DEPARTMENT OF COMPUTER SCIENCE
(Lesson Plan)

SESSION (2020-21)

LESSON PLANS
SESSION (2020-21)
CLASS- BCA I (1st Sem.)
Subject-Computer& Programming Fundamental (BCA-111)

Week	Odd Sem	Topics
1	Nov 2-7,2020	Computer fundamentals:Definition,Block Diagram of computer withits components,chatracteristics and classification of Computer
2	Nov 9-14,2020	Concept Of Primary Memory& Secondary Memory,Ram
3	Nov. 16-21,2020	Rom,Types Of Ram,flash Memory,Secondary Storage Devices:magnetic tape,Magnetic Disk,CD,DvD
4	Nov. 23-28,2020	Computer Hardware& software:I/o Devices,Relation Between Harware& Software
5	Nov 30- Dec. 5,2020	Types of Software,Operating system and its functions
6	Dec 7-12,2020	Concept of Multiprogramming,Multitasking,Multithreading,Multiprocessing,Time sharing,
7	Dec. 14-19,2020	Real Operating System,single User &Multiuser Operating System
8	Dec 21-26, 2020	Concept Of Problem Solving,Problem definition,Program Design,Debuggimg,Types of error in Programming
9	Dec. 28 2020-Jan 2,2021	Documentation,Techniques Of Problem Solving,FlowChart,Algorithms,Psuedo Codes
10	Jan 4-9,2021	Decision table,Structured Programming Concepts,programming Methodologies:Top-down and Bottom-up approach
11	Jan. 11-16,2021	Searching And Sorting Techniques
12	Jan 18-23, 2021	Designs of algorithms For Searching,sorting and Merging
13	Jan 25-30, 2021	Computer Languages
14	Feb 1-6, 2021	Revision Test on Algorithms
15	Feb 8-13,2021	Langauge translators,Characterstics of a Good Programming Language, Computer Virus,Worms,Trojan
16	Feb 15-20, 2021	Sessional Test

CLASS- BCA I (1st Sem.)
Subject-Windows and PC Software (BCA-112)

Week	Odd Sem	Topics
1	Nov 2-7,2020	Introduction to Windows and its Features, Hardware Requirements of Windows. Windows Concepts
2	Nov 9-14,2020	Windows Structure, Desktop, Taskbar, Start Menu, My Pictures, My Music, My Documents, Recycle Bin
3	Nov. 16-21,2020	Managing Files, Folders and Disk,My Computer, Windows Explorer and its Facilities ,.Test
4	Nov. 23-28,2020	Using CD, DVD, Pen Drive, Burning CD. Windows Accessories. Media Players, Sound Recorder, Volume Control.
5	Nov 30- Dec. 5,2020	Managing Hardware & Software - Installation of Hardware & Software, Using Scanner,,
6	Dec 7-12,2020	Web Camera, Printers, Backup, Character Map, Clipboard Viewer, Disk Defragmenter, Drive Space, Scandisk
7	Dec. 14-19,2020	System Information, System Monitor,Disk Cleanup, Using Windows Update
8	Dec 21-26, 2020	Browsing the Web with Internet Explorer, Multiple User Features of Windows, Creating and Deleting User.
9	Dec. 28 2020-Jan 2,2021	Changing User Password,Sharing Folders and Drives, Browsing the Entire Network, Using Shared Printers. Control Panel & its components
10	Jan 4-9,2021	Introduction and area of use, Working with Excel, Toolbars, Menus and Keyboard,Test
11	Jan. 11-16,2021	Shortcuts, concepts of Workbook & Worksheets, Using Wizards, Various Data Types, Using different features with Data,

12	Jan 18-23, 2021	Cell and Texts, Inserting, Removing & Resizing of Columns & Rows, Working with Data & Ranges, Different Views of Worksheets,Test
13	Jan 25-30, 2021	Column Freezing, Labels, Hiding, Splitting etc., Using different features with Data and Text, Cell Formatting including Borders & Shading
14	Feb 1-6, 2021	Multiple Worksheets: Concept, Creating and Using Multiple Worksheets; Use of Formulas,Calculations & Functions
15	Feb 8-13,2021	Cell Referencing, Absolute and Relative Addressing, Various types of Functions,Working with Different Chart Types, Chart Wizard
16	Feb 15-20, 2021	Printing of Workbook ,Creation, Sorting, Query and Filtering a Database; Creating and Using Macros; Pivot table & Pivot chart,Test

CLASS- BCA I (1st Sem.)
Subject- Logical Organization of computer-I (BCA-114)

Week	Odd Sem	Topics
1	Nov 2-7,2020	Number Systems,Binary Arithmetic, Representation of numbers
2	Nov 9-14,2020	BCD Codes, Error detecting and correcting codes
3	Nov. 16-21,2020	Character Representation – ASCII, EBCDIC
4	Nov. 23-28,2020	: Boolean Algebra, Boolean Theorems, Boolean Functions
5	Nov 30- Dec. 5,2020	Truth Tables,Test
6	Dec 7-12,2020	Canonical forms of Boolean functions,Test
7	Dec. 14-19,2020	Standard forms of Boolean functions
8	Dec 21-26, 2020	Simplification of Boolean Functions
9	Dec. 28 2020-Jan 2,2021	Venn Diagram, Karnaugh Maps
10	Jan 4-9,2021	AND, OR, NOT, Universal Gates – NAND, NOR
11	Jan. 11-16,2021	XOR, XNOR , Implementations of digital circuits
12	Jan 18-23, 2021	Combinational Logic – Characteristics, Design Procedures, analysis procedures
13	Jan 25-30, 2021	Combinational Circuits: Half-Adder, Full-Adder, Half-Subtractor
14	Feb 1-6, 2021	Full-Subtractor, Encoders,Test
15	Feb 8-13,2021	Decoders, Multiplexers, Demultiplexers, Comparators, Code Converters.
16	Feb 15-20, 2021	Sessional

CLASS- BCA I (1st Sem.)
Subject- Programming in C (BCA-116)

Week	Odd Sem	Topics
1	Nov 2-7,2020	Overview of C: History of C, Importance of C, Structure of a C Program
2	Nov 9-14,2020	C character set , identifiers and keywords, Data types
3	Nov. 16-21,2020	Constants and Variables , Assignment statement, Symbolic constant, scanf(), printf()
4	Nov. 23-28,2020	putch(), putchar(), puts())., getch(), getche(), getchar(), gets())
5	Nov 30- Dec. 5,2020	Arithmetic, relational, logical, bitwise, unary, assignment,conditional operators and special operators.
6	Dec 7-12,2020	Arithmetic expressions, evaluation of arithmetic expression
7	Dec. 14-19,2020	Type casting and conversion, operator hierarchy & associativity
8	Dec 21-26, 2020	Decision making with IF statement, IF-ELSE statement, Nested IF statementELSE-IF ladder, switch
9	Dec. 28 2020-Jan 2,2021	statement, goto statement
10	Jan 4-9,2021	Decision making & looping: For, while, and do-while loop
11	Jan. 11-16,2021	jumps in loops, break, continue statement
12	Jan 18-23, 2021	Functions: Definition, prototype, passing
13	Jan 25-30, 2021	parameters Recursion, Storage classes in C
14	Feb 1-6, 2021	Arrays: Definition, types, initialization, processing an array,
15	Feb 8-13,2021	passing arrays to functions, Strings,Arrays
16	Feb 15-20, 2021	Revision

CLASS- BCA I (2nd Sem.)

Subject- Advance Programming in C (BCA-121)

Week	Even Sem	Topics
1	April 15-17, 2021	Strings in 'C': Introduction, Declaration and initialization of string, String I/O, Array of strings
2	April 19-24,2021	String manipulation functions, Introduction, Features of structures, Declaration and initialization of structures
3	April 26- May 1,2021	Structure within structure, Array of structures, Structure and functions. Union: Introduction, Union of structures. Typedef, Enumerations
4	May 3-8 ,2021	Pointers: Introduction, Pointer variables, Pointer operators, Pointer assignment
5	May 10-15,2021	Pointer conversions, Pointer arithmetic, Pointer comparison
6	May 17-22,2021	Pointers and arrays, Pointers and functions, Pointers and strings
7	May 24-29,2021	Pointer to pointer, dynamic allocation using pointers.
8	May 31- June 5,2021	Preprocessor: Introduction, #define, macros, macro versus functions
9	June 7-12,2021	#include, Conditional compilation directives, undefining a macro
10	June 14-19, 2021	Command line arguments: defining and using command line arguments.
11	June 21-26,2021	Files: Introduction, File types,File operations, File I/O,Structure Read and write in a file
12	June 28- July3,2021	Errors in file handling, Random-access I/O in files
13	July 5-10,2021	Revision

CLASS- BCA I (2nd Sem.)
Subject- Logical Organization of computer-II (BCA-122)

Week	Even Sem	Topics
1	April 15-17, 2021	Sequential Logic: Characteristics, Flip-Flops
2	April 19-24,2021	Clocked RS, D type, JK, T type
3	April 26- May 1,2021	Master- Slave flip-flops. State table, state diagram,Flip-flop excitation tables,Test
4	May 3-8 ,2021	Sequential Circuits: Designing registers – Serial Input Serial Output (SISO)
5	May 10-15,2021	Serial Input Parallel Output (SIPO), Parallel Input Serial Output (PISO),Parallel Input Parallel Output (PIPO) and shift registers
6	May 17-22,2021	Designing counters – Asynchronous and Synchronous Binary Counters
7	May 24-29,2021	Modulo-N Counters and Up-Down Counters,Test
8	May 31- June 5,2021	Memory & I/O Devices: Memory Parameters, Semiconductor RAM, ROM
9	June 7-12,2021	Magnetic and Optical Storage devices, Flash memory
10	June 14-19, 2021	I/O Devices and their controllers,Instruction Design & I/O Organization: Machine instruction
11	June 21-26,2021	Instruction set selection,Instruction cycle, Instruction Format
12	June 28- July 3,2021	Addressing Modes, I/ O Interface, Interrupt structure
13	July 5-10,2021	Program-controlled, Interrupt-controlled & DMA transfer, I/O Channels, IOP

CLASS- BCA I (2nd Sem.)
Subject- Office automation Tools (BCA-124)

Week	Even Sem	Topics
1	April 15-17, 2021	Desktop Publishing: Concept, Need and Applications; Hardware and Software requirements for DTP,
2	April 19-24,2021	An Overview and comparison between DTP packages, Common features of DTP. Introduction to Page Maker: Features
3	April 26- May 1,2021	System Requirements, Components of Page Maker Window, Introduction to Menu and Toolbars, PageMaker Preferences
4	May 3-8 ,2021	Creating of Publications: Starting PageMaker, Setting Page size, Placing the text Formatting the text: Character Specification
5	May 10-15,2021	Paragraph setting: Paragraph Specification, Paragraph Rules, Spacing, Indents/Tabs, Define Styles, Hyphenation, Header & Footer,Test
6	May 17-22,2021	Page Numbering, Saving and Closing publication.Editing Publication: Open a publication ,Story editor
7	May 24-29,2021	Find and change the text, Change characterParagraph attributes ,spell checking ,Selecting text, Cut, Copy, Paste, Paste multiple
8	May 31- June 5,2021	Working with columns,Word Processing: Introduction to Office Automation,Creating & Editing Document, Formatting Document
9	June 7-12,2021	Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary,Page Formatting, Bookmark, Advance Features of Word-Mail Merge, Macros
10	June 14-19, 2021	Tables, File Management, Printing, Styles, linking and embedding object,Presentation using PowerPoint: Presentations
11	June 21-26,2021	Creating, Manipulating & Enhancing Slides,Organizational Charts, Excel Charts, Word Art, Layering art Objects, Animations and Sounds
12	June 28- July 3,2021	Inserting Animated Pictures or Accessing through Object
13	July 5-10,2021	Inserting Recorded Sound Effect or In-Built Sound Effect.

