A.S.D GOVERNMENT DEGREE COLLEGE FOR WOMEN (AUTONOMOUS)
DEPARTMENT OF COMPUTER SCIENCE
B.Sc(M.P.Cs)
ACADEMIC PLAN 2020-2021
SEMESTER - I (PROBLEM SOLVING IN C)

Month	Name of the Topic
JANUARY	General Fundamentals of Introduction to computers, Block diagram of the computers, Characteristics and limitation of computers.
FEBRUARY	Applications of computers , Types of Computers and computer generations of computers, Algorithms and key features of algorithms, Flowcharts
	Programming languages and Generations of Programming language, Design and implementation of correct, Efficient and maintainable programs.
	Introduction to C, Structure of C Program, Compiling and Executing C Program and sample program, Files used in C Program
	Using comments, Keywords, Identifiers, data types in C, Variables, Constants, I/O Statements in C, Operators in C and sample programs
MARCH	Introductions to decision control Statements, Conditional branching statements, Iterative statements, Nested loops, Break, Continue and Goto statements
	Introduction to Arrays, Declaration of Arrays, Accessing elements of the array, Storing values in array and operators on arrays.
	One dimensional array, Two dimensional array, and Multi-dimensional array
	String characters, handling functions and String manipulation functions and sample programs
APRIL	Introduction of Functions, declaration and prototype , function definition, function call and return statements Passing parameters, scope of variables, Storage classes, Recursive functions
	Introductions to structures, nested structures, Arrays of structures, Structures and functions, Introduction of Union, arrays of unions variables, Unions inside structure, Enumerated data type.
	Pointers: Understanding computer memory, Introduction and declaring pointer, Pointer Expression and Arithmetic, Null Pointers.
	Passing Arguments to functions, pointer and Array, Memory location in C program, Memory usage, Dynamic memory Allocation, Drawback of pointers.
MAY	Introduction to Files, Using files in C, Reading Data from files, Writing data to files Detecting the end-of-file.
	Error Handling file operations, Accepting command line arguments. Revision.

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SEMESTER - II (DATA STRUCTURES USING C)

Month	Name of the Topic
JUNE	**Introduction to Data Structures:** Introduction to the Theory of Data Structures, Data Representation, Abstract Data Types, Data Types, Primitive Data Types.
	Data Structure and Structured Type, Atomic Type, Difference between Abstract Data Types, Data Types, and Data Structures, Refinement Stages.
	Principles of Programming and Analysis of Algorithms: Software Engineering, Program Design, Algorithms, Different Approaches to Designing an Algorithm, Complexity.
	Big 'O' Notation, Algorithm Analysis, Structured Approach to Programming, Recursion, Tips and Techniques for Writing Programs in 'C'.
JULY	**Arrays:** Introduction to Linear and Non- Linear Data Structures, One- Dimensional Arrays, Array Operations,
	Two- Dimensional arrays, Multidimensional Arrays. Pointers and Arrays, an Overview of Pointers.
	Linked Lists: Introduction to Lists and Linked Lists, Dynamic Memory Allocation.
	Basic Linked List Operations, Doubly Linked List, Circular Linked List, Atomic Linked List.
AUGUST	Linked List in Arrays, Linked List versus Arrays, **Stacks:** Introduction to Stacks, Stack as an Abstract Data Type.
	Representation of Stacks through Arrays, Representation of Stacks through Linked Lists. Applications of Stacks, Stacks and Recursion.
	Queues: Introduction, Queue as an Abstract data Type, Representation of Queues, Circular Queues, Double Ended Queues- Deques, Priority Queues, Application of Queues.
	Binary Trees: Introduction to Non- Linear Data Structures, Introduction Binary Trees.
SEPTEMBER	Types of Trees, Basic Definition of Binary Trees, Properties of Binary Trees, Representation of Binary Trees.
	Operations on a Binary Search Tree, Binary Tree Traversal, Counting Number of Binary Trees, Applications of Binary Tree.
	Searching and sorting: Sorting – An Introduction, Bubble Sort, Insertion Sort, Merge Sort.
	Searching – An Introduction, Linear or Sequential Search, Binary Search, Indexed Sequential Search
OCTOBER	**Graphs:** Introduction to Graphs, Terms Associated with Graphs, Sequential Representation of Graphs, Linked Representation of Graphs.
	Traversal of Graphs, Spanning Trees, Shortest Path, Application of Graphs. Revision.

