DEPARTMENT OF COMPUTER SCIENCE (Lesson Plan)

SESSION

(2019-20)

LESSON PLANS
SESSION (2019-20)
CLASS- BCA I (1st Sem.)
Subject-Computer and Programming Fundamentals (BCA-111)

Week	Odd Sem	Topics
1	July 16-20,2019	Computer fundamentals:Definition,Block Diagram of computer withits components,chatracteristics and classification of Computer
2	July22-27,2019	Concept Of Primary Memory& Secondary Memory,Ram
3	July 29- Aug 3, 2019	Rom,Types Of Ram,flash Memory,Secondary Storage Devices:magnetic tape,Magnetic Disk,CD,DvD
4	Aug. 5- 10,2019	Computer Hardware& software:I/o Devices,Relation Between Harware& Software
5	Aug. 12-17,2019	Types of Software,Operating system and its functions
6	Aug. 19-24,2019	Concept of Multiprogramming,Multitasking,Multithreading,Multiprocessing,Time sharing,
7	Aug. 26-31,2019	Real Operating System,single User &Multiuser Operating System
8	Sep. 2-7, 2019	Concept Of Problem Solving,Problem definition,Program Design,Debuggimg,Types of error in Programming
9	Sep.9-14,2019	Documentation,Techniques Of Problem Solving,FlowChart,Algorithms,Psuedo Codes
10	Sep.16-21,2019	Decision table,Structured Programming Concepts,programming Methodologies:Top-down and Bottom-up approach
11	Sep.24-28,2019	Searching And Sorting Techniques
12	Sep. 30- Oct.5, 2019	Designs of algorithms For Searching,sorting and Merging
13	Oct. 7-12, 2019	Computer LanguagesLangauge translators,Characterstics of a Good Programming Language
14	Oct. 14-19, 2019	Computer Virus,Worms,Trojan
15	Oct. 21-23, 2019	Sessional Test

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

Week	Odd Sem	Topics
1	July 16-20,2019	Introduction to Windows and its Features, Hardware Requirements of Windows. Windows Concepts
2	July22-27,2019	Windows Structure, Desktop, Taskbar, Start Menu, My Pictures, My Music, My Documents, Recycle Bin
3	July 29- Aug 3, 2019	Managing Files, Folders and Disk,My Computer, Windows Explorer and its Facilities ,.Test
4	Aug. 5- 10,2019	Using CD, DVD, Pen Drive, Burning CD. Windows Accessories. Media Players, Sound Recorder, Volume Control.
5	Aug. 12-17,2019	Managing Hardware & Software - Installation of Hardware & Software, Using Scanner,,
6	Aug. 19-24,2019	Web Camera, Printers, Backup, Character Map, Clipboard Viewer, Disk Defragmenter, Drive Space, Scandisk
7	Aug. 26-31,2019	System Information, System Monitor,Disk Cleanup, Using Windows Update, Browsing the Web with Internet Explorer
8	Sep. 2-7, 2019	Multiple User Features of Windows, Creating and Deleting User,Changing User Password,Sharing Folders and Drives, Browsing the Entire Network
9	Sep.9-14,2019	Using Shared Printers,Control Panel & its components,Introduction and area of use, Working with Excel, Toolbars, Menus and Keyboard,Test
10	Sep.16-21,2019	Shortcuts, concepts of Workbook & Worksheets, Using Wizards, Various Data Types, Using different features with Data,
11	Sep.24-28,2019	Cell and Texts, Inserting, Removing & Resizing of Columns & Rows, Working with Data & Ranges, Different Views of Worksheets,Test

12	Sep. 30- Oct.5, 2019	Column Freezing, Labels, Hiding, Splitting etc., Using different features with Data and Text, Cell Formatting including Borders & Shading
13	Oct. 7-12, 2019	Multiple Worksheets: Concept, Creating and Using Multiple Worksheets; Use of Formulas,Calculations & Functions
14	Oct. 14-19, 2019	Cell Referencing, Absolute and Relative Addressing, Various types of Functions,Working with Different Chart Types, Chart Wizard
15	Oct. 21-23, 2019	,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 computers-I (BCA-114)

Week	Odd Sem	Topics
1	July 16-20,2019	Number Systems,Binary Arithmetic, Representation of numbers
2	July22-27,2019	BCD Codes, Error detecting and correcting codes
3	July 29- Aug 3, 2019	Character Representation – ASCII, EBCDIC
4	Aug. 5- 10,2019	: Boolean Algebra, Boolean Theorems, Boolean Functions,Truth Tables,Test
5	Aug. 12-17,2019	Canonical forms of Boolean functions,Test
6	Aug. 19-24,2019	Standard forms of Boolean functions
7	Aug. 26-31,2019	Simplification of Boolean Functions
8	Sep. 2-7, 2019	Venn Diagram, Karnaugh Maps
9	Sep.9-14,2019	AND, OR, NOT, Universal Gates – NAND, NOR
10	Sep.16-21,2019	XOR, XNOR , Implementations of digital circuits
11	Sep.24-28,2019	Combinational Logic – Characteristics, Design Procedures