CLASS- BCA I (2nd Sem.)
Subject- Structured System Analysis & Design (BCA-125)

Week	Even Sem	Topics
1	April 15-17, 2021	System Concept: Definition, Characteristics, Elements of system, Physical and abstract System
2	April 19-24,2021	open and closed system,man-made information systems,System Development Life Cycle: Various phases of system development
3	April 26- May 1,2021	Considerations for system planning and control for system success,Role of system analyst
4	May 3-8 ,2021	System Planning: Bases for planning in system analysis: Dimensions of Planning
5	May 10-15,2021	Initial Investigation: Determining user's requirements and analysis, fact finding process and techniques
6	May 17-22,2021	Tools of structured Analysis: Data Flow diagram, data dictionary, IPO and HIPO charts,Gantt charts, pseudo codes
7	May 24-29,2021	Flow charts, decision tree, decision table,Feasibility study: Technical, Operational & Economic Feasibilities.
8	May 31- June 5,2021	Cost/Benefit Analysis: Data analysis cost and benefit analysis of a system,Input/ Output and Form Design
9	June 7-12,2021	File Organization and database design: Introduction to files and database,File structures and organization, objectives of database design
10	June 14-19, 2021	Logical and physical view of data,System testing: Introduction, objectives of testing, test planning, testing techniques
11	June 21-26,2021	Quality assurance: Goal of quality assurance, levels of quality assurance system,Implementation and software maintenance
12	June 28- July 3,2021	primary activities in maintenance,reducing maintenance cost
13	July 5-10,2021	Revision test

CLASS- BCA II (3rd Sem.)
Subject- Object Oriented Programming Using 'C++' (BCA-231)

Week	Odd Sem	Topics
1	Nov 2-7,2020	Object-Oriented programming features and benefits.
2	Nov 9-14,2020	Object-Oriented features of C++, Class and Objects, Data Hiding & Encapsulation
3	Nov. 16-21,2020	Data members and Member functions, Scope resolution operator and its significance
4	Nov. 23-28,2020	Structures,Static Data Members,Static member functions
5	Nov 30- Dec. 5,2020	Nested and Local Class, Accessing Members of Class and Structure
6	Dec 7-12,2020	Constructor, Initialization using constructor, types of constructor– Default, Parameterized constructor
7	Dec. 14-19,2020	Copy Constructors, Constructor overloading, Default Values to Parameters, Destructors Assignment-I
8	Dec 21-26, 2020	Console I/O: Hierarchy of Console Stream Classes, Unformatted I/O Operations
9	Dec. 28 2020-Jan 2,2021	Formatted I/O OperationsManipulators, Friend Function, Friend Class,
10	Jan 4-9,2021	Arrays, Array of Objects, Passing and Returning Objects to Functions
11	Jan. 11-16,2021	String Handling in C++
12	Jan 18-23, 2021	Dynamic Memory Management: Pointers, new and delete Operator Assignment-II
13	Jan 25-30, 2021	this Pointer, Passing Parameters to Functions by Reference & pointers.
14	Feb 1-6, 2021	Polymorphism: Operators in C++, Precedence and Associativity Rules
15	Feb 8-13,2021	Operator Overloading, Unary & Binary Operators Overloading, Function Overloading, Inline Functions
16	Feb 15-20, 2021	Revision, Test

CLASS- BCA II (3rd Sem.)
Subject- Data Structures (BCA-232)

Week	Odd Sem	Topics
1	Nov 2-7,2020	Elementary Data Organization, Data Structure Definition, Data type vs Data Structure, Categories of data structure
2	Nov 9-14,2020	Data Structure Operations, Algorithms, Complexity and time-space tradeoff, Big O notation
3	Nov. 16-21,2020	Arrays, Types of arrays, one dimensional arrays, sequential allocation , address calculation of elements of 1-D array, Operations on 1-D array : Traversing, insertion
4	Nov. 23-28,2020	Deletion in an array, Searching and sorting, Two dimensional arrays, sequential allocation in memory, address computation.
5	Nov 30- Dec. 5,2020	Three dimensional arrays, general multi dimensional arrays, sparse arrays, pointers and records
6	Dec 7-12,2020	Introduction to linked lists, representation of linked lists in memory, traversing a linked list, searching an element in a linked list
7	Dec. 14-19,2020	free storage lists, garbage collection, insertion, Deletion from a linked list
8	Dec 21-26, 2020	Implementation of a linked list, Header linked list, Circular Linked lists,Two way linked lists
9	Dec. 28 2020-Jan 2,2021	Introduction to stacks, array and linked representation of stacks, operations on stacks and their algorithms.
10	Jan 4-9,2021	Applications of stacks: Polish notation for arithmetic expressions, recursion, Introduction to queues
11	Jan. 11-16,2021	Implementation of queues as array and linked lists, Operations on queue, Deques, Prioriety queues, applications of queues
12	Jan 18-23, 2021	Introduction to trees, definition of terms related to trees, Binary trees, storage representation using arrays and linked lists
13	Jan 25-30, 2021	basic operations, tree traversal,Expression tree, traversal algorithms.
14	Feb 1-6, 2021	Introduction to graphs, Graph theory terminology, sequential and linked representation of graphs
15	Feb 8-13,2021	Traversing a graph
16	Feb 15-20, 2021	Revision

CLASS- BCA II (3rd Sem.)
Subject- Computer Architecture (BCA-233)

Week	Odd Sem	Topics
1	Nov 2-7,2020	Basic Computer Organisation and Design ,Instruction Codes
2	Nov 9-14,2020	Computer,Computer Instructions, Timing and Control registers
3	Nov. 16-21,2020	Instruction Cycle,Input-Output and Interrupt, Memory reference instructions
4	Nov. 23-28,2020	Design of Basic computer,Design of accumulator logic, Design ofControl Unit
5	Nov 30- Dec. 5,2020	Register Transfer and Microoperations: Register Transfer Language(RTL)
6	Dec 7-12,2020	register transfer, Bus and Memory Transfers, ArithmeticMicrooperations
7	Dec. 14-19,2020	Logic Microoperations, Shift Microoperations,Arithmetic Logic Shift Unit
8	Dec 21-26, 2020	Microprogrammed Control: Controlmemory; address sequencing, microprogram sequencer,
9	Dec. 28 2020-Jan 2,2021	Central Processing Unit: General registers Organization, StackOrganization
10	Jan 4-9,2021	Instruction formats, Addressing Modes, Data Transferand Manipulation
11	Jan. 11-16,2021	Program Control, Program Interrupt, RISC, CISC
12	Jan 18-23, 2021	Memory hierarchy, Auxiliary Memory,Associative Memory, Interleaved memory, Cache memory
13	Jan 25-30, 2021	VirtualMemory, Memory Management Hardware, Input Output Organization
14	Feb 1-6, 2021	Input-Output Interface, Asynchronous datatransfer, Modes of Transfer, Priority Interrupt
15	Feb 8-13,2021	Direct MemoryAccess(DMA),Input-Output Processor(IOP).
16	Feb 15-20, 2021	sessionals

CLASS- BCA II (3rd Sem.)
Subject- Software Engineering (BCA-234)

Week	Odd Sem	Topics
1	Nov 2-7,2020	Software Engineering, Programmingparadigms, Software Crisis
2	Nov 9-14,2020	problem and causes, Phases in Softwaredevelopment: Requirement Analysis, Software Design
3	Nov. 16-21,2020	Coding, Testing,Maintenance, Software Development Process Models
4	Nov. 23-28,2020	Waterfall,P rototype, Evolutionary and Spiral models, Role of Metrics
5	Nov 30- Dec. 5,2020	Feasibility Study, Software Requirement Analysis and Specifications: SRS, Need for SRS
6	Dec 7-12,2020	Characteristics of an SRS, Components of an SRS, Problem Analysis, Information gathering tools
7	Dec. 14-19,2020	Organizing and structuring information, Requirement specification,validation and Verification.. SCM
8	Dec 21-26, 2020	Data Flow Diagram, Data Dictionary,Decision table, Decision tress
9	Dec. 28 2020-Jan 2,2021	Structured English, Entity-Relationship diagrams
10	Jan 4-9,2021	Cohesion and Coupling.Gantt chart, PERT Chart, Software Maintenance: Type of maintenance
11	Jan. 11-16,2021	Management of Maintenance, Maintenance Process, maintenancec haracteristics
12	Jan 18-23, 2021	COCOMO model, Projects cheduling, Staffing and personnel planning
13	Jan 25-30, 2021	team structure, Softwareconfiguration management, Quality assurance plans
14	Feb 1-6, 2021	Projectmonitoring plans, Risk Management. Software testing strategies
15	Feb 8-13,2021	unit testing, integration testing, Validation testing, System testing, Alphaand Beta testing.
16	Feb 15-20, 2021	Revision

CLASS- BCA II (3rd Sem.)
Subject- Fundamentals of Database Systems (BCA-235)

Week	Odd Sem	Topics
1	Nov 2-7,2020	Basic Concepts – Data, Information, Records and files
2	Nov 9-14,2020	Traditional file based Systems-File Based Approach, Limitations of File Based Approach
3	Nov. 16-21,2020	Database Approach-Characteristics of Database Approach
4	Nov. 23-28,2020	Database Management System (DBMS), Components of DBMS Environment,
5	Nov 30- Dec. 5,2020	DBMS Functions and Components, Advantages and Disadvantages of DBMS Test
6	Dec 7-12,2020	Roles in the Database Environment - Data and Database Administrator, Database Designers
7	Dec. 14-19,2020	Applications Developers and Users Database System Architecture – Three Levels of Architecture Assignment-I
8	Dec 21-26, 2020	External, Conceptual and Internal Levels, Schemas, Mappings and Instances
9	Dec. 28 2020-Jan 2,2021	Data Independence – Logical and Physical Data Independence, Classification of Database Management System
10	Jan 4-9,2021	Centralized and Client Server architecture to DBMS,Data Models: Records- based Data Models
11	Jan. 11-16,2021	Object-based Data Models, Physical Data Models and Conceptual Modeling
12	Jan 18-23, 2021	Entity-Relationship Model – Entity Types, Entity Sets, Attributes Relationship Types
13	Jan 25-30, 2021	Relationship Instances and ER Diagrams Assignment-II

14	Feb 1-6, 2021	Relational Data Model Brief History, Terminology in Relational Data Structure, Relations	
15	Feb 8-13,2021	Properties of Relations, Keys, Domains, Integrity Constraints over Relations	
16	Feb 15-20, 2021	Base Tables and Views,Basic Concepts of Hierarchical and Network Data Model	Revision

CLASS- BCA II (3rd Sem.)
Subject- Computer Oriented Numerical Methods (BCA-236)

