Name of Teacher: Ashish Kumar
Designation: Assistant Professor
Subject: Data Warehousing
Class: BCA – 3rd year

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Introduction to Data Warehouse, Data Warehouse Delivery Methods System Process : Typical Process Flow within a Data Warehouse, Extract and Load Process, Clean and Transform Data, Backup and Archive Process, Query Management Process. Process Architecture: Load Manager, Warehouse Manager, Query Manager, Detailed Information, Summary Information, Metadata, Data Marting.	
2	November	Database Schema: Starflake Schema, Snowflake Schema, Fact Constellation Schema, Identifying facts and dimensions, Designing Fact Tables, Designing Dimension Table, Designing various schema, Query Redirection Partitioning Strategy: Horizontal Partitioning, Vertical Partitioning, Hardware Partitioning, Sizing the partition. Aggregations: Need of Aggregation, designing summary tables.	1st Assignment
3	December	Data Marting: Introduction, Need of Data Mart, Design of Data Mart, Cost of Data Mart. Metadata: Data Transformation and Load, Data management, Query Generation, Metadata and tools. Process Managers: Need of tools to manage data warehouse, system managers, data warehouse process managers, load manager, warehouse manager, query manager.	Unit Test
4	January	Hardware Architecture: Process, Server Hardware, Network Hardware, Client Hardware. Physical Layout: Parallel Technology, Disk Technology, Database Layout, Filesystems. Backup and Recovery: Backup Strategies, Testing the Strategy, Disaster Recovery. Operating Datawarehouse: Introduction, Day to Day Operations of Data Warehouse, Overnight Processing.	2nd Assignment

Subject: Operating System
Class: BCA – 2nd year

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Introduction and Process Management: Operating System Services, System Calls, System Programs, Process concepts, Process operations, Interprocess Communication, Scheduling Criteria, Scheduling Algorithms, Comparative Study of Scheduling Algorithms.	
2	November	Concurrent Processes: Critical Section Problem, Semaphores, Classical Process Co-ordination Problems and their Solutions, Monitors, Synchronization Examples. Deadlocks: Deadlock Characterization, Deadlock Prevention and Avoidance, Deadlock detection and Recovery.	1st Assignment
3	December	Memory Management: Swapping, Paging, Segmentation, Virtual Memory Concepts: Demand Paging, Page Replacement Algorithms, Thrashing, Storage Management: File Concepts, File Access and Allocation Methods.	Unit Test
4	January	Secondary Storage : Disk Structure, Disk Scheduling algorithm: FCFS, SSTF, SCAN, LOOK, C-SCAN, C-LOOK. Protection & Security: Goals & Principles of Protection, Domains of Protection, Access Matrix, Access Controls. Security: Security problem, Threats, Security tools, Classification.	2nd Assignment

Subject: Programming with C
Class: BCA – 1st year

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Introduction to C: C Character set, Tokens, keywords and identifiers, constants, variables, data types and preprocessors. C Operators: Arithmetic, relational, logical, bitwise, unary, assignment and conditional operators and their hierarchy. Input/Output Statements in C: format specifiers, getch, getchar, getche, gets and puts. Formatted input and output using scanf and printf statements.	
2	November	Control Statements: Types of control statements, if-else, nested if-else, else-if ladder, switch statement, conditional control statement (? :), loops: for, while and do- while, break, continue and go to.	1st Assignment
3	December	Functions: Library Functions, User Defined Functions, Functions with and without Return Value, Functions with and without parameter passing, Parameter Passing – Call by Value, Call by Reference, Recursion.	Unit Test
4	January	Enumeration, Structure and Union, Use of Enumerators in Programming Pointers : Pointer to a Variable, Pointer to function, Pointer to Structure	2nd Assignment

Name of Teacher: Esha Bansal
Designation: Assistant Professor
Subject: Data Structures
Class: BSC(NM) – 3rd sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Introduction: Elementary data organization, Data Structure definition, Data type vs. Data Structure, Categories of data structures, Data structure operations, Applications of data Structures, Algorithms complexity and time-space tradeoff, Big-O notation. Strings: Introduction, strings, String operations, Pattern matching algorithms	
2	November	Arrays: Introduction, Linear arrays, Representation of linear array in memory, Traversal, Insertions, Deletion in an array, Multidimensional arrays, Parallel arrays, Sparse matrix. Linked List: Introduction, Array vs. linked list, Representation of linked lists in memory, Traversal, Insertion, Deletion, Searching in a linked list, Header linked list, Circular linked list, Two-way linked list, Garbage collection.	1st Assignment
3	December	Applications of linked lists. Algorithm of Insertion / deletion in SLL. Stack: primitive operation on stack, algorithms for push and pop. Representation of Stack as Linked List and array, Stacks applications: polish notation, recursion. Introduction to queues, Primitive Operations on the Queues, Circular queue, Priority queue	Unit Test
4	January	Representation of Queues as Linked List and array, Applications of queue. Algorithm on insertion and Deletion in simple queue and circular queue. Trees - Basic Terminology, representation, Binary Trees, Tree Representations using Array & Linked List Basic operation on Binary tree, Traversal of binary trees:- In order, Preorder & post order, Applications of Binary tree. Algorithm of tree traversal with and without recursion.	2nd Assignment

		Introduction to graphs, Definition, Terminology, Directed, Undirected & Weighted graph, Representation of graphs.	