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SEMESTER – III (OBJECT ORIENTED PROGRAMMING USING JAVA)

Month	Name of the Topic
NOVEMBER	**FUNDAMENTALS OF OBJECT – ORIENTED PROGRAMMING :**Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, Java features:
	OVERVIEW OF JAVA LANGUAGE: Introduction, Simple Java program structure, Java tokens
	Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments.
DECEMBER	**CONSTANTS, VARIABLES & DATATYPES:** Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Symbolic Constants, Type casting, Getting Value of Variables, Standard Default values;
	OPERATORS & EXPRESSIONS: Arithmetic operators Relational operators, logical operators, Assignment operators, Increment and decrement operators, Conditional operators, Bitwise operators, Special operators, Arithmetic operators, Precedence of Arithmetic operators
	DECISION MAKING & BRANCHING: Introduction, Decision making with if statement, Simple if statement, if. Else statement, Nesting of if.else statements, the else if ladder, the switch statement, the conditional operator.
	LOOPING: Introduction, The While statement, the do-while statement, the for statement, Jumps in loops.
JANUARY	**CLASSES, OBJECTS & METHODS**: Introduction, Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method overloading, Static members, Nesting of methods;
	INHERITANCE: Extending a class, Overloading methods, Final variables and methods, Final classes, Abstract methods and classes;
	ARRAYS, STRINGS AND VECTORS: Arrays, Creating an array, One-dimensional arrays, Two – dimensional arrays, Strings,
	TYPES OF INHERITANCE: Single, Multilevel, Hierarchical, Multiple through interface
FEBRUARY	**MULTITHREADED PROGRAMMING:** Introduction, Creating Threads, Extending the Threads, Stopping and Blocking a Thread, Lifecycle of a Thread, Using Thread Methods,
	MANAGING ERRORS AND EXCEPTIONS: Types of Errors: Compile-time errors, Run-time errors, Exceptions, Exception handling, Multiple Catch Statements, Using finally statement,
	APPLET PROGRAMMING: local and remote applets, Applets and Applications, Building Applet code, Applet Life cycle: Initialization state, Running state
	Idle or stopped state, Dead state, Display state. **PACKAGES:** Introduction, Java API Packages, Using System Packages,
MARCH	Naming conventions, Creating Packages, Accessing a Package, using a Package. Revision

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SEMESTER - IV (DATA STRUCTURES)

Month	Name of the Topic
APRIL	**Concept of Abstract Data Types (ADTs)-** Data Types, Data Structures, Storage Structures, and File Structures, Primitive and Non-primitive Data Structures, Linear and Non-linear Data Structures.
	Linear Lists– ADT, Array and Linked representations, Pointers.
	Arrays– ADT, Mappings, Representations, Sparse Matrices, Sets – ADT, Operations
	Linked Lists: Single Linked List, Double Linked List, Circular Linked List, applications
MAY	**Stacks**: Definition, ADT, Array and Linked representations, Implementations and Applications.
	Queues: Definition, ADT, Array and Linked representations, Circular Queues.
JUNE	Dequeues, Priority Queues, Implementations and Applications.
	Trees: Binary Tree, Definition, Properties, ADT, Array and Linked representations, Implementations and Applications.
	Binary Search Trees (BST) – Definition, ADT, Operations and Implementations,
	BST Applications. Tree Traversals - Threaded Binary Trees, Heap trees.
JULY	**Graphs** – Graph and its Representation.
	Graph Traversals, Connected Components, Basic Searching Techniques.
	Minimal Spanning Trees, Prims Algorithm.
	Sorting and Searching: Selection, Insertion, Bubble, Merge.
AUGUST	Quick, Heap sort, Sequential and Binary Searching.