Week	Odd Sem	Topics
1	Nov 2-7,2020	Computer Arithmetic: Floating-point representation of numbers,
2	Nov 9-14,2020	arithmetic operations with normalized floating-point numbers and their consequences, significant figures
3	Nov. 16-21,2020	Error in number representation-inherent error, truncation, absolute,relative, percentage and round-off error
4	Nov. 23-28,2020	Iterative Methods: Bisection, False position, Newton-Raphson method.Iteration method, discussion of convergence,
5	Nov 30- Dec. 5,2020	Solution of simultaneous linear equations and ordinary differential equations:
6	Dec 7-12,2020	Gauss-Elimination methods, pivoting
7	Dec. 14-19,2020	Ill-conditionedequations, refinement of solution. Gauss-Seidal iterative method,
8	Dec 21-26, 2020	Eulermethod, Euler modified method, Taylor-series method,
9	Dec. 28 2020-Jan 2,2021	Runge kutta,predictor-corrector methods
10	Jan 4-9,2021	Interpolation and Approximation: Polynomial interpolation: Newton, Lagranges, Difference tables,
11	Jan. 11-16,2021	Approximation of functions by Taylor Series.
12	Jan 18-23, 2021	Chebyshev polynomial: First kind, Second kind and their relations,Orthogonal properties
13	Jan 25-30, 2021	Numerical Differentiation and integration: Differentiation formulae based on polynomial fit
14	Feb 1-6, 2021	pitfalls in differentiation,Trapezoidal & Simpson Rules,
15	Feb 8-13,2021	Gaussian Quadrature
16	Feb 15-20, 2021	REVISION

CLASS- BCA II (4th Sem.)
Subject- Advance Data Structures (BCA-241)

Week	Even Sem	Topics
1	April 15-17, 2021	Trees: Introduction, Definition, Representing binary tree in memory
2	April 19-24,2021	Traversing Binary Trees, traverasal algorithms using stacks,
3	April 26- May 1,2021	Binary Search Tress : Introduction, Searching
4	May 3-8 ,2021	Binary Search Tress: Searching, Insertion, Deletion
5	May 10-15,2021	Huffman's Algorithm, General Trees, Graphs: Introduction, Graph theory terminology
6	May 17-22,2021	Sequentials and linked reporesentation of graph
7	May 24-29,2021	Operations on graphs,Traversal algorithms in graphs and their implemetation
8	May 31- June 5,2021	Dijkstra algorithm for shortest path, Warshall's algorithm for shortest path
9	June 7-12,2021	Sorting: Internal & External, Radix Sort,Quick Sort, Heap Sort, Merge Sort
10	June 14-19, 2021	Tournament Sort, Comparison of various sorting and searching algorithms on the basis of complexity
11	June 21-26,2021	Files: Introduction, attributes of a fileClassification of files, files operations, Comparison of various types of files
12	June 28- July 3,2021	File organization: Sequential, Indexed-sequential, Random access.
13	July 5-10,2021	Hashing: Introduction, Collision resolution

CLASS- BCA II (4th Sem.)
Subject- Advance Programming Using 'C++' (BCA-242)

Week	Even Sem	Topics
1	April 15-17, 2021	Dynamic Polymorphism: Function Overriding
2	April 19-24,2021	Virtual Function and its Need, Pure Virtual Function
3	April 26- May 1,2021	Abstract Class, Virtual Derivation
4	May 3-8 ,2021	Virtual Destructor, Type Conversion: Basic Type Conversion
5	May 10-15,2021	Conversion between objects and basic types Assignment-I
6	May 17-22,2021	Conversion between objects of different classes.
7	May 24-29,2021	Inheritance ,Rules of Derivations Private, Protected and Public Derivations.
8	May 31- June 5,2021	Different Forms of Inheritance – Single, Multiple, Multilevel Hierarchical and Multipath
9	June 7-12,2021	Roles of Constructors and Destructors inInheritance,Genericity in C++: Templates in C++
10	June 14-19, 2021	Function templates,Class templates in C++ Assignment-II
11	June 21-26,2021	Exception Handling in C++: try, throw and catch
12	June 28- July 3,2021	Files I/O in C++: Class Hierarchy for Files I/O, Text versus Binary Files
13	July 5-10,2021	Opening and Closing Files , File Pointers, Operation on files.

CLASS- BCA II (4th Sem.)
Subject- E-Commerce (BCA-243)

Week	Even Sem	Topics
1	April 15-17, 2021	Introduction to E-Commerce:-Business operations; E-commerce practices vs.Features of E-Commerce, traditional,business practices; concepts of b2b, b2c,c2c,b2g,g2h,g2c;
2	April 19-24,2021	Types of Ecommerce Systems, Elements of E-Commerce, principles of E-Commerce,Benefits and Limitations of E-Commerce.
3	April 26- May 1,2021	Management Issues relating to e-commerce. Operations of E-commerce: Credit cardtransaction;
4	May 3-8 ,2021	Secure Hypertext Transfer Protocol (SHTP); Electronic payment systems;(SET) SET`s encryption; Process; Cybercash; Smart cards;
5	May 10-15,2021	Applications in governance: EDI in governance; E-government; E-Governanceapplications of Internet;
6	May 17-22,2021	concept of government –to- business, business-to-government,Private sector interface in Egovernance.and citizen-to-government; E-governance models
7	May 24-29,2021	Applications in B2C: Consumers shopping procedure on the Internet,Impact on disinter mediation and re-intermediation; Global market; Strategy of traditional department stores.
8	May 31- June 5,2021	Products in b2c model; success factors of e-brokers; Broker-based services ;travel tourism services; Benefits and impact of e-commerce on travel industry
9	June 7-12,2021	Online real estate market; online stock trading and its benefits; Online banking and its benefits,E-auctions – benefits, implementation and impact.
10	June 14-19, 2021	Applications in B2B: Key technologies for b2b; architectural models of b2b,characteristics of the supplier –oriented marketplace
11	June 21-26,2021	buyer-oriented marketplace andi ntermediary-oriented marketplace; Just In Time delivery in b2b,Internet-based EDIfrom traditional EDI;
12	June 28- July 3,2021	Marketing Issues in b2b.\Emerging Business models: Retail model,Media model; advisory model, made-to-order,manufacturing model;Do-it-yourself model;
13	July 5-10,2021	Information service model; Emerging,Hybrid models,Emerging models in India, Internet & E-Commerce scenario in India; Internetsecurity Issues; Legal aspects of E-commerce

CLASS- BCA II (4th Sem.)
Subject- Relational Database Management System (BCA-244)

Week	Even Sem	Topics
1	April 15-17, 2021	Relational Model Concepts, Codd's Rules for Relational Model
2	April 19-24,2021	Relational Algebra Selection and Projection, Set Operation, Renaming
3	April 26- May 1,2021	Join and Division, Relational Calculus: Tuple Relational Calculus
4	May 3-8 ,2021	Domain Relational Calculus Test
5	May 10-15,2021	Functional Dependencies and Normalization Purpose, Data Redundancy and Update Anomalies
6	May 17-22,2021	Functional Dependencies,Full Functional Dependencies
7	May 24-29,2021	Transitive Functional Dependencies, Characteristics of Functional Dependencies
8	May 31- June 5,2021	Decomposition and Normal Forms (1NF, 2NF, 3NF & BCNF) Assignment-I
9	June 7-12,2021	SQL: Data Definition and data types,SQL Operators, Specifying Constraints in SQL, Basic DDL DML and DCL commands
10	June 14-19, 2021	Simple Queries,Nested Queries, Tables, Views, Indexes,Aggregate Functions, Clauses Assignment-II
11	June 21-26,2021	PL/SQL architecture, PL/SQL and SQL*Plus, PL/SQL Basics, Advantages of PL/SQL
12	June 28- July 3,2021	The Generic PL/SQL Block: PL/SQL Execution Environment, PL/SQL Character set and Data Types
13	July 5-10,2021	Control Structure in PL/SQL, Cursors in PL/SQL,Triggers in PL/SQL, Programming using PL/SQL

CLASS- BCA II (4th Sem.)
Subject- Computer Oriented Statisical Methods (BCA-245)

Week	Even Sem	Topics
1	April 15-17, 2021	Basic Statistics: Preparing Frequency Distribution Table and Cumulative frequency,Measure of Central Tendency, Types: Arithmeticmean
2	April 19-24,2021	Geometric Mean, Harmonic Mean, Median, Mode,Measure of Dispersion: Range, Quartile Deviation, mean deviation,Coefficient of mean Deviation, Standard Deviation
3	April 26- May 1,2021	Moments : Moments About mean, Moments about any point, Moment about origin, Moment about mean in terms of moment about any point,Moment about any point in terms of Moment about mean.
4	May 3-8 ,2021	Probability Distribution: Random Variable- Discrete Random and Continuous Random variable,Probability Distribution of a Random Variable, Mathematical Expectation
5	May 10-15,2021	Types: Binomial, Poisson, Normal Distribution, Mean and Variance ofBinomial, Poisson, and Normal Distribution.
6	May 17-22,2021	Correlation: Introduction, Types, Properties, Methods of Correlation: Karl Pearson's Coefficient of Correlation, Rank Correlation.
7	May 24-29,2021	Concurrent Deviation method, Probable error.Regression: Introduction, Aim of Regression Analysis, Types of Regression Analysis, Lines of
8	May 31- June 5,2021	Properties of Regression ,Curve Fitting: Straight Line, Parabolic curve,Geometric Curve and Exponential Curve
9	June 7-12,2021	Baye's Theorem in Decision Making, Forecasting Technique,Sample introduction, Sampling: Meaning, methods of Sampling
10	June 14-19, 2021	Statistical Inference: Test of Hypothesis, Types of hypothesis,Procedure of hypothesis Testing, Type I and Type II error, One Tailed and two tailed Test,
11	June 21-26,2021	Types of test of Significance: Test of significancefor Attribute-Test of No. of success and test of proportion of success,
12	June 28- July 3,2021	Test of significance for large samples - Test of significance for singlemean and Difference of mean
13	July 5-10,2021	Test of significance for small samples(t-test) – test the significance between the mean of a random sample,between the mean of two independent samples

CLASS- BCA II (4ᵗʰ Sem.)
Subject- Management Information System (BCA-246)

Week	Even Sem	Topics
1	April 15-17, 2021	Introduction to system and Basic System Concepts, Types of Systems,The Systems Approach
2	April 19-24,2021	Information System: Definition &Characteristics, Types of information, Role of Information in Decision-Making
3	April 26- May 1,2021	Sub-Systems of an Information system: EDP and MIS management levels, EDP/MIS/DSS.
4	May 3-8 ,2021	Definition &Characteristics, Components of MIS, Frame Work for UnderstandingMIS
5	May 10-15,2021	Information requirements & Levels of Management,
6	May 17-22,2021	Formal vs.Informal systems,Developing Information Systems: Analysis & Design of InformationSystems
7	May 24-29,2021	Implementation & Evaluation, Pitfalls in MIS Development
8	May 31- June 5,2021	Simon's Modelof decision-Making, Functional MIS: A Study of Personnel
9	June 7-12,2021	Financial and production MIS
10	June 14-19, 2021	Introduction to e-business systems,ecommerce – technologies,applications
11	June 21-26,2021	Decision support systems,support systems for planning
12	June 28- July 3,2021	control and decision-making,Structured Vs Un-structured decisions,
13	July 5-10,2021	Revision

CLASS- BCA III (5ᵗʰ Sem.)
Subject- Web Designing Fundamentals (BCA-351)