Subject: Software Engineering
Class: BSC (NM) – 3rd Sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Introduction: Program vs. Software, Software Engineering, Programming paradigms, Software Crisis – problem and causes, Phases in Software Development: Requirement Analysis, Software Design, Coding, Testing, Maintenance. Software Development Process Models: Waterfall, Prototype, Evolutionary and Spiral models, Role of Metrics.	
2	November	Feasibility Study, Software Requirement Analysis and Specifications: SRS, Need for SRS, Characteristics of an SRS, Components of an SRS, Problem Analysis, Information gathering tools, Organizing and structuring information, Requirement specification, validation and Verification.	1st Assignment
3	December	SCM, Structured Analysis and Tools: Data Flow Diagram, Data Dictionary, Decision table, Decision tress, Structured English, Entity-Relationship diagrams, Cohesion and Coupling. Gantt chart, PERT Chart. Software Development Process Models: Waterfall, Prototype, Evolutionary and Spiral models, Role of Metrics.	Unit Test
4	January	Software Maintenance: Type of maintenance, Management of Maintenance, Maintenance Process, maintenance characteristics. Software Project Planning: Cost estimation: COCOMO model, Project scheduling, Staffing and personnel planning, team structure, Software Configuration management, Quality assurance plans, Project monitoring plans, Risk Management. Software testing strategies: unit testing, integration testing, Validation testing, System testing, Alpha and Beta testing.	2nd Assignment

Subject: Computer Applications in Business
Class: BCOM– 1st Sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Introduction to Computers: definition, components and characteristics of computers; Input and output devices: memory and mass storage devices; Introduction to modern CPU and processors.	
2	November	Computer software: introduction, types of software: system, application and utility software; Programming languages; Introduction to operating system: types and function of operating system; Realtime applications; Operating systems for Tabs, mobile phones, Android, etc.;	1st Assignment
3	December	Open source software: An overview. Application software: Spreadsheets, Word processors, Database management software; Networks basic, types of networks, topologies, media, hardware and software required for networking.	Unit Test
4	January	Practical: Windows, MS Word, MS Excel, and PowerPoint, I Practical: A student must be able to work on Windows and be proficient in the use of MS Word, MS Excel, and PowerPoint. Internet Technologies.	2nd Assignment

Name of Teacher: Priyanka
Designation: Assistant Professor
Subject: Digital Electronics
Class: BCA – 1st sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	**Number System and Logic Gates**: Decimal, Binary, Octal and Hexadecimal Number System, Addition, Subtraction, multiplication and division of binary numbers, Number code: 8421, BCD,Grey, ASCII, EBCDIC codes, Conversions from one number system to another, Logic Gates: AND, OR, NOT, NAND, NOR, XOR, XNOR	
2	November	**Combinational Logic Circuits:** Boolean operations, Basic Laws of Boolean Algebra, Demorgan's theorem, Principle of Duality, Sum-of-Products Methods, Truth Table, Karnaugh-Map, Pairs, Quads, and Octets, Kamaugh Simplifications, Don't-care Conditions , Product-ofsums Method, Adder circuits: Half, Full, 4-bit adder	1st Assignment
3	December	**Flip Flop and Registers:** Flip Flop: RS Latch, RS, D,T, JK Flip Flop, JK Master Slave Flip Flop, Clock wave forms, Registers: Types of Registers, Serial In Serial Out (SISO), Serial In Parallel Out (SIPO), Parallel In Serial Out (PISO), Parallel In Parallel Out (PIPO), Universal Shift Register	Unit Test
4	January	**Counters and Memory:** Asynchronous counters, Synchronous counters, ring counter, ripple counter, Johnson counter Memories: Basic terms and ideas, Magnetic Memory, Optical Memory, Memory Addressing, ROMs, PROMs, and EPROMs, RAMs.	2nd Assignment

