributes - Width and Border, BGCOLOR, COLSPAN, ROWSPAN, External Document References, Internal Document References, Images as Hyperlinks, Introduction to Frames, tag, <FRAME> tag. DHTML Introduction, use and its elements, Cascading Style Sheets – Introduction, Using Inline Styles, Sample Examples, Defining Your Own Styles, Properties in Values in Styles, A worked example	June	13
3	<b>Unit III</b> JavaScript, Advantages, JavaScript Syntax, Data Types and Literal, Type Casting, Variables, Incorporating variables in a Script, Array, Operators and Expressions, Arithmetic Operators, Logical Operators, Comparison Operators, String Operators, Assignment Operators, Conditional Expression, Ternary and Special Operators JavaScript Programming Constructs, If - then - else, Immediate If, For Loop, Built-in Functions,	July	5
4	User Defined functions, Declaring functions, Place of Declaration, Passing Parameters, Variable Scope, Return Values, Recursive Functions, Placing text in a Browser, Dialog Boxes - Alert dialog box, Prompt dialog box, Confirm dialog box.	August	2
5	<b>EXAMINATIONS</b>	September	

<b>S.No</b>	<b>Title of the topic to be taught</b>	<b>Month</b>	<b>Number of periods Allotted</b>
1	<p><b>Unit I</b></p> <p>Introduction: Computer-System Architecture, Computing Environments. Operating-System Structures: Operating-System Services, User Interface for Operating-System, System Calls, Types of System Calls, Operating System Structure. Process Management: Process Concept, Process Scheduling, Operations on Processes, Inter process Communication, Examples– Producer-Consumer Problem.</p>	April	5
2	<p><b>Unit II</b></p> <p>CPU Scheduling: Concepts, Scheduling Criteria, Scheduling Algorithms.</p> <p>Process Synchronization: Critical-Section Problem, Peterson’s Solution, Synchronization, Semaphores, Monitors.</p> <p>Deadlocks: System Model, Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery from Deadlock.</p>	June	12
3	<p><b>Unit III</b></p> <p>Main Memory: Introduction, Swapping, Contiguous Memory Allocation, Segmentation, Paging.</p> <p>Virtual Memory: Introduction, Demand Paging, Page Replacement, Allocation of Frames, Thrashing.</p>	July	5
4	<p><b>Unit IV</b></p> <p>Mass-Storage Structure: Overview, Disk Scheduling, RAID Structure</p>	August	2
5	<b>EXAMINATIONS</b>	September	

**Lecturer**

**IQAC coordinator**

**Principal**