Week	Odd Sem	Topics
1	Nov 2-7,2020	Introduction to Internet and World Wide Web; Evolution and History of World Wide Web; Basic
2	Nov 9-14,2020	Features; Web Browsers;
3	Nov. 16-21,2020	Web Servers; Hypertext Transfer Protocol; URLs; Searching
4	Nov. 23-28,2020	Web-Casting Techniques; Search Engines and Search Tools
5	Nov 30- Dec. 5,2020	Steps for Developing Website; Choosing the Contents; Home Page; Domain Names;
6	Dec 7-12,2020	Internet Service Provider; Planning and Designing Web Site;
7	Dec. 14-19,2020	Creating a Website; Web Publishing: Hosting Site;
8	Dec 21-26, 2020	Introduction to HTML; Hypertext and HTML; HTML Document Features;HTML Tags;
9	Dec. 28 2020-Jan 2,2021	Header, Title, Body, Paragraph, Ordered/Unordered Line
10	Jan 4-9,2021	Creating Links; Headers; TextStyles; Text Structuring; Text Colors and Background;
11	Jan. 11-16,2021	Formatting Text; Page layouts; Insertion of Text, Movement of Text
12	Jan 18-23, 2021	Images: Types of Images, Insertion of Image, Movement of Image,
13	Jan 25-30, 2021	Ordered and Unordered lists;Inserting Graphics; Table Handling Functions
14	Feb 1-6, 2021	Frame Creation and Layouts;Working with Forms and menus
15	Feb 8-13,2021	Working with Buttons like Radio, Check Box,submit ,reset;Drop down menu
16	Feb 15-20, 2021	Revision

CLASS- BCA III (5ᵗʰ Sem.)
Subject- Operating System-1 (BCA-352)

Week	Odd Sem	Topics
1	Nov 2-7,2020	Operating System: Definition, Characteristics, Components, Functions, Examples; Types of Operating
		System: Single User/Multi User,Classification of Operating System: Batch, Multiprogrammed
2	Nov 9-14,2020	Timesharing, Multiprocessing, Parallel,Distributed, Real Time; System Calls and System Programs:
		Process Control,
3	Nov. 16-21,2020	File Manipulation, Device Manipulation, , Information Maintenance, Communications
		Process Management: Process concept, Process states and Process Control Block
4	Nov. 23-28,2020	; Process Scheduling: Scheduling Queues, Schedulers, Context Switch; Operation on Processes:,
		Process Creation
5	Nov 30- Dec. 5,2020	Process Termination; Cooperating Processes, Introduction to Threads;Inter-process Communication;
6	Dec 7-12,2020	CPU Scheduling: Basic Concepts, Scheduling Criteria, Scheduling Algorithms: FCFS, SJF,
7	Dec. 14-19,2020	Priority, Round-Robin, Multilevel Queue, Multilevel Feedback Queue Scheduling
8	Dec 21-26, 2020	Deadlocks: System Model, Deadlock Characterization, Methods of Handling Deadlocks, Deadlock
9	Dec. 28 2020-Jan 2,2021	Prevention, Deadlock Avoidance, Deadlock Detection and Recovery
		Memory Management: Introduction, Swapping, Contiguous Allocation: Single-Partition/Multiple
10	Jan 4-9,2021	Partition Allocation, External/Internal Fragmentation; Paging: Basic Method, Hardware,
11	Jan. 11-16,2021	Implementation of Page table; Segmentation: Basic Method, Hardware, Implementation of Segment
12	Jan 18-23, 2021	Table, Advantages/Disadvantages of Paging/Segmentation,Virtual Memory: Introduction, Demand
13	Jan 25-30, 2021	Demand Paging, Page Replacement, Page Replacement Algorithms: FIFO
		Optimal, LRU, Counting; Thrashing and its cause; File Management: File Concepts,File Attributes
14	Feb 1-6, 2021	File Operations, File Types, File Access/Allocation Methods, File Protection, File Recovery
15	Feb 8-13,2021	Revision
16	Feb 15-20, 2021	Test

CLASS- BCA III (5ᵗʰ Sem.)
Subject- Artifical Intelligence (BCA-353)

Week	Odd Sem	Topics
1	Nov 2-7,2020	Artificial Intelligence : Intelligence, AI Concepts, Various definitions of AI, Knowledge, Knowledge Pyramid,
2	Nov 9-14,2020	People and Computers: What computers can do better that people, what people can do better than computers; Characteristics of AI Problems
3	Nov. 16-21,2020	Problem Representation in AI, Components of AI, AI Evolution, Application Areas of AI
4	Nov. 23-28,2020	History of AI, The Turing Test, The Revised Turing Test
5	Nov 30- Dec. 5,2020	Expert System: Components of Expert System: Knowledge Base, Inference Engine, User Interface, Features of Expert System
6	Dec 7-12,2020	Expert System Life Cycle, Categories of Expert System, Rule Based vs. Model Based Expert Systems, Advantages/Limitations of Expert System
7	Dec. 14-19,2020	Developing an Expert System: Identification, Conceptualization, Formalization, Implementation, Testing,
8	Dec 21-26, 2020	Using an Expert System, Application Areas of Expert System
9	Dec. 28 2020-Jan 2,2021	AI and Search Process: Brute Force Search – Depth First/Breadth First Search, Heuristic Search: Hill Climbing

10	Jan 4-9,2021	Constraint Satisfaction, Mean End Analysis, Best First Search, A* Algorithm, AO* Algorithm, Beam Search.
11	Jan. 11-16,2021	Natural Language Processing: Introduction, Need, Goal, Fundamental Problems in Natural Language Understanding
12	Jan 18-23, 2021	How People overcome Natural Language Problems,
13	Jan 25-30, 2021	Speech Recognition: Introduction, Advantages and Approaches
14	Feb 1-6, 2021	Introduction to Robotics: Parts of a Robot, Controlling a Robot, Intelligent Robots, Mobile Robots
15	Feb 8-13,2021	Revision
16	Feb 15-20, 2021	Test

CLASS- BCA III (5th Sem.)
Subject- Computer Networks (BCA-354)

Week	Odd Sem	Topics
1	Nov 2-7,2020	Introduction to Data Communication and Computer Networks, Uses of Computer Networks, Types of Computer and Topologies
2	Nov 9-14,2020	Network Hardware Components, Connectors, Transceivers, Repeaters, Hubs, Network Interface Cards and PC Cards, Bridges, Switches, Routers, Gateways
3	Nov. 16-21,2020	Network Software: Network Design issues and Protocols, Connection-Oriented and Connectionless Services, OSI Reference Model
4	Nov. 23-28,2020	Computer Hardware& software:I/o Devices,Relation Between Harware& Software
5	Nov 30- Dec. 5,2020	Networking Models: Distributed Systems, Client/Server Model, Peer-to-Peer Model, Web-Based Model and Emerging File-Sharing Model
6	Dec 7-12,2020	Analog and Digital data and signals, Bandwidth and Data Rate, Capacity, Baud Rate, Transmission Impairment, Data Rate Limits
7	Dec. 14-19,2020	Guided Transmission Media, Wireless Transmission , Communication Satellites, Switching and Multiplexing
8	Dec 21-26, 2020	Modems and Modulation techniques, ADSL and Cable Modems
9	Dec. 28 2020-Jan 2,2021	Data Link Layer Design issues, Error Detection and Correction, Sliding Window Protocols: One-bit, Go Back N and Selective Repeat,
10	Jan 4-9,2021	Media Access Control: ALOHA, Slotted ALOHA, CSMA, Collision free protocols
11	Jan. 11-16,2021	Introduction to LAN technologies: Ethernet, Switched Ethernet, Fast Ethernet, Gigabit Ethernet, Token Ring
12	Jan 18-23, 2021	Introduction to Wireless LANs and Bluetooth, VLANs
13	Jan 25-30, 2021	Routing Algorithms: Flooding, Shortest Path Routing, Distance Vector Routing, Link State Routing, Hierarchical Routing,
14	Feb 1-6, 2021	Congestion Control, Traffic shaping, Choke packets, Load shedding, Elements of Transport Protocols,
15	Feb 8-13,2021	Network Security Issues: Security attacks, Encryption methods, Digital Signature, Digital Certificate
16	Feb 15-20, 2021	Revision Test

CLASS- BCA III (5th Sem.)
Subject- Programming Using Visual Basic (BCA-355)

Week	Odd Sem	Topics
1	Nov 2-7,2020	Visual & Non-Visual programming, Procedural, Object-Based and Event-Driven Programming Languages
2	Nov 9-14,2020	Object-Based and Event-Driven Programming Languages
3	Nov. 16-21,2020	VB as Even-Driven and Object-Based Language
4	Nov. 23-28,2020	Menu bar, Toolbar, Project explorer, Toolbox, Properties Window, Form Designer
5	Nov 30- Dec. 5,2020	Form Layout, Immediate window, Default Controls in Tool Box Visual Development
6	Dec 7-12,2020	Event Driven programming and Test,Variables: Declaring Variables, Types of variables

7	Dec. 14-19,2020	Converting Variables Types,User Defined Data Types, Forcing Variable Declaration, Scope & Lifetime of Variables
8	Dec 21-26, 2020	Constants: Named & Intrinsic, Operators: Arithmetic, Relational & Logical operators
9	Dec. 28 2020-Jan 2,2021	Input/output in VB: Various Controls for I/O, Message box, Input Box, Print statement.
10	Jan 4-9,2021	Decision Statement and Looping Structure in Visual Basic
11	Jan. 11-16,2021	Nested Control Structure; Arrays: Declaring and using Arrays
12	Jan 18-23, 2021	One-dimensional, Two-dimensional and Multi-dimensional Arrays, Static and Dynamic arrays, Array of Arrays.
13	Jan 25-30, 2021	General & Event Procedures, Subroutines, Functions, Calling Procedures,
14	Feb 1-6, 2021	Arguments - Passing Mechanisms, Optional Arguments, Named Arguments, Functions Returning Custom Data Types
15	Feb 8-13,2021	Optional Arguments, Named Arguments, Functions Returning Custom Data Types
16	Feb 15-20, 2021	Sessional test

CLASS- BCA III (5th Sem.)
Subject- Multimedia Tools (BCA-356)

Week	Odd Sem	Topics
1	Nov 2-7,2020	Multimedia: Basic Concept, Definition, Components & Applications of Multimedia; Hypermedia and Multimedia
2	Nov 9-14,2020	Multimedia Hardware and Software; Multimedia Software Tools; Presentation Tools
3	Nov. 16-21,2020	Multimedia Authoring: Introduction, Features, Types of Authoring Tools: Card or Page-Based
4	Nov. 23-28,2020	IconBased, Time-Based, Object-Oriented; VRML: History, Features, **Class Test**
5	Nov 30- Dec. 5,2020	Image Data Types, File Formats
6	Dec 7-12,2020	Color Models in Images and Video; **Assignment-1**
7	Dec. 14-19,2020	Video: Introduction, Types of Video Signals; Analog and Digital Video,Analog Video Standards:NTSC,PAL,SECAM
8	Dec 21-26, 2020	Digital Video Standards: Chroma Subsampling, CCIR Standards, HDTV , **Class Test**
9	Dec. 28 2020-Jan 2,2021	Digital Audio: Basic Concepts, Analog vs. Digital Audio, Digitization of Sound; Digital Audio File Formats,
10	Jan 4-9,2021	MIDI Quantization and Transmission of Audio: Coding of Audio; Pulse Code Modulation
11	Jan. 11-16,2021	Differential Coding of Audio; Lossless Predictive Coding; DPCM; DM; ADPCM, **Revision**
12	Jan 18-23, 2021	Compression Techniques: Introduction, Types of Data Compression, Run-Length Coding
13	Jan 25-30, 2021	VariableLength Coding, Dictionary-Based Coding and **Class Test**
14	Feb 1-6, 2021	Transform Coding Image ,downsample chrominance components,DCT, Quantization
15	Feb 8-13,2021	Video Compression Techniques, **Revision and Class Test ,Assignment-2**
16	Feb 15-20, 2021	JPEG Standard for Image Compression; JPEG Mode, Video Compression Techniques: H.261, H.263, MPEG