Subject: Object Oriented Programming using C++
Class: BCA – 3rd sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	**Structure of C++ program:** Data-types, Variables, Static Variables, Operators in C++, Arrays, Strings, Structure, Functions, Recursion, Control Statements. **Introduction to Class:** Class Definition, Classes and Objects, Access Specifiers: Private, Public and Protected, Member functions of the class, Constructor and Destructor, Parameterized Constructor, Copy Constructors.	
2	November	**Inheritance**: Reusability, Types of Inheritance: Single inheritance, Multiple, Multilevel, Hybrid Inheritance, Public, Private, and Protected Derivations, Using derived class, Constructor and destructor in derived class, Object initialization and conversion, Nested classes(Container classes), Virtual Inheritance and Virtual base class.	1st Assignment
3	December	**Polymorphism:** Function Overloading, Static Class Members, Static Member Functions, Friend Functions, Operator Overloading: Unary and Binary Operator Overloading. Abstract class, Virtual function, Pure virtual function, Overloading vs. Overriding. Memory management: new, delete, object Creation at Run Time, This Pointer. Exception handling: Throwing, Catching, Rethrowing an exception, specifying exceptions, processing unexpected exceptions, Exceptions when handling exceptions, resource capture and release.	Unit Test
4	January	**Templates:** Introduction, Class templates and Function templates, Overloading of template function, namespaces. Introduction to STL: Standard Template Library: benefits of STL, containers, adapters, iterator, vector, list.	2nd Assignment

Subject: Computer Graphics
Class: BCA – 5th sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Introduction: Survey of Computer Graphics and its applications, Components and working of Interactive Graphics, Display Processors; Graphic Devices: Raster scan and Random Scan displays, Resolution, Aspect Ratio, Refresh CRT, Color CRT monitors, LookUp tables, Plasma Panel and LCD monitors, interlacing, grey shades; Interactive Input Devices: keyboard, mouse, trackball, joystick, light pen, digitizing tablet, image scanners, voice system; Hard Copy Devices: printers, plotters;	
2	November	Drawing Geometry: Coordinate Systems; Output Primitives: symmetrical and simple DDA line drawing algorithm, Bresenham's line drawing, loading frame buffer; symmetrical DDA for drawing circle, Polynomial method for circle drawing; circle drawing using polar coordinates, Bresenham's circle drawing; generation of ellipse;	1st Assignment
3	December	2-D Transformations: translation, rotation, scaling, matrix representations and homogeneous coordinates, composite transformations, general pivot point rotation, general fixed point scaling, shearing; reflection about X Axis and Y Axis; Reflection about Straight lines;, Reflection through an Arbitrary Line	Unit Test
4	January	2-D Viewing: window, viewport; 2-D viewing transformation, zooming, panning; Clipping operations: point and line clipping, Cohen-Sutherland line clipping, mid-point subdivision line clipping, Liang-Barsky line clipping, Sutherland-Hodgman polygon clipping.	2nd Assignment

Name of Teacher: Ms. Jyoti Sihmar
Designation: Assistant Professor
Subject: Computer and Programming Fundamentals
Class: BSC – 1ˢᵗ sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Computer Fundamentals: Definition, Functional components of computer, characteristics & classification of computers, Applications of computers in various fields. Memory: Concept of primary & secondary memory, RAM, ROM, types of ROM, Cache memory, CPU Registers, flash memory, Secondary storage devices: Sequential & direct access devices viz. magnetic tape, magnetic disk, CD, DVD.	
2	November	Computer hardware & software: I/O devices, definition of software, relationship between hardware and software, types of software, motherboard, ports. Overview of operating system: Definition, functions of operating system, concept of multiprogramming, multitasking, multithreading, multiprocessing, time-sharing, real time, single-user & multi-user operating system, examples of various operating systems.	1st Assignment
3	December	Planning the Computer Program: Concept of problem solving, Problem definition, Program design, Debugging, Types of errors in programming, Documentation. Techniques of Problem Solving: Flowcharting, algorithms, pseudo code, decision table, Structured programming concepts, Programming methodologies viz. top-down and bottomup programming.	Unit Test
4	January	Searching, Sorting, and Merging: Linear & Binary Searching, Bubble, Selection, and Insertion Sorting, Merging. Computer Languages: Analogy with natural language, machine language, assembly language, high-level language, language translators, characteristics of a good programming language.	2nd Assignment