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SEMESTER - V (DATABASE MANAGEMENT SYSTEMS)

Month	Name of the Topic
NOVEMBER	**Overview of Database Management System:** Introduction, file-based system, Drawbacks of file-Based System ,Data and information, Database.
	Database management System, Objectives of DBMS, Evaluation of Database management System.
	Classification of Database Management System, DBMS Approach, advantages of DBMS, data models, Components and Interfaces of Database Management System.
DECEMBER	Database Architecture, Situations where DBMS is not Necessary.
	Entity-Relationship Model: Introduction, the building blocks of an entity relationship diagram, classification of entity sets, attribute classification.
	Relationship degree, relationship classification. Reducing ER diagram to tables, enhanced entity-relationship model (EER model).
	(EER model) generalization and specialization, is a relationship and attribute inheritance, multiple inheritance.
JANUARY	Constraints on specialization and generalization, aggregation and composition, entity clusters, connection types, advantages of ER modelling
	Relational Model: Introduction, CODD Rules, relational data model, concept of key ,relational integrity, relational algebra.
	Relational algebra operations, advantages of relational algebra, limitations of relational algebra.
	Structured Query Language: Introduction, History of SQL Standard, Commands in SQL, Data Types in SQL.
FEBRUARY	Data Definition Language, Selection Operation, Projection Operation, Aggregate functions, Data Manipulation Language.
	Table Modification Commands, Table Truncation, Imposition of Constraints, Join Operation, Set Operation, View, Sub Query, Embedded SQL.
	PL/SQL: Introduction, Shortcoming in SQL, Structure of PL/SQL. PL/SQL Language Elements, Data Types.
	Operators Precedence, Control Structure, Steps to Create a PL/SQL, Program. Iterative Control, Cursors, Steps to create a Cursors, Procedure, Function, Packages.
MARCH	Exceptions Handling, Database Triggers, Types of Triggers. Revision.

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SEMESTER – VI (WEB TECHNOLOGY)

Month	Name of the Topic
APRIL	Basic HTML, Document body, Text, Hype links, adding more Formatting.
	Html Lists, Tables using images, Multimedia Objects.
	HTML Frames, Forms towards interactive, HTML document heading details.
	Cascading Style Sheets, Introduction, using Styles, simple examples to your own styles
MAY	Properties and values in style sheets, formatting blocks of information layers.
	Introduction to JavaScript, What is DHTML, JavaScript and Basics.
JUNE	Variables, String manipulations, Mathematical Functions, Statements and Operators
	JavaScript using Arrays, Functions.
	Objects in JavaScript: Data and objects , Regular Expressions, Exception handling.
	DHTML with Java script: Data validation, opening a new window
JULY	Messages and confirmations, the status bar, different frames.
	Rollover buttons, moving images. Examples
	XML: Defining data for web applications,
	basic XML document type definition, presenting XML.
AUGUEST	Document object model, Web services and Revision.

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SEMESTER - VI (DISTRIBUTED SYSTEMS)

Month	Name of the Topic
APRIL	Introduction to Distributed Computing Systems.
	System Models, and Issues in Designing a Distributed Operating System.
	Examples of distributed systems.
	Features of Message Passing System, Synchronization and Buffering.
MAY	Introduction to RPC and its models, Transparency of RPC, Implementation Mechanism.
	Stub Generation and RPC Messages, Server Management, Call Semantics.
JUNE	Communication Protocols and Client Server Binding.
	Introduction, Design and implementation of DSM system.
	Granularity and Consistency Model, Advantages of DSM, Clock Synchronization.
	Event Ordering, Mutual exclusion, Deadlock, Election Algorithms.
JULY	Task Assignment Approach, Load Balancing Approach.
	Load Sharing Approach, Process Migration and Threads.
	File Models, File Accessing Models, File Sharing Semantics.
	File Caching Schemes, File Replication, Atomic Transactions.
AUGUST	Cryptography, Authentication, Access control and Digital Signatures. Revision.

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SEMESTER - VI (CLOUD COMPUTING)