CLASS- BCA III (6th Sem.)
Subject- Web Designing Using Advanced Tools (BCA-361)

Week	Even Sem	Topics
1	April 15-17, 2021	Interactivity Tool - JavaScript: Introduction, Features, Data types, Operators, Statements
2	April 19-24,2021	Functions, Event Handling, Use of Predefined Object and Methods, Frames, Windows, Tables
		Images, Links Interactivity Tool - VBScript: Introduction, Features, Variables, Data Types,
3	April 26- May 1,2021	Numeric and Literal Constants, Arrays, Operators, Subroutine Procedures, Function Procedures,
		Control StatementsStrings, Message and Input Boxes,
4	May 3-8 ,2021	Date and Time, Event Handlers, Embedding VBScript in HTML,Interactivity Tool - Active Script

		Pages – Introduction, Features,
5	May 10-15,2021	Client-Server Model, Data Types, Decision Making Statements, Control statements,
		Use of Various Objects of ASP, Various Techniques of Connecting to Database,
6	May 17-22,2021	Other Interactivityb Tools - Macromedia Flash,Macromedia Dreamweaver, PHP: Basic Introduction
		and Features ,DHTML: Introduction, Features
7	May 24-29,2021	, Events,Dynamic Positioning, Layer Object, Properties of STYLE, Dynamic Styles,Inline Styles,Event
		Handlers; Cascading Style Sheets (CSS): Basic Concepts,Properties, Creating Style Sheets; Common
8	May 31- June 5,2021	Tasks with CSS: Text, Fonts, Margins, Links, Tables,Adding Links; Adding Tables; Adding Forms;
		Adding Image and Sound; Use of CSS in HTML Documents Linking and Embedding of CSS in HTML
		Document
9	June 7-12,2021	Microsoft FrontPage: Introduction, Features, Title Bar, Menu bar, FrontPage Tool Bar, Style, Font
		FontFace and Formatting Bar, Scroll Bars
10	June 14-19, 2021	XML: Introduction, Features, XML Support and Usage, Structure of XML Documents,
		XML, Creating Document Type Declarations, Flow Objects,
11	June 21-26,2021	Working with Text and Font, Color and Background Properties;
12	June 28- July 3,2021	Revision
13	July 5-10,2021	Test

CLASS- BCA III (6th Sem.)
Subject- Operating System-II (BCA-362)

Week	Even Sem	Topics
1	April 15-17, 2021	Process Synchronization: The Critical Section Problem – Single Process/Two Process Solutions
		; Semaphores – Types, Implementation
2	April 19-24,2021	Deadlocks and Starvation; Classical Problems of Synchronization – The Bounded Buffer Problem,
		The Readers and Writers Problem, The DiningPhilosophers Problem, Critical Regions, Monitors
3	April 26- May 1,2021	Directory Structure: Single Level, Two Level, Tree Structures, Acyclic Graph, General Graph;
		Directory Implementation, Recovery
4	May 3-8 ,2021	Secondary Storage Structure: Disk Structure, Disk Scheduling: FCFS, SSTF, SCAN, C-SCAN, LOOK;
		Selection of Disk Scheduling Algorithm; Disk Management; Swap Space Management Network
5	May 10-15,2021	Operating Systems: Remote Login, Remote File Transfer;Distributed Operating System: Data
		Migration,Computation Migration, Process Migration,Linux:
6	May 17-22,2021	Introduction, Features, Architecture,Distributions, Accessing Linux System, Login/Logout/Shutting
		Down,Comparison of Linux with other Operating Systems, Commands in Linux: General-Purpose
		Commands,
7	May 24-29,2021	File Oriented Commands, Directory Oriented Commands, Communication Oriented Commands,
		Process Oriented Commands, Redirection of Input and Output, Pipes
8	May 31- June 5,2021	Linux File System: Types of Files in Linux, File Attributes, Structure of File System, inode, File
		Permission, File System Components,
9	June 7-12,2021	Standard File System, File System Types, Disk Related ,
		Processes in Linux: Introduction job Control in Linux using at, batch, corn & time command
10	June 14-19, 2021	The vi editor: Introduction,Modes of vi Editor, Command in vi Editor Shell Programming:
		Introduction,Shell Variables, Shell Keywords, Operators
11	June 21-26,2021	Assigning Values to the Variables, I/O in Shell, Control Structures, Creating & Executing Shell
		Programs in Linux.
12	June 28- July 3,2021	Revision
13	July 5-10,2021	Test

CLASS- BCA III (6th Sem.)
Subject- Computer Graphics (BCA-363)

Week	Even	Topics
1	April 15-17, 2021	Introduction to Computer Graphics; Interactive and Passive Graphics; Applications of Computer GraphicsDisplay Devices: CRT; Random Scan, Raster Scan, ;
2	April 19-24,2021	Refresh Rate and Interlacing, Bit Planes, Color Depth, Color Palette, Color CRT Monitor,
3	April 26- May 1,2021	DVST, Flat-Panel Displays: Plasma Panel, LED, LCD; Lookup Table, Interactive Input Devices, Display Processor and **Revision and Test**
4	May 3-8 ,2021	General Purpose Graphics Software, Coordinate Representations;Point-Plotting Techniques: Scan Conversion,Scan-Converting a Straight Line: The Symmetrical DDA,The Simple DDA
5	May 10-15,2021	Bresenham's Line Algorithm, **Assignment-1,** Converting a Circle: Circle drawing using Polar Coordinates, Bresenham's Circle Algorithm, Scan-Converting an Ellipse: Polynomial Method,
6	May 17-22,2021	Polygon Clipping: Sutherland-Hodgman Polygon Clipping Algorithm; Three-Dimensional Graphics: Three-Dimensional Display Methods; 3-D Transformations: Translation, Rotation, Scaling; Composite Transformations
7	May 24-29,2021	Trigonometric Method; Polygon Area Filling: Scan-line Fill and Flood Fill Algorithms; **Homogeneous Coordinates; Other Transformations: Reflection, Shearing; Coordinate Transformations;**
8	May 31- June 5,2021	Composite Transformations; Inverse Transformation; Affine Transformations; Raster Transformation; Graphical Input: Pointing and Positioning Devices and Techniques
9	June 7-12,2021	Dimensional Viewing: Window and Viewport, 2-D Viewing Transformation Clipping: Point Clipping;
10	June 14-19, 2021	Line Clipping: Cohen-Sutherland Line Clipping Algorithm, Mid-Point Subdivision Line Clipping Algorithm
11	June 21-26,2021	Polygon Clipping: Sutherland-Hodgman Polygon Clipping Algorithm; **Assignment-2**
12	June 28- July 3,2021	Three-Dimensional Graphics: Three-Dimensional Display Methods;
13	July 5-10,2021	3-D Transformations: Translation, Rotation, Scaling; Composite Transformations;

CLASS- BCA III (6th Sem.)
Subject- Internet Technologies (BCA-364)

Week	Even Sem	Topics
1	April 15-17, 2021	Internet: Introduction; History; Internet Services; TCP/IP: Architecture, Layers, Protocols; TCP/IP model versus OSI Model
2	April 19-24,2021	World Wide Web (WWW) - The Client Side, The Server Side, Creating and Searching Information on the Web, Popular Search Engines
3	April 26- May 1,2021	URL, HTTP, Web Browsers, Chat & Bulletin Board, USENET & NNTP (Network News Transfer Protocol); Internet vs. Intranet;
4	May 3-8 ,2021	TCP, UDP and IP Protocols, Port Numbers; Format of TCP, UDP and IP; IPv4 addressing; The need for IPv6; IPv6 addressing
5	May 10-15,2021	Remote Procedure Call; IP Address Resolution- DNS; Domain Name Space; DNS Mapping; Recursive and Iterative Resolution;
6	May 17-22,2021	Mapping Internet Addresses to Physical Addresses: ARP, RARP, DHCP; ICMP; IGMP;Application Layer: Electronic Mail: Architecture
7	May 24-29,2021	Protocols - SMTP, MIME, POP, IMAP; Web Based Mail; File Access and Transfer,FTP, Anonymous FTP,
8	May 31- June 5,2021	TFTP, NFS; Remote Login using TELNET,Voice and Video over IP: RTP, RTCP, IP Telephony and Signaling, RSVP
9	June 7-12,2021	Routing in Internet: RIP, OSPF, BGP; Internet Multicasting; Mobile IP; Private Network Interconnection,Network Address Translation
10	June 14-19, 2021	, Virtual Private Network (VPN); Internet Management and SNMP,Internet Multicasting; Mobile IP; Private Network Interconnection
11	June 21-26,2021	Internet Security: E-Mail Security; Web Security; Firewall; Introduction to IPSec and SSL; Internet Management and SNMP;
12	June 28- July 3,2021	Introduction to IPSec and SSL; Internet Management and SNMP;
13	July 5-10,2021	Revision

CLASS- BCA III (6th Sem.)
Subject- Advanced Programming with Visual Basic (BCA-365)

Week	Even Sem	Topics
1	April 15-17, 2021	Adding, Removing, Counting, Returning Items in a Collection, Processing a Collection,Working with Forms: Form Properties
2	April 19-24,2021	Creating, Adding, Removing Forms in Project, Adding Multiple Forms,Managing Forms at Run Time, Hiding & Showing Forms
3	April 26- May 1,2021	Load & Unload Statements, Drag and Drop Operation,Activate & Deactivate events, Form-load event, Example using Forms
4	May 3-8 ,2021	Programs in VB using Forms,Menu Designing in VB, Adding a Menu to a Form, Modifying and Deleting Menu Items
5	May 10-15,2021	Adding Access Characters,Adding Shortcut Keys, Manipulating Menus using Common Dialog Box,Attaching Code to Events
6	May 17-22,2021	Creating Submenus, Dynamic Menu Appearance,Scroll Bar, Slider Control, Tree View, List View, Rich Text Box Control, Toolbar
7	May 24-29,2021	Status Bar, Progress Bar, Cool bar, Image List,Program Development in VB using Menus and Advance Controls
8	May 31- June 5,2021	: Sequential & Random files, Opening and Closing Data Files, Viewing the Data in a File, Performing Operations on a File
9	June 7-12,2021	Creating and Writing Data to a Sequential File, Reading the Data in a Sequential File, Finding the End of a Data File
10	June 14-19, 2021	Locating a File, Reading and Writing a Random File
11	June 21-26,2021	Using Paint, Line, Circle, Manipulating Graphics Program Development in VB using Files and Graphics
12	June 28- July 3,2021	Data Controls, Data-Bound Controls, DAO, RDO, ADO, Creating the Database, Setting Properties
13	July 5-10,2021	Applying Operations on Database, Viewing the Database, Updating the Database (adding, deleting records)

CLASS- BCA III (6th Sem.)
Subject- Programming In Core Java (BCA-366)