Subject: PC Software
Class: BSC – 1st sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Windows: Basics of Windows. Windows History, Basic components of windows, icons, types of icons, taskbar, activating windows, using desktop, title bar, running applications, Windows explorer, managing files and folders, Configuring System devices. Control panel , using windows accessories.	
2	November	Documentation Using Word - Introduction to Office Automation, Creating & Editing Document, Formatting Document, Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary, Page Formatting, Bookmark, Advance Features of MS-Word-Mail Merge, Macros, Tables, File Management, Printing, Styles, linking and embedding object.	1st Assignment
3	December	Electronic Spread Sheet using Excel - Introduction to MS-Excel, Creating & Editing Worksheet, Formatting and Essential Operations, Formulas and Functions, Charts, Advance features of MS-Excel-Pivot table & Pivot Chart, Linking and Consolidation, Database Management using Excel-Sorting, Filtering, Table, Validation, Goal Seek, Scenario.	Unit Test
4	January	Presentation using PowerPoint: Presentations, Creating, Manipulating & Enhancing Slides, Organizational Charts, Excel Charts, Word Art, Layering art Objects, Animations and Sounds, Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effect or In-Built Sound Effect.	2nd Assignment

Subject: Computer and Programming Fundamentals
Class: BA – 1st sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Computer Fundamentals: Definition, Functional components of computer, characteristics & classification of computers, Applications of computers in various fields. Memory: Concept of primary & secondary memory, RAM, ROM, types of ROM, Cache memory, CPU Registers, flash memory, Secondary storage devices: Sequential & direct access devices viz. magnetic tape, magnetic disk, CD, DVD.	
2	November	Computer hardware & software: I/O devices, definition of software, relationship between hardware and software, types of software, motherboard, ports. Overview of operating system: Definition, functions of operating system, concept of multiprogramming, multitasking, multithreading, multiprocessing, time-sharing, real time, single-user & multi-user operating system, examples of various operating systems.	1st Assignment
3	December	Planning the Computer Program: Concept of problem solving, Problem definition, Program design, Debugging, Types of errors in programming, Documentation. Techniques of Problem Solving: Flowcharting, algorithms, pseudo code, decision table, Structured programming concepts, Programming methodologies viz. top-down and bottomup programming.	Unit Test
4	January	Searching, Sorting, and Merging: Linear & Binary Searching, Bubble, Selection, and Insertion Sorting, Merging. Computer Languages: Analogy with natural language, machine language, assembly language, high-level language, language translators, characteristics of a good programming language.	2nd Assignment

Subject: PC Software
Class: BA – 1st sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Windows: Basics of Windows. Windows History, Basic components of windows, icons, types of icons, taskbar, activating windows, using desktop, title bar, running applications, Windows explorer, managing files and folders, Configuring System devices. Control panel , using windows accessories.	
2	November	Documentation Using Word - Introduction to Office Automation, Creating & Editing Document, Formatting Document, Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary, Page Formatting, Bookmark, Advance Features of MS-Word-Mail Merge, Macros, Tables, File Management, Printing, Styles, linking and embedding object.	1st Assignment
3	December	Electronic Spread Sheet using Excel - Introduction to MS-Excel, Creating & Editing Worksheet, Formatting and Essential Operations, Formulas and Functions, Charts, Advance features of MS-Excel-Pivot table & Pivot Chart, Linking and Consolidation, Database Management using Excel-Sorting, Filtering, Table, Validation, Goal Seek, Scenario.	Unit Test
4	January	Presentation using PowerPoint: Presentations, Creating, Manipulating & Enhancing Slides, Organizational Charts, Excel Charts, Word Art, Layering art Objects, Animations and Sounds, Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effect or In-Built Sound Effect.	2nd Assignment

Name of Teacher: Dr. Monika
Designation: Assistant Professor
Subject: Fundamentals of Database Systems
Class: BSC – 5th sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Basic Concepts – Data, Information, Records and files. Traditional file Based Approach- Limitations of Traditional File Based Approach, Database Approach-Characteristics of Database Approach, Database Management System (DBMS), Components of DBMS Environment, DBMS Functions and Components, Advantages and Disadvantages of DBMS.	
2	November	Actors on the Scene - Data and Database Administrator, Database Designers, End users Applications Developers and Workers behind the Scene. Database System Architecture – Three Levels of Architecture, Schemas – External, Conceptual and Internal Level, Database Languages – VDL, DDL, SDL, DML, SQL, Mappings – External/ Conceptual and Conceptual/Internal, Instances, Data Independence – Logical and Physical Data Independence	1st Assignment
3	December	Data Models: High Level, Low Level and Representational – Records- based Data Models, Object-based Data Models, Physical Data Models and Conceptual Models Entity-Relationship Model – Concepts, Entity Types, Entity Sets, Attributes, Relationships, Constraints, Keys , Degree, Cardinality etc. ER Diagrams of any Database Organization- Inventory System, Payroll System, Reservation System, Online Book Store etc.	Unit Test
4	January	Classification of Database Management System, Centralized and Client Server architecture Relational Data Model:-Brief History, Terminology in Relational Data Structure, Relations, Properties of Relations, Keys – Primary, Secondary, Composite, Candidate, Alternate and Foreign Key, Domains, Integrity Constraints over Relations.	2nd Assignment