Month	Name of the Topic
APRIL	**Cloud Computing Overview** – Origins of Cloud computing – Cloud components.
	Essential characteristics – On-demand self-service , Broad network access.
	Location independent resource pooling. Rapid elasticity , Measured service.
	Cloud scenarios – Benefits: scalability , simplicity , vendors ,security.
MAY	Limitations – Sensitive information - Application development – Security concerns.
	privacy concern with a third party- security level of third party. security benefits Regularity issues: Government policies.
JUNE	**Cloud architecture**: Cloud delivery model – SPI framework , SPI evolution.
	Software as a Service (SaaS): SaaS service providers– GoogleAppEngine, Salesforce.com and google platfrom– Benefits. Operational benefits - Economic benefits– Evaluating SaaS.
	Platform as a Service (PaaS): PaaS service providers – Salesforce.com– Services and Benefits.
	Infrastructure as a Service (IaaS): IaaS service providers – Amazon EC2 , GoGrid - Benefits.
JULY	**Cloud deployment model** : Public clouds – Private clouds – Community clouds -Hybrid clouds - Advantages of Cloud computing
MAY	**Virtualization**: Virtualization and cloud computing - Need of virtualization – cost, administration , fast deployment , reduce infrastructure cost - limitations
	Types of hardware virtualization: Full virtualization - partial virtualization –para virtualization
	Desktop virtualization: Software virtualization – Memory virtualization – Storage virtualization – Data virtualization – Network virtualization
JUNE	**Microsoft Implementation**: Microsoft Hyper V – Vmware features and infrastructure – Virtual Box - Thin client, Revision

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SEMESTER - I (INFORMATION TECHNOLOGY)

Month	Name of the Topic
JANUARY	Computer Definition - Characteristics and Limitations of Computer Hardware-Generations of Computer.
FEBRUARY	Classification of Computers, Applications of Computer, Basic Components of PC, Computer Architecture - Primary and Secondary Memories-
	Input and Output Devices- Operating System- Function of Operating System- Types of Operating System- Languages and its Types.
	Word Processing – Features-Advantages and Applications- Parts of Word Window Toolbar-Creating, Saving, Closing, Opening and Editing of a Document-Moving and Coping a Text.
	Formatting of Text and Paragraph- Bullets and Numbering-Find and Replace - Insertion of objects-Headers and Footers- Page Formatting.
MARCH	Auto Correct Spelling and Grammar- Mail Merge-Macros.
	Features – Spread Sheet-Workbook – Cell-Parts of a window-Saving, Closing, Opening of a Work Book.
	Editing – Advantages – Formulas- Types of Function, Templates.
	Macros – Sorting- Charts – Filtering – Consolidation – Grouping- Pivot Table.
APRIL	Introduction – Starting – Parts-Creating of Tables-Create Presentation.
	– Templates Auto Content Wizard-Slide Show-Editing of Presentation-Inserting Objects and charts.
	Orientation to Microsoft Access - Create a Simple Access Database - Working with Table Data - Modify Table Data .
	Sort and Filter Records - Querying a Database - Create Basic Queries .
MAY	Sort and Filter Data in a Query - Perform Calculations in a Query, Create Basic Access Forms.
	Work with Data on Access Forms - Create a Report - Add Controls to a Report - Format Reports. Revision.

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ACADEMIC PLAN 2020-2021
SEMESTER - II (E-COMMERCE AND WEB DESIGNING)

Month	Name of the Topic
JUNE	**Introduction:**Meaning, Nature, Concepts, Advantages, Disadvantages and reasons for Transacting Online.
	Types of E-Commerce, e-commerce Business Models (Introduction , Key Elements of a Business Model And Categorizing Major E-Commerce Business Models), Forces Behind e-commerce.
	Technology used in E-commerce: The dynamics of World Wide Web and Internet (Meaning, Evolution and Features);
	Designing, Building and Launching e-commerce website (A systematic approach involving decisions regarding selection of hardware, software, outsourcing Vs. in-house development of a website)
JULY	**E-payment System:** Models and methods of e–payments (Debit Card, Credit Card, Smart Cards, e-money), Digital Signatures (Procedure, Working And Legal Position), Payment Gateways,
	Online Banking (Meaning, Concepts, Importance, Electronic Fund Transfer, Automated Clearing House, Automated Ledger Posting), Risks Involved in e-payments
	On-line Business Transactions: Meaning, Purpose, Advantages and Disadvantages of Transacting Online
	E Commerce Applications in Various Industries Like {Banking, Insurance, Payment of Utility Bills,
AUGUST	Online Marketing, E-Tailing (Popularity, Benefits, Problems and Features), Online Services (Financial, Travel and Career), Auctions, Online Portal
	, Online Learning, Publishing and Entertainment} Online Shopping (Amazon, Snap Deal, Alibaba, Flipkart, etc.)
	Website designing Designing a home page, HTML document, Anchor tag Hyperlinks, Head and body section, Header Section, Title, Prologue.
	Links, Colorful Pages, Comment, Body Section, Heading Horizontal Ruler, Paragraph, Tabs, Images And Pictures, Lists and Their Types,
SEPTEMBER	Nested Lists, Table Handling.Frames: Frameset Definition, Frame Definition, Nested Framesets.
	Forms and Form elements. DHTML and Style Sheets: Defining Styles, elements of Styles,
	linking a style sheet to a HTML Document, Inline Styles, External Style Sheets, Internal Style Sheets & Multiple Style Sheets.
	Security and Encryption: Need and Concepts, E-Commerce Security Environment: (Dimension, Definition and Scope Of E-Security),
OCTOBER	Security Threats in The E-Commerce Environment (Security Intrusions and Breaches, Attacking Methods Like Hacking, Sniffing, Cyber Vandalism Etc.),
	Technology Solutions (Encryption, Security Channels Of Communication, Protecting Networks And Protecting Servers And Clients)