Week	Even Sem	Topics
1	April 15-17, 2021	Basic Principles of Object Oriented Programming, Introduction to Java, History and Features of Java, Java Virtual Machine (JVM),
2	April 19-24,2021	Java's Magic Bytecode; The Java Runtime Environment; Basic Language Elements: Lexical Tokens, Identifiers, Keywords
3	April 26- May 1,2021	Literals, Comments, Primitive Data types, Operators, Assignments; Input/output in Java, Basics, I/O Classes, Reading Console Input
4	May 3-8 ,2021	, Control Structures in Java: Decision and Loop Control Statements, Class and Object in Java: Defining Class in Java, Creating Objects of a Class, Defining Methods, Argument Passing Mechanism
5	May 10-15,2021	Using Class and Objects, Constructors, Nested Class, Inner Class, Abstract Class, Dealing with Static Members; Array & tring in Java: Defining an Array, Initializing & Accessing Array, Multi –Dimensional Array
6	May 17-22,2021	Defining String, Operation on Array and String, Creating Strings using String Class, Creating Strings using StringBuffer ClassPolymorphism in Java: Basic Concept, Types, Overriding vs. Overloading, Implementation
7	May 24-29,2021	Extending Classes and Inheritance in Java: Benefits of Inheritance, Types of Inheritance in Java, Access Attributes, Inheriting Data Members and Methods
8	May 31- June 5,2021	Role of Constructors in Inheritance, Use of "super"; Packages & Interfaces: Basic Concepts of Package and Interface, Organizing Classes and Interfaces in Packages,
9	June 7-12,2021	Defining Package, Adding Classes from a Package to Your Program, CLASSPATH Setting for Packages,Import Package, Naming Convention For Packages , Access Protection in Packages, Standard Packages
10	June 14-19, 2021	Exception Handling in Java: The Idea behind Exception, Types of Exception, Use of try, catch, finally, throw, throws in Exception Handling, In-built and User Defined Exceptions
11	June 21-26,2021	Checked and Un-Checked Exceptions, Catching more than one Exception; Applet in Java: Applet Basics, Applet Architecture, Applet Life Cycle, Applet Tag, Parameters to Applet, Embedding Applets in Web page
12	June 28- July 3,2021	Creating Simple Applets; GUI Programming: Designing Graphical User Interfaces in Java, Components and Containers, Using Containers, Layout Managers, AWT Components, AWT Classes, AWT Controls,
13	July 5-10,2021	Revision

LESSON PLANS
B.Sc. (Computer Science)
SESSION (2020-21)

CLASS- B.Sc. I (1st Sem.)
Paper-I: Computer and Programming Fundamentals

Week	Odd Sem	Topics
1	Nov 2-7,2020	Computer Fundamentals: Definition, Functional components of computer, characteristics &classification of computers
2	Nov 9-14,2020	Applications of computers in various fields, Concept of primary & secondary memory, RAM
3	Nov. 16-21,2020	ROM, types of ROM,Cache memory, CPU Registers, flash memory
4	Nov. 23-28,2020	Secondary storage devices: Sequential & direct access devices viz. magnetic tape, magnetic disk, CD, DVD
5	Nov 30- Dec. 5,2020	Computer hardware & software: I/O devices, definition of software, relationship between hardware and software, types of software
6	Dec 7-12,2020	motherboard, ports,Overview of operating system: Definition, functions of operating system, concept of multiprogramming, multitasking
7	Dec. 14-19,2020	multithreading, multiprocessing, time-sharing, real time,single-user & multi-user operating system
8	Dec 21-26, 2020	examples of various operating systems,Planning the Computer Program: Concept of problem solving, Problem definition
9	Dec. 28 2020-Jan 2,2021	Program design, Debugging, Types of errors in programming, Documentation.Techniques of Problem Solving: Flowcharting, algorithms
10	Jan 4-9,2021	pseudo code, decision table, Structured programming concepts
11	Jan. 11-16,2021	Programming methodologies viz. top-down and bottomup programming
12	Jan 18-23, 2021	Searching, Sorting, and Merging: Linear & Binary Searching
13	Jan 25-30, 2021	Bubble, Selection Sort
14	Feb 1-6, 2021	Insertion Sorting, Merging, Computer Languages: Analogy with natural language, machine language, assembly language
15	Feb 8-13,2021	high-level language, language translators,characteristics of a good programming language
16	Feb 15-20, 2021	Sessional

CLASS- B.Sc. I (1st Sem.)
Paper-II: PC Software

Week	Odd Sem	Topics
1	Nov 2-7,2020	Windows: Basics of Windows. Windows History, Basic components of windows, icons, types of icons, taskbar, activating windows,
2	Nov 9-14,2020	using desktop, title bar, running applications, Windows explorer, managing files and folders,
3	Nov. 16-21,2020	Configuring System devices. Control panel , using windows accessories.
4	Nov. 23-28,2020	Documentation Using Word - Introduction to Office Automation, Creating & Editing Document, Formatting Document,
5	Nov 30- Dec. 5,2020	Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary,Printing, Styles, linking and embedding object.
6	Dec 7-12,2020	Page Formatting, Bookmark, Advance Features of MS-Word-Mail Merge,
7	Dec. 14-19,2020	Macros, Tables, File Management,
8	Dec 21-26, 2020	Revison and Test
9	Dec. 28 2020-Jan 2,2021	Electronic Spread Sheet using Excel - Introduction to MS-Excel, Creating & Editing Worksheet, Formatting and Essential Operations,
10	Jan 4-9,2021	Formulas and Functions, Charts,
11	Jan. 11-16,2021	Advance features of MS-Excel-Pivot table & Pivot Chart, Linking and Consolidation,

12	Jan 18-23, 2021	Database Management using Excel-Sorting, Filtering, Table, Validation, Goal Seek, Scenario.
13	Jan 25-30, 2021	Presentation using PowerPoint: Presentations, Creating, Manipulating & Enhancing Slides, Organizational Charts, Excel Charts,
14	Feb 1-6, 2021	Animations and Sounds, Inserting Animated Pictures or Accessing through Object, Word Art, Layering art Objects,
15	Feb 8-13,2021	Inserting Recorded Sound Effect or In-Built Sound Effect.
16	Feb 15-20, 2021	Sessional

CLASS- B.Sc. I (2nd Sem.)
Paper-I: Programming in C

Week	Even Sem	Topics
1	April 15-17, 2021	Overview of C: History & Importance of C, Structure of a C Program
2	April 19-24,2021	Elements of C: C character set, identifiers and keywords, Data types, Constants and Variables
3	April 26- May 1,2021	Assignment statement, Symbolic constant. Input/output: Unformatted I/O function
4	May 3-8 ,2021	Input functions (scanf(), getch(), getche(), getchar(), gets()), output functions (printf(), putch(), putchar(), puts())
5	May 10-15,2021	Operators & Expression: Arithmetic, relational, logical, bitwise, unary
6	May 17-22,2021	assignment,conditional operators and special operators. Arithmetic expressions, evaluation of arithmetic expression
7	May 24-29,2021	type casting and conversion, operator hierarchy & associativity
8	May 31- June 5,2021	Decision making & branching: Decision making with IF statement, IF-ELSE statement
9	June 7-12,2021	Nested IF statement, ELSE-IF ladder, switch statement, goto statement
10	June 14-19, 2021	Decision making & looping: For, while, and do-while loop,jumps in loops, break, continue statement
11	June 21-26,2021	Storage classes in C: auto, extern, register and static storage class,their scope, storage, & lifetime
12	June 28- July 3,2021	formatted I/O Functions,Arrays: Definition, types, initialization, processing an array,Structure and Union
13	July 5-10,2021	Sessional

CLASS- B.Sc. I (2nd Sem.)
Paper-II: Logical Organization of Computer

Week	Even Sem	Topics
1	April 15-17, 2021	Information Representation: Number Systems, Binary Arithmetic, Fixed-point and Floatingpoint representation of numbers
2	April 19-24,2021	BCD Codes, Error detecting and correcting codes, Character Representation – ASCII, EBCDIC.
3	April 26- May 1,2021	Binary Logic: Boolean Algebra, Boolean Theorems, Boolean Functions
4	May 3-8 ,2021	Truth Tables, Canonical and Standard forms of Boolean functions,
5	May 10-15,2021	Simplification of Boolean Functions – Venn Diagram, Karnaugh Maps.
6	May 17-22,2021	Revision and Test
7	May 24-29,2021	Digital Logic: Basic Gates – AND, OR, NOT, Universal Gates – NAND, NOR,
8	May 31- June 5,2021	Other Gates – XOR, XNOR etc,Combinational Circuits: Half-Adder
9	June 7-12,2021	Full-Adder, HalfSubtractor,Full-Subtractor, Encoders, Decoders,Multiplexers, Demultiplexers,Comparators, Code Converters
10	June 14-19, 2021	Sequential Logic: Characteristics, Flip-Flops, Clocked RS, D type,JK, T type and MasterSlave flip-flops. State table, state diagram
11	June 21-26,2021	Flip-flop excitation tables Shift registers : serial in parallel out and parallel in parallel out.. Designing counters – Asynchronous
12	June 28- July 3,2021	Synchronous Binary Counters, Modulo-N Counters and Up-Down Counters
13	July 5-10,2021	Sessional

CLASS- B.Sc. II (3rd Sem.)
Paper-I: Data Structures

Week	Odd Sem	Topics
1	Nov 2-7,2020	Introduction: Elementary data organization, Data Structure definition, Data type vs. data structure, Categories of data structures, Data structure opera
2	Nov 9-14,2020	Applications of data structures, Algorithms complexity and time-space tradeoff, Big-O notation.
3	Nov. 16-21,2020	Strings: Introduction, strings, String operations, Pattern matching algorithms
4	Nov. 23-28,2020	Arrays: Introduction, Linear arrays, Representation of linear array in memory, Traversal, Insertions, Deletion in an array
5	Nov 30- Dec. 5,2020	Multidimensional arrays, Parallel arrays, Sparse matrix. Linked List: Introduction, Array vs. linked list
6	Dec 7-12,2020	Representation of linked lists in memory, Traversal, Insertion
7	Dec. 14-19,2020	Deletion, Searching in a linked list, Header linked list, Circular linked list
8	Dec 21-26, 2020	Two-way linked list, Garbage collection, Applications of linked lists. Algorithm of insertion/ deletion in SLL.
9	Dec. 28 2020-Jan 2,2021	Stack: primitive operation on stack, algorithms for push and pop. Representation of Stack as Linked List and array, Stacks applications : polish notat
10	Jan 4-9,2021	recursion. Introduction to queues, Primitive Operations on the Queues, Circular queue
11	Jan. 11-16,2021	Priority queue, Representation of Queues as Linked List and array, Applications of queue
12	Jan 18-23, 2021	Algorithm on insertion and deletion in simple queue and circular queue
13	Jan 25-30, 2021	Trees - Basic Terminology, representation, Binary Trees, Tree Representations using Array & Linked List
14	Feb 1-6, 2021	Basic operation on Binary tree, Traversal of binary trees:- In order, Preorder & post order, Applications of Binary tree.
15	Feb 8-13,2021	Algorithm of tree traversal with and without recursion.
16	Feb 15-20, 2021	Introduction to graphs, Definition, Terminology, Directed, Undirected & Weighted graph, Representation of graphs.