Subject: Web Designing
Class: BSC – 5th sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Introduction to Internet and World Wide Web; Evolution and History of World Wide Web; Basic Features; Web Browsers; Web Servers; Hypertext Transfer Protocol; URLs; Searching and Web-Casting Techniques; Search Engines and Search Tools	
2	November	Steps for Developing Website; Choosing the Contents; Home Page; Domain Names; Internet Service Provider; Planning and Designing Web Site; Creating a Website; Web Publishing: Hosting Site;	1st Assignment
3	December	Introduction to HTML; Hypertext and HTML; HTML Document Features; HTML Tags; Header, Title, Body, Paragraph, Ordered/Unordered Line, Creating Links; Headers; Text Styles; Text Structuring; Text Colors and Background; Formatting Text; Page layouts; Insertion of Text, Movement of Text	Unit Test
4	January	Images: Types of Images, Insertion of Image, Movement of Image, Ordered and Unordered lists; Inserting Graphics; Table Handling Functions like Columns, Rows, Width, Colours; Frame Creation and Layouts; Working with Forms and Menus; Working with Buttons like Radio, Check Box	2nd Assignment

Subject: Software Project Management
Class: BCA – 5th sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Theoretical foundations for software metrics, Introduction to the measurement theory, Data collection and analysis, Classification of software measures, Application of software metrics Software reliability measures and models, Measuring the software development and maintenance processes, Experimental design and analysis, Software metrics validation, Predication systems	
2	November	Calibration and validation of prediction systems, Overview of mature software processes and project management, Role of TQM in software project management, cost and effort estimates, Overall and detailed scheduling	1st Assignment
3	December	Quality management, Defect estimation and prevention, Risk management , logging and tracking defects, project management plans, configuration management, project reviews for better project execution, Overcoming the Not Around Here (NAH) syndrome	Unit Test
4	January	Project tracking (including defect tracking, status reports, milestone analysis), defect analysis and prevention (plus Pareto and causal analysis), Process monitoring and audit, Project closure analysis	2nd Assignment

Name of Teacher: JYOTI
Designation: Assistant Professor
Subject: Data Structures
Class: B.A(CS) – 3rd sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Introduction: Elementary data organization, Data Structure definition, Data type vs. Data Structure, Categories of data structures, Data structure operations, Applications of data Structures, Algorithms complexity and time-space tradeoff, Big-O notation. Strings: Introduction, strings, String operations, Pattern matching algorithms	
2	November	Arrays: Introduction, Linear arrays, Representation of linear array in memory, Traversal, Insertions, Deletion in an array, Multidimensional arrays, Parallel arrays, Sparse matrix. Linked List: Introduction, Array vs. linked list, Representation of linked lists in memory, Traversal, Insertion, Deletion, Searching in a linked list, Header linked list, Circular linked list, Two-way linked list, Garbage collection.	1st Assignment
3	December	Applications of linked lists. Algorithm of Insertion / deletion in SLL. Stack: primitive operation on stack, algorithms for push and pop. Representation of Stack as Linked List and array, Stacks applications: polish notation, recursion. Introduction to queues, Primitive Operations on the Queues, Circular queue, Priority queue	Unit Test
4	January	Representation of Queues as Linked List and array, Applications of queue. Algorithm on insertion and Deletion in simple queue and circular queue. Trees - Basic Terminology, representation, Binary Trees, Tree Representations using Array & Linked List Basic operation on Binary tree, Traversal of binary trees:- In order, Preorder & post order, Applications of Binary tree. Algorithm of tree traversal with and without recursion. Introduction to graphs, Definition, Terminology, Directed, Undirected & Weighted graph, Representation of graphs.	2nd Assignment

Subject: Software Engineering
Class: B.A(C.S) – 3rd Sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Introduction: Program vs. Software, Software Engineering, Programming paradigms, Software Crisis – problem and causes, Phases in Software Development: Requirement Analysis, Software Design, Coding, Testing, Maintenance. Software Development Process Models: Waterfall, Prototype, Evolutionary and Spiral models, Role of Metrics.	
2	November	Feasibility Study, Software Requirement Analysis and Specifications: SRS, Need for SRS, Characteristics of an SRS, Components of an SRS, Problem Analysis, Information gathering tools, Organizing and structuring information, Requirement specification, validation and Verification.	1st Assignment
3	December	SCM, Structured Analysis and Tools: Data Flow Diagram, Data Dictionary, Decision table, Decision tress, Structured English, Entity-Relationship diagrams, Cohesion and Coupling. Gantt chart, PERT Chart. Software Development Process Models: Waterfall, Prototype, Evolutionary and Spiral models, Role of Metrics.	Unit Test
4	January	Software Maintenance: Type of maintenance, Management of Maintenance, Maintenance Process, maintenance characteristics. Software Project Planning: Cost estimation: COCOMO model, Project scheduling, Staffing and personnel planning, team structure, Software Configuration management, Quality assurance plans, Project monitoring plans, Risk Management. Software testing strategies: unit testing, integration testing, Validation testing, System testing, Alpha and Beta testing.	2nd Assignment