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SEMESTER – III (OFFICE AUTOMATION TOOLS)

Month	Name of the Topic
NOVEMBER	**MS-Excel**: features of Ms-Excel, Parts of MS-Excel window, entering and editing data in worksheet, number formatting in excel,
	Different cell references, how to enter and edit formula in excel, auto fill and custom fill, printing options
	Formatting options: Different formatting options, change row height, formulae and functions, excel names.
DECEMBER	Functions: Meaning and advantages of functions, different types of functions available in Excel,
	financial functions, date and time, engineering, statistical, math and trig, logical, text, information, look up and reference functions, operators in excel, Database functions.
	Charts: Different types of charts, Parts of chart, chart creation using wizard, chart operations, data maps, graphs, data sorting, filtering.
	Excel sub totals, scenarios, what-if analysis Macro; Meaning and advantages of Macros, creation, editing and deletion of macros
JANUARY	Creating a macro, how to run, how to delete a macro.
	MS Access: Creating a Simple Database and Tables: Features of Ms-Access, Creating a Database,
	Parts of Access, Data Types and properties, adding, deleting fields, renaming the fields in a table.
	Tables: table creation using design view, table wizard, data sheet view, import table, link table. Forms:
FEBRUARY	The Form Wizard, design view, columnar, tabular, data sheet, chart wizard
	Finding, Sorting and Displaying Data: Queries and Dynasts, Creating and using select queries, Returning to the Query Design,
	Multilevel sorts, Finding incomplete matches, showing All records after a Query, saving queries Crosstab Queries..
	Printing Reports: Simple table. Form and Database Printing, Defining advanced Reports, Manual Reporting, Properties in Reports, Saving Reports. **Relational Databases:** Flat Versus Relational, Types of Relationships, Viewing Relationships,
MARCH	Defining and Redefining Relationships, Creating and Deleting Relationships. Revision

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SEMESTER - IV (PROGRAMING IN C)

Month	Name of the Topic
APRIL	**Introduction to Algorithms and Programming Languages**: Algorithm – Key features of Algorithms – Some more Algorithms – Flow Charts.
	Introduction to C: Structure of C Program – Writing the first C Program – File used in C Program – Compiling and Executing C Programs – Using Comments – Keywords – Identifiers .
	Basic Data Types in C – Variables – Constants – I/O Statements in C- Operators in C- Programming Examples – Type Conversion and Type Casting
	Decision Control and Looping Statements: Introduction to Decision Control Statements .
MAY	Conditional Branching Statements – Iterative Statements .
	Nested Loops – Break and Continue Statement – Go to Statement
JUNE	**Functions**: Introduction – using functions – Function declaration/ prototype – Function definition – function call.
	Return statement – Passing parameters – Scope of variables – Storage Classes – Recursive function.
	Arrays: Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array – Calculating the length of the Array – Operations on Array
	One dimensional array for inter-function communication – Two dimensional Arrays –Operations on Two Dimensional Arrays.
JULY	**Strings:** Introduction String and Character functions to Strings and String handling functions.
	Pointers: Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables – - Passing Arguments to Functions using Pointer .
	Pointer and Arrays – Passing Array to Function. **Structure, Union, and Enumerated Data Types:** Introduction.
	Nested Structures – Arrays of Structures – Structures and Functions .
AUGUST	Unions – Enumerated Data Types. Revision.