CLASS- B.Sc. II (3rd Sem.)
Paper-II: Software Engineering

Week	Odd Sem	Topics
1	Nov 2-7,2020	Introduction: Program vs. Software, Software Engineering, Programming paradigms, Software Crisis – problem and causes
2	Nov 9-14,2020	Phases in Software development: Requirement Analysis, Software Design, Coding, Testing, Maintenance
3	Nov. 16-21,2020	Software Development Process Models: Waterfall, Prototype, Evolutionary and Spiral models, Role of Metrics.
4	Nov. 23-28,2020	Feasibility Study, Software Requirement Analysis and Specifications: SRS, Need for SRS
5	Nov 30- Dec. 5,2020	Characteristics of an SRS, Components of an SRS, Problem Analysis, Information gathering tools
6	Dec 7-12,2020	Organising and structuring information
7	Dec. 14-19,2020	Requirement specification, validation and metrics
8	Dec 21-26, 2020	Structured Analysis and Tools: Data Flow Diagram, Data Dictionary, Decision table, Decision trees, Structured English
9	Dec. 28 2020-Jan 2,2021	Entity-Relationship diagrams .Software Project Planning: Cost estimation: COCOMO mode
10	Jan 4-9,2021	Project scheduling, Staffing and personnel planning, team structure,
11	Jan. 11-16,2021	Software configuration management, Quality assurance plans
12	Jan 18-23, 2021	Project monitoring plans, Risk Management
13	Jan 25-30, 2021	Software testing strategies: unit testing, integration testing, V and V , System testing, Alpha and Beta testing
14	Feb 1-6, 2021	Black box, white box testing. Cyclomatic Complexity.Software Implementation and Maintenance:
15	Feb 8-13,2021	Type of maintenance, Management of Maintenance, Maintenance Process, maintenance characteristics.
16	Feb 15-20, 2021	Sessional

CLASS- B.Sc. II (4th Sem.)
Paper-I: Object Oriented Programming With 'C++'

Week	Even Sem	Topics
1	April 15-17, 2021	Object oriented Programming: Object-Oriented programming features and benefits. Object-Oriented features of C++
2	April 19-24,2021	Class and Objects, Data Hiding & Encapsulation, Structures, Data members and Member functions, Scope resolution operator and its significance
3	April 26- May 1,2021	Static Data Members, Static member functions, Nested and Local Class, Accessing Members of Class and Structure
4	May 3-8 ,2021	Constructor, Initialization using constructor, types of constructor– Default, Parameterized & Copy Constructors, Constructor overloading
5	May 10-15,2021	Default Values to Parameters, Destructors
6	May 17-22,2021	Console I/O: Hierarchy of Console Stream Classes, Unformatted and Formatted I/O Operations
7	May 24-29,2021	Manipulators, Friend Function, Friend Class, Arrays, Array of Objects, Passing and Returning Objects to Functions
8	May 31- June 5,2021	String Handling in C++
9	June 7-12,2021	Dynamic Memory Management: Pointers, new and delete Operator, Array of Pointers to Objects,
10	June 14-19, 2021	this Pointer, Passing Parameters to Functions by Reference & pointers
11	June 21-26,2021	Static Polymorphism: Operators in C++, Precedence and Associativity Rules, Operator Overloading
12	June 28- July 3,2021	Unary & Binary Operators Overloading,Function Overloading,Inline Functions, Merits/Demerits of Static Polymorphism
13	July 5-10,2021	Sessional Test

CLASS- B.Sc. II (4th Sem.)
Paper-II: Operating System

Week	Even Sem	Topics
1	April 15-17, 2021	Introduction: operating system, architecture, functions, characteristics, historical evolution
2	April 19-24,2021	Types: Serial batch, multiprogramming, time sharing, real time, distributed and parallel. OS as resource Manager
3	April 26- May 1,2021	Computer system structures: I/O structure, storage structure, storage hierarchy
4	May 3-8 ,2021	Operating system structure: system components, services, system calls, system programs, system structures
5	May 10-15,2021	Process management: process concepts, process state, process control block, operations, process scheduling
6	May 17-22,2021	Inter process communication.
7	May 24-29,2021	CPU Scheduling: scheduling criteria, levels of scheduling, scheduling algorithms, multiple processor scheduling
8	May 31- June 5,2021	Deadlocks: Characterization, methods of handling, deadlock detection, prevention, avoidance, recovery
9	June 7-12,2021	Storage Management: memory management of single-user and multiuser operating system, partitioning, swapping,
10	June 14-19, 2021	Paging and segmentation, virtual memory,Page replacement Algorithms,Thrashing.Process synchronization: critical section problems
11	June 21-26,2021	semaphores. Mutual exclusion,Device and file management: Disk scheduling,Disk structure, Disk management,File Systems:Functions of the system
12	June 28- July 3,2021	directory and file protection mechanisms
13	July 5-10,2021	Sessional Test

CLASS- B.Sc. III (5th Sem.)
Paper-I: Fundamentals of Database Systems

Week	Odd Sem	Topics
1	Nov 2-7,2020	Basic Concepts – Data, Information, Records and files. Traditional file Based Approach
2	Nov 9-14,2020	Limitations of Traditional File Based Approach, Database Approach-Characteristics of Database Approach
3	Nov. 16-21,2020	Database Management System (DBMS), Components of DBMS Environment, DBMS Functions and Components, Advantages of DBMS
4	Nov. 23-28,2020	Disadvantages of DBMS. Actors on the Scene - Data and Database Administrator, Database Designers
5	Nov 30- Dec. 5,2020	End users Applications Developers and Workers behind the Scene. Database System Architecture – Three Levels of Architecture
6	Dec 7-12,2020	Schemas – External, Conceptual and Internal Level, Database Languages – VDL, DDL, SDL, DML, SQL, Mappings – External/ Conceptual
7	Dec. 14-19,2020	Conceptual/Internal mapping,Instances, Data Independence – Logical and Physical Data Independence
8	Dec 21-26, 2020	Data Models: High Level, Low Level and Representational – Records- based Data Models
9	Dec. 28 2020-Jan 2,2021	Object-based Data Models, Physical Data Models and Conceptual Models Entity-Relationship Model – Concepts, Entity Types, Entity Sets.
10	Jan 4-9,2021	Attributes, Relationships,Constraints, Keys , Degree, Cardinality etc. ER Diagrams of any Database Organization.
11	Jan. 11-16,2021	Inventory System, Payroll System,Reservation System, Online Book Store etc.
12	Jan 18-23, 2021	Classification of Database Management System, Centralized and Client Server architecture
13	Jan 25-30, 2021	Relational Data Model:-Brief History, Terminology in Relational Data Structure, Relations, Properties of Relations,
14	Feb 1-6, 2021	Keys – Primary, Secondary, Composite, Candidate Keys
15	Feb 8-13,2021	Alternate and Foreign Key, Domains, Integrity Constraints over Relations. Revision
16	Feb 15-20, 2021	Sessional

CLASS- B.Sc. III (5th Sem.)
Paper-II: Web Designing

Week	Odd Sem	Topics
1	Nov 2-7,2020	Introduction to Internet and World Wide Web; Evolution and History of World Wide Web
2	Nov 9-14,2020	Basic Features; Web Browsers; Web Servers; Hypertext Transfer Protocol
3	Nov. 16-21,2020	URLs; Searching and WebCasting Techniques; Search Engines and Search Tools
4	Nov. 23-28,2020	Steps for Developing Website; Choosing the Contents; Home Page
5	Nov 30- Dec. 5,2020	Domain Names; Internet Service Provider; Planning and Designing Web Site
6	Dec 7-12,2020	Creating a Website; Web Publishing: Hosting Site
7	Dec. 14-19,2020	Introduction to HTML; Hypertext and HTML; HTML Document Features
8	Dec 21-26, 2020	HTML Tags; Header, Title, Body, Paragraph, Ordered/Unordered Line
9	Dec. 28 2020-Jan 2,2021	Creating Links; Headers; Text Styles; Text Structuring; Text Colors and Background
10	Jan 4-9,2021	Formatting Text; Page layouts; Insertion of Text, Movement of Text
11	Jan. 11-16,2021	Images: Types of Images, Insertion of Image, Movement of Image
12	Jan 18-23, 2021	Ordered and Unordered lists; Inserting Graphics; Table Handling Functions like Columns, Rows, Width
13	Jan 25-30, 2021	Frame Creation and Layouts
14	Feb 1-6, 2021	Working with Forms and Menus
15	Feb 8-13,2021	Working with Buttons like Radio, Check Box. Revision
16	Feb 15-20, 2021	Sessional

CLASS- B.Sc. III (6th Sem.)
Paper-I: Relational Database Management Systems

Week	Even Sem	Topics
1	April 15-17, 2021	Relational Model Concepts, Codd's Rules for Relational Model, Hierarchical Data Model– Introduction
2	April 19-24,2021	Features, Components, Example, Network Data Model– Introduction, Features, Components
3	April 26- May 1,2021	Example, Differences between Hierarchical Data Model and Network Data Model
4	May 3-8 ,2021	Comparison of Relational Data Model with Hierarchical Data Model and Network Data Model
5	May 10-15,2021	Relational Algebra:-Selection and Projection, Set Operation, Join and Division.
6	May 17-22,2021	Relational Calculus: Tuple Relational Calculus and Domain Relational Calculus.
7	May 24-29,2021	Functional Dependencies and Normalization -- Purpose, Data Redundancy, Update Anomalies,Partial/Fully Functional Dependencies
8	May 31- June 5,2021	Transitive Functional Dependencies, Characteristics of Functional Dependencies,Decomposition and Normal Forms (1NF, 2NF, 3NF & BCNF)
9	June 7-12,2021	SQL: Data Definition and data types, Create Table, Insert Data,Viewing Data, Filtering Table,Data, Sorting data, Creating Table from a Table
10	June 14-19, 2021	Destroy table, Update, View, Delete, Join,Concatenating data , Primary Key,Foreign KeyUnique Key, Check Constraint, Using Functions
11	June 21-26,2021	PL/SQL-Introduction, Advantages of PL/SQL,The Generic PL/SQL Block: PL/SQL Execution Environment, PL/SQL Character Set and Data Types
12	June 28- July 3,2021	Declaration and Assignment of Variables Control Structure in PL/SQL: Conditional Control, Iterative Control, Sequential Control
13	July 5-10,2021	Sessional

CLASS- B.Sc. III (6th Sem.)
Paper-II: Computer Networks

Week	Even Sem	Topics
1	April 15-17, 2021	Introduction to Data Communication and Computer Networks; Uses of Computer Networks; Types of Computer Networks
2	April 19-24,2021	Topologies; Network Hardware Components: Connectors, Transceivers, Repeaters, Hubs, Network Interface Cards
3	April 26- May 1,2021	PC Cards, Bridges, Switches, Routers, Gateways; Network Software:
4	May 3-8 ,2021	Network Design issues and Protocols; Connection-Oriented and Connectionless Services;
5	May 10-15,2021	OSI Reference Model; TCP/IP Model;
6	May 17-22,2021	Analog and Digital Communications Concepts: Analog and Digital data and signals; Bandwidth and Data Rate, Capacity, Baud Rate;
7	May 24-29,2021	Guided and Wireless Transmission Media,Communication Satellites; Switching and Multiplexing,Modems and modulation techniques
8	May 31- June 5,2021	Data Link Layer Design issues; Error Detection and Correction methods;Sliding Window Protocols: One-bit, Go Back N and Selective Repeat
9	June 7-12,2021	Media Access Control: ALOHA, Slotted ALOHA,CSMA, Collision free protocols; Introduction to LAN technologies: Ethernet, Switched Ethernet
10	June 14-19, 2021	Fast Ethernet, Gigabit Ethernet; Token Ring; Introduction to Wireless LANs and Bluetooth,Routing Algorithms: Flooding, Shortest Path Routing
11	June 21-26,2021	Distance Vector Routing, Link State Routing, Hierarchical Routing; Congestion Control; Traffic shaping; Choke packetsLoad shedding
12	June 28- July 3,2021	E-Mail and WWW services,Network Security Issues: Security attacks; Encryption methods; Firewalls; Digital Signatures.
13	July 5-10,2021	Sessional

LESSON PLANS
B.Com. (Gen.)
SESSION (2020-21)

CLASS- B.Com. I (Gen.) (1ˢᵗ Sem.)
Subject- Computer Applications In Business

Week	Odd Sem	Topics
1	Nov 2-7,2020	Introduction to Computers: definition, components and characteristics of computers; Input Devices
2	Nov 9-14,2020	output devices: memory and mass storage devices;
3	Nov. 16-21,2020	Various Portable devices Introduction to modern CPU and processors.
4	Nov. 23-28,2020	Computer software: introduction, types of software: system, application and utility software;
5	Nov 30- Dec. 5,2020	Revision and Class Test of Previous Topics, Application and utility software
6	Dec 7-12,2020	Programming languages, language interpreters, difference, **Assignment-1**
7	Dec. 14-19,2020	Introduction to operating system: types and function of operating system
8	Dec 21-26, 2020	Classification of various operating System
9	Dec. 28 2020-Jan 2,2021	Real-time applications and revision of Previous topics
10	Jan 4-9,2021	Operating systems for Tabs, mobile phones, Android, etc.
11	Jan. 11-16,2021	Open source software: An overview.**Assignment-2**
12	Jan 18-23, 2021	Application software: Spreadsheets, applications, functions
13	Jan 25-30, 2021	Application software:Word processors, Applications, functions, advanteges and disadvantages,Database management software;
14	Feb 1-6, 2021	Networks basic, types of networks, topologies,
15	Feb 8-13,2021	Wired and Wireless media,hardware and software required for networking
16	Feb 15-20, 2021	Revision of syllabus.

CLASS- B.Com. I (Gen.) (2ⁿᵈ Sem.)
Subject- E-Commerce

Week	Even Sem	Topics
1	April 15-17, 2021	Introduction to Internet: Concept, Application and Uses of Internet.
2	April 19-24,2021	Introduction to Internet:Internet Services.
3	April 26- May 1,2021	Information Technology and Business: Concepts of data, Information and Information System
4	May 3-8 ,2021	Information Technology and Business:Effects of IT on Business;Types of Information System
5	May 10-15,2021	Revision
6	May 17-22,2021	Transaction Processing System (TPS), Management Information System (MIS).
7	May 24-29,2021	Introduction to E-commerce:E-Commerce and World Wide Web.
8	May 31- June 5,2021	Introduction to E-commerce:E-Commerce Application Services.
9	June 7-12,2021	E-Commerce Models: B2B, B2C, C2C;
10	June 14-19, 2021	Electronic Data Interchange: Benefits, Components of EDI, EDI implementation.

11	June 21-26,2021	Electronic Data Interchange:Security Issues in E-Commerce.
12	June 28- July 3,2021	M-commerce: An Overview, E-Governance: An Overview.
13	July 5-10,2021	Revision

LESSON PLANS
B.Com. (Tax and Honors)
SESSION (2020-21)

CLASS- B.Com. I (Tax and Honors) (1st Sem.)
Subject- Computer Applications In Business

Week	Odd Sem	Topics
1	Nov 2-7,2020	Introduction to Computers: definition, components and characteristics of computers; Input Devices
2	Nov 9-14,2020	output devices: memory and mass storage devices;
3	Nov. 16-21,2020	Various Portable devices Introduction to modern CPU and processors.
4	Nov. 23-28,2020	Computer software: introduction, types of software: system, application and utility software;
5	Nov 30- Dec. 5,2020	**Revision and Class Test of Previous Topics,** Application and utility software
6	Dec 7-12,2020	Programming languages, language interpreters, difference, **Assignment-1**
7	Dec. 14-19,2020	Introduction to operating system: types and function of operating system
8	Dec 21-26, 2020	Classification of various operating System
9	Dec. 28 2020-Jan 2,2021	Real-time applications and revision of Previous topics
10	Jan 4-9,2021	Operating systems for Tabs, mobile phones, Android, etc.
11	Jan. 11-16,2021	Open source software: An overview.**Assignment-2**
12	Jan 18-23, 2021	Application software: Spreadsheets, applications, functions
13	Jan 25-30, 2021	Application software:Word processors, Applications, functions, advanteges and disadvantages,Database management software;
14	Feb 1-6, 2021	Networks basic, types of networks, topologies,
15	Feb 8-13,2021	Wired and Wireless media,hardware and software required for networking
16	Feb 15-20, 2021	**Revision of syllabus.**

CLASS- B.Com. I (Tax and Honors) (2nd Sem.)
Subject- E-Commerce

Week	Even Sem	Topics
1	April 15-17, 2021	Introduction to Internet: Concept, Application and Uses of Internet.
2	April 19-24,2021	Introduction to Internet:Internet Services.
3	April 26- May 1,2021	Information Technology and Business: Concepts of data, Information and Information System
4	May 3-8 ,2021	Information Technology and Business:Effects of IT on Business;Types of Information System
5	May 10-15,2021	Revision
6	May 17-22,2021	Transaction Processing System (TPS), Management Information System (MIS).
7	May 24-29,2021	Introduction to E-commerce:E-Commerce and World Wide Web.
8	May 31- June 5,2021	Introduction to E-commerce:E-Commerce Application Services.

9	June 7-12,2021	E-Commerce Models: B2B, B2C, C2C;
10	June 14-19, 2021	Electronic Data Interchange: Benefits, Components of EDI, EDI implementation.
11	June 21-26,2021	Electronic Data Interchange:Security Issues in E-Commerce.
12	June 28- July 3,2021	M-commerce: An Overview, E-Governance: An Overview.
13	July 5-10,2021	Revision

LESSON PLANS
B.Com. (Voc)
SESSION (2020-21)

CLASS- B.Com. I (Voc) (1st Sem.)
Subject- Computer Applications In Business

Week	Odd Sem	Topics
1	Nov 2-7,2020	Introduction to Computers: definition, components and characteristics of computers; Input Devices
2	Nov 9-14,2020	output devices: memory and mass storage devices;
3	Nov. 16-21,2020	Various Portable devices Introduction to modern CPU and processors.
4	Nov. 23-28,2020	Computer software: introduction, types of software: system, application and utility software;
5	Nov 30- Dec. 5,2020	Revision and Class Test of Previous Topics, Application and utility software
6	Dec 7-12,2020	Programming languages, language interpreters, difference, **Assignment-1**
7	Dec. 14-19,2020	Introduction to operating system: types and function of operating system
8	Dec 21-26, 2020	Classification of various operating System
9	Dec. 28 2020-Jan 2,2021	Real-time applications and revision of Previous topics
10	Jan 4-9,2021	Operating systems for Tabs, mobile phones, Android, etc.
11	Jan. 11-16,2021	Open source software: An overview.**Assignment-2**
12	Jan 18-23, 2021	Application software: Spreadsheets, applications, functions
13	Jan 25-30, 2021	Application software:Word processors, Applications, functions, advanteges and disadvantages,Database management software;
14	Feb 1-6, 2021	Networks basic, types of networks, topologies,
15	Feb 8-13,2021	Wired and Wireless media,hardware and software required for networking
16	Feb 15-20, 2021	Revision of syllabus.

CLASS- B.Com. I (Voc) (2nd Sem.)
Subject- E-Commerce

Week	Even Sem	Topics
1	April 15-17, 2021	Introduction to Internet: Concept, Application and Uses of Internet.
2	April 19-24,2021	Introduction to Internet:Internet Services.
3	April 26- May 1,2021	Information Technology and Business: Concepts of data, Information and Information System
4	May 3-8 ,2021	Information Technology and Business:Effects of IT on Business;Types of Information System
5	May 10-15,2021	Revision
6	May 17-22,2021	Transaction Processing System (TPS), Management Information System (MIS).
7	May 24-29,2021	Introduction to E-commerce:E-Commerce and World Wide Web.
8	May 31- June 5,2021	Introduction to E-commerce:E-Commerce Application Services.

9	June 7-12,2021	E-Commerce Models: B2B, B2C, C2C;
10	June 14-19, 2021	Electronic Data Interchange: Benefits, Components of EDI, EDI implementation.
11	June 21-26,2021	Electronic Data Interchange:Security Issues in E-Commerce.
12	June 28- July 3,2021	M-commerce: An Overview, E-Governance: An Overview.
13	July 5-10,2021	Revision

LESSON PLANS
M.Com. (Final)
SESSION (2020-21)

CLASS- M.Com. II (3rd Sem.)
Subject- Computer Applications in Business

Week	Odd Sem	Topics
1	Nov 2-7,2020	Computer System: Meaning, scope, types
2	Nov 9-14,2020	Basic computer organization: Central Processing Unit,input, output
3	Nov. 16-21,2020	storage devices; Introduction to software; System software
4	Nov. 23-28,2020	operating system, user interface and its types; Application software - word processing
5	Nov 30- Dec. 5,2020	Revision and class Test
6	Dec 7-12,2020	spreadsheets; Introduction to databases, tables, queries, reports
7	Dec. 14-19,2020	form generation, Information Technology in Business: Concept of information technology
8	Dec 21-26, 2020	Local Area Network,MAN, Wide Area Networks
9	Dec. 28 2020-Jan 2,2021	Network Topologies, Electronic data processing
10	Jan 4-9,2021	Various Transmission media
11	Jan. 11-16,2021	Intranet and extranet, EDI concept and evolution
12	Jan 18-23, 2021	Revision and class Test
13	Jan 25-30, 2021	World Wide Web; Multimedia technologies
14	Feb 1-6, 2021	Video conferencing, Broadband networks, Planning and designing web pages
15	Feb 8-13,2021	Fuzzy Logic, Fuzzy operations, Applications , Advantages & limitations.
16	Feb 15-20, 2021	Revision and class Test

CLASS- M.Com. II (4th Sem.)
Subject- IT and E-Commerce

Week	Even Sem	Topics
1	April 15-17, 2021	Introduction to E-commerce: Meaning of electronic commerce, business applications of e-commerce
2	April 19-24,2021	comparison with traditional commerce; Business models in E-commerce
3	April 26- May 1,2021	e-shops, e-procurement, e-auctions, value chain integrators
4	May 3-8 ,2021	information brokerage, telecommunication, collaboration platforms
5	May 10-15,2021	Electronic payment system; E-Banking –concept, operations
6	May 17-22,2021	Online fund transfer – RTGC, ATM, etc., Online share market operations
7	May 24-29,2021	Online marketing, Web-based advertising – concept, advantages; Types of online advertisements
8	May 31- June 5,2021	Search engine – as an advertising media, search engine optimisation – concept and techniques
9	June 7-12,2021	Email marketing; Social Networking and marketing – promotion, opinion formulation,Viral Marketing
10	June 14-19, 2021	E-retailing-concept, advantages, limitations,CRM and Information Technology, Tools to conducting online research – secondary research

11	June 21-26,2021	online focus groups, web based surveys, data mining from social networking sites
12	June 28- July 3,2021	Cloud computing – Concept, uses in business; Enterprise Resource Planning,Security issues in e-commerce - Online frauds, Privacy issues
13	July 5-10,2021	Cyber laws including Information Technology Act

(Sushil Goel)
Head
Deptt. of Computer Sc.

HOD

Department of Computer Science