Subject: Web Designing
Class: BCA– 3rd Sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	**Internet Basics:** The Internet and its Advantages disadvantages, Basic Internet Protocols, World Wide Web, URL, Web Page, Web Browser, Web Servers, Client-Server model, FTP, Telnet, Search Engine. **Mark Up Languages:** Introduction to HyperText Markup Language (HTML), Elements, Lists, Tables, Linking documents, Frames, Forms, Creating HTML pages.	
2	November	**Dynamic Hypertext Mark Up language:** Cascading Style Sheets: Features, Core Syntax, Types, Style Sheets and HTML, StyleRules - Cascading and Inheritance, Text Properties, CSS Box Model, Normal Flow, Box Layout, Positioning and other useful-Style Properties.	1st Assignment
3	December	**Client-Side Programming:** Introduction to JavaScript, Perspective, Basic Syntax, Data Types, Variables Statements, Operators, Literals, Control statements, Functions, Arrays, Document Object Model, Built-in Objects.	Unit Test
4	January	**XML**: Relation between XML, HTML, SGML, Goals of XML, Structure and Syntax of XML, Well Formed XML, DTD and its Structure, Namespaces and Data Typing in XML, Transforming XML Documents. XPATH.	2nd Assignment

Subject: Web Designing
Class: B.A(CS)– 5th Sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Introduction to Internet and World Wide Web; Evolution and History of World Wide Web; Basic Features; Web Browsers; Web Servers; Hypertext Transfer Protocol; URLs; Searching and Web-Casting Techniques; Search Engines and Search Tools	
2	November	Steps for Developing Website; Choosing the Contents; Home Page; Domain Names; Internet Service Provider; Planning and Designing Web Site; Creating a Website; Web Publishing: Hosting Site;	1st Assignment
3	December	Introduction to HTML; Hypertext and HTML; HTML Document Features; HTML Tags; Header, Title, Body, Paragraph, Ordered/Unordered Line, Creating Links; Headers; Text Styles; Text Structuring; Text Colors and Background; Formatting Text; Page layouts; Insertion of Text, Movement of Text	Unit Test
4	January	Images: Types of Images, Insertion of Image, Movement of Image, Ordered and Unordered lists; Inserting Graphics; Table Handling Functions like Columns, Rows, Width, Colours; Frame Creation and Layouts; Working with Forms and Menus; Working with Buttons like Radio, Check Box;	2nd Assignment

Subject: Fundamentals of Database Systems
Class: B.A(CS)– 5th Sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Basic Concepts – Data, Information, Records and files. Traditional file Based Approach- Limitations of Traditional File Based Approach, Database Approach-Characteristics of Database Approach, Database Management System (DBMS), Components of DBMS Environment, DBMS Functions and Components, Advantages and Disadvantages of DBMS.	
2	November	Actors on the Scene - Data and Database Administrator, Database Designers, End users Applications Developers and Workers behind the Scene. Database System Architecture – Three Levels of Architecture, Schemas – External, Conceptual and Internal Level, Database Languages – VDL, DDL, SDL, DML, SQL, Mappings – External/ Conceptual and Conceptual/Internal, Instances, Data Independence – Logical and Physical Data Independence;	1st Assignment
3	December	Data Models: High Level, Low Level and Representational – Records- based Data Models, Object-based Data Models, Physical Data Models and Conceptual Models Entity-Relationship Model – Concepts, Entity Types, Entity Sets, Attributes, Relationships, Constraints, Keys , Degree, Cardinality etc. ER Diagrams of any Database Organization- Inventory System, Payroll System, Reservation System, Online Book Store etc.	Unit Test
4	January	Classification of Database Management System, Centralized and Client Server architecture Relational Data Model:-Brief History, Terminology in Relational Data Structure, Relations, Properties of Relations, Keys – Primary, Secondary, Composite, Candidate, Alternate and Foreign Key, Domains, Integrity Constraints over Relations.	2nd Assignment