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SEMESTER - V
DATABASE MANAGEMENT SYSTEM

Month	Name of the Topic
NOVEMBER	**Overview of Database Management System:** Introduction, file-based system, Drawbacks of file-Based System ,Data and information, Database.
	Database management System, Objectives of DBMS, Evaluation of Database management System.
	Classification of Database Management System, DBMS Approach, advantages of DBMS, data models, Components and Interfaces of Database Management System.
DECEMBER	Database Architecture, Situations where DBMS is not Necessary.
	Entity-Relationship Model: Introduction, the building blocks of an entity relationship diagram, classification of entity sets, attribute classification.
	Relationship degree, relationship classification. Reducing ER diagram to tables, enhanced entity-relationship model (EER model).
	(EER model) generalization and specialization, is a relationship and attribute inheritance, multiple inheritance.
JANUARY	Constraints on specialization and generalization, aggregation and composition, entity clusters, connection types, advantages of ER modelling
	Relational Model: Introduction, CODD Rules, relational data model, concept of key ,relational integrity, relational algebra.
	Relational algebra operations, advantages of relational algebra, limitations of relational algebra.
	Structured Query Language: Introduction, History of SQL Standard, Commands in SQL, Data Types in SQL.
FEBRUARY	Data Definition Language, Selection Operation, Projection Operation, Aggregate functions, Data Manipulation Language.
	Table Modification Commands, Table Truncation, Imposition of Constraints, Join Operation, Set Operation, View, Sub Query, Embedded SQL.
	PL/SQL: Introduction, Shortcoming in SQL, Structure of PL/SQL. PL/SQL Language Elements, Data Types.
	Operators Precedence, Control Structure, Steps to Create a PL/SQL, Program. Iterative Control, Cursors, Steps to create a Cursors, Procedure, Function, Packages.
MARCH	Exceptions Handling, Database Triggers, Types of Triggers. Revision.

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SEMESTER – V
WEB TECHNOLOGY

Month	Name of the Topic
NOVEMBER	Basic HTML, Document body, Text, Hype links, adding more Formatting.
	Html Lists, Tables using images, Multimedia Objects.
	HTML Frames, Forms towards interactive,
DECEMBER	HTML document heading details. Sample programs.
	Cascading Style Sheets, Introduction, using Styles, simple examples to your own styles
	Properties and values in style sheets.
	Formatting blocks of information layers.
JANUARY	Introduction to JavaScript, What is DHTML, JavaScript and Basics.
	Variables, String manipulations, Mathematical Functions, Statements and Operators
	JavaScript using Arrays, Functions.
	Objects in JavaScript: Data and objects , Regular Expressions, Exception handling.
FEBRUARY	DHTML with Java script: Data validation, opening a new window
	Messages and confirmations, the status bar.
	Different frames, rollover buttons, moving images.
	XML: Defining data for web applications,
MARCH	Basic XML document type definition, presenting XML. Document object model, Web services and Revision

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SEMESTER – VI (E-COMMERCE)

Month	Name of the Topic
APRIL	**Introduction to E-Commerce**: Scope, Definition, e-Commerce and the Trade Cycle, Electronic Markets, Electronic Data Interchange, Internet Commerce.
	Business Strategy in an Electronic Age: Supply Chains, Porter's Value Chain Model.
	Inter Organizational Value Chains, Competitive Strategy.
	First Mover Advantage - Sustainable Competitive Advantage.
MAY	Competitive Advantage using E-Commerce - Business Strategy.
	Business-to-Business Electronic Commerce: Characteristics of B2B EC, Models of B2B EC,
JUNE	Procurement Management by using the Buyer's Internal Market place.
	Just in Time Delivery, Other B2B Models, Auctions and Services from traditional to Internet Based EDI.
	Integration with Back-end Information System. Role of Software Agents for B2B EC, Electronic marketing in B2B, Solutions of B2B EC.
	Managerial Issues, Electronic Data Interchange (EDI), EDI: Nuts and Bolts, EDI and Business.
JULY	**Internet and Extranet** : Automotive Network Exchange, Largest Extranet,
	Architecture of the Internet, Intranet and Extranet, Intranet software.
	Applications of Intranets, Intranet Application Case Studies, Considerations in Intranet Deployment.
	Extranets, Structures of Extranets, Extranet products and services. Applications of Extranets.
AUGUEST	Business Models of Extranet Applications, Managerial Issues. Electronic Payment Systems: Issues and Challenges. Revision.