Subject: COMPUTER APPLICATIONS IN BUSINESS
Class: B.Com Sec A- 1st sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Introduction to Computers: definition, components and characteristics of computers; Input and output devices: memory and mass storage devices; Introduction to modern CPU and processors.	
2	November	Computer software: introduction, types of software: system, application and utility software; Programming languages; Introduction to operating system: types and function of operating system; Realtime applications; Operating systems for Tabs, mobile phones, Android, etc.; Open source software: An overview.	1st Assignment
3	December	Application software: Spreadsheets, Word processors, Database management software; Networks basic, types of networks, topologies, media, hardware and software required for networking..	Unit Test
4	January	Practical work of MS Word, MS Excel, and PowerPoint.	2nd Assignment

Name of Teacher: Dr. Sonal Jain
Designation: Assistant Professor
Subject: Computer Applications In Business
Class: B.Com Sec C - 1st sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Introduction to Computers: definition, components and characteristics of computers; Input and output devices: memory and mass storage devices; Introduction to modern CPU and processors.	
2	November	Computer software: introduction, types of software: system, application and utility software; Programming languages; Introduction to operating system: types and function of operating system; Realtime applications; Operating systems for Tabs, mobile phones, Android, etc.; Open source software: An overview.	1st Assignment
3	December	Application software: Spreadsheets, Word processors, Database management software; Networks basic, types of networks, topologies, media, hardware and software required for networking..	Unit Test
4	January	Practical work of MS Word, MS Excel, and PowerPoint.	2nd Assignment

Subject: Computer Applications In Business
Class: B.Com (Hons.) - 1st sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Introduction to Computers: definition, components and characteristics of computers; Input and output devices: memory and mass storage devices; Introduction to modern CPU and processors.	
2	November	Computer software: introduction, types of software: system, application and utility software; Programming languages; Introduction to operating system: types and function of operating system; Realtime applications; Operating systems for Tabs, mobile phones, Android, etc.; Open source software: An overview.	1st Assignment
3	December	Application software: Spreadsheets, Word processors, Database management software; Networks basic, types of networks, topologies, media, hardware and software required for networking..	Unit Test
4	January	Practical work of MS Word, MS Excel, and PowerPoint.	2nd Assignment

Subject: Computer Oriented Optimization Techniques
Class: B.C.A – 3rd sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Introduction: The Historical development, Nature, Meaning and Management Application of Operations research. Modelling, Its Principal and Approximation of O.R.Models, Main characteristic and phases, General Methods of solving models, Scientific Methods, Scope, Role on Decision Making and Development of Operation Research. Linear Programming: Formulation, Graphical solution, standard and matrix form of linear programming problems, Simplex method and its flow chart, Two-phase Simplex method, Degeneracy.	
2	November	Assignment Models: Formulation of problem, Hungarian Method for Assignment Problems, Unbalanced Assignment Problems, Restricted Assignment Problems, Travelling Salesman Problem. Transportation Problem : North West Corner Rule, Row Minima, Column Minima, Lowest Cost Entry, Vogel Approximation method, MODI Method, Degeneracy, Unbalanced and Restricted Transportation Problems, Transhipment Problems.	1st Assignment
3	December	PERT and CPM: Basic steps in PERT/CPM, Techniques, Network Diagram Representation, Forward and Backward Pass-computation, Representation in Tabular form, Determination of Critical path, Critical activity, Difference between CPM and PERT, Floats and Slack Times.	Unit Test
4	January	Dynamic Programming : Developing Optimal Decision Policy, Dynamic Programming under Certainity: Shortest Route Problem, Multiplicative Separable Return Function and Single Additive Constraint, Additive Separable Return Function and Single Additive Constraint, Additively Separable Return Function and Single Multiplicative Constraint.	2nd Assignment

Subject: Introduction to Cloud Computing
Class: B.C.A – 5th sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	October	Introduction, Layers and Types of Cloud, Features of Cloud, Infrastructure as a Service, Platform as a Service, Software as a Service. Broad Approaches of Migrating to a Cloud, Seven Step Model of Migration into a Cloud.	
2	November	The Onset of Knowledge Era, Evolution of SaaS, Challenges of SaaS Paradigm, Approaching the SaaS integration Enigma, New Integration Scenarios, Integration Methodologies, SaaS Integration Products and Platforms, SaaS Integration Services, Business to Business Integration Services. Issues of Enterprise Applications on Cloud, Transition Challenges, Enterprise Cloud Technology and Market Evolution, Business Drivers towards marketplace for Enterprise Cloud Computing, Cloud Supply Chain.	1st Assignment
3	December	Virtual Machine, Provisioning and Manageability, Virtual Machine Migration Services, Anatomy of Cloud Infrastructure, Distributed Management of Virtual Infrastructure, Scheduling Techniques of Advanced Reservation of Capacity, Capacity Management to meet SLA Commitments. Logical Design of Cluster as a Service, Cloud Storage from LAN to WAN, Technologies for Data Security in Cloud.	Unit Test
4	January	Integration of Private and Public Cloud, Resource Provisioning Service, Hybrid Cloud Implementation, Importance of Quality and Security in Cloud, Business Ready Dynamic Data Centre, Dynamic ICT Services. Workflow Management System and Clouds, Utilizing Clouds for Workflow Execution,	2nd Assignment

Name of Teacher: Dr. Himanshu Garg
Designation: Assistant Professor

DATE	TOPICS TO BE COVERED		
	CLASS: BCA I SUBJECT: OFFICE AUTOMATION	CLASS: BCA I SUBJECT: COMPUTER FUNDAMENTALS	CLASS: BCA III SUBJECT: ANGULAR JS
Oct,2021	Word Processing: Starting Word Processing software, Creating and saving a document, Opening a document, Inserting, selecting, copying, moving, deleting and pasting, text, Undoing ,redoing, Applying bold, italic, underline style on text, changing size, color and font of text, using Format painter, aligning text, Formatting paragraphs: Line spacing, paragraph indents, space before and after paragraph, using bullets and numbering in paragraphs, Spelling and grammar, Autocorrect, inserting page number, page break, header and footer, border and shading, inserting picture, shapes and screenshot, using Mail merge.	Computer Fundamentals: Computer components, Generations of computers, Characteristics and classification of computers, hardware, software, firmware, Memory and its types: Random access, sequential access, Magnetic disk, optical disc, flash memory .	Need of Angular JS, MVC, Angular Expressions, Built in Filters, Using Angular JS Filters Directives, Directive Lifecycle, Binding Controls to Data, Matching Directives,
Nov,2021	Spreadsheet Designing: Starting Excel, Workbook and Worksheet or Spreadsheet, Aligning and formatting data in cells, Cell range, Math, Trigonometric, Date and Time, Logical, Text and Statistical Functions, AutoSum, inserting/deleting rows, columns and cells, Merge and center, creating charts (column, line, pie, bar), changing column width and row	Programming languages: Low level programming languages, High level languages, Assembler, Complier, Interpreter Peripheral devices:- Keyboard, Pointing Devices: Mouse, Trackball, Touch Panel, Joystick, Light Pen, Scanners, Monitor, OMR, Bar-code Reader, Hard Copy Devices: Impact and Non-Impact Printers-Daisy Wheel,	Role of Controller, Controllers and Modules, Nested Controllers, Using Filters in Controllers Introduction to Angular JS Modules, Working with Angular forms, Model Binding Forms, Updating Models with a twist.

	height, using IF() function, Sorting data, Filtering data.	Dot Matrix, Laser Printer, Plotters, speakers, Projector.	
Dec,2021	Lookup and Reference Functions, Database Functions, Information Functions, Using conditional formatting with multiple cell rules, creating new rules and managing existing rules, Creating Pivot Table, Using Pivot Table Options, Changing and Updating Data Range, Formatting Pivot Table and making Dynamic Pivot Table, Creating Pivot Chart, Types of Pivot Charts and their usage, Formatting Pivot Charts and making Dynamic Pivot Charts.	**Internet and Multi Media:** What is Internet?, Advantages and Disadvantages of Internet, Electronic Mail, Attaching a document with e- mail, FTP, Telnet, World Wide Web, Uniform Resource Locator (URL), Web Browsers, Internet Search Engine, What is Multimedia?, Multimedia Components: Text, Graphics, Animation, Audio, Video, Multimedia applications	Scope, Scope Lifecycle, Scope Inheritance, Scope and Controllers, Rootscope, Scope Broadcasting. Dependency Injection, Creating Services, Factory Service and Provider.
Jan,2021	**Presentation Designing:** Starting Presentation software, Creating New Presentation, adding slides, Entering/Editing Text in Slides, Formatting text and paragraph, inserting a picture, ClipArt and Screenshot, Inserting Chart, Shapes, Word Art, Text Box, Inserting table, PowerPoint Views, Slideshow, Slide Transition Effects, Animation, Inserting Video and Audio, Printing Presentation Slides	**Using Windows Operating System:** What is an Operating System, Main functions of an Operating System, Starting Windows, Using the Mouse, Start Menu, Shutting Down, Customizing the Desktop, Maximizing Minimizing Restoring Moving Resizing and Closing an Application Window, Control Panel , Taskbar, Window Explorer, Creating new Folder or File, copying and moving files and folders, Recycle Bin, Using System Tools,	SPA, Pros and Cons of SPA, Passing Parameters, Changing Location. ngAnimate module, CSS Transforms.

		User Accounts, Creating Shortcuts on Desktop, Windows Media Player, Windows accessories.	

- Vacation as per university calendar
- 2 assignments and 01-unit test will be taken as per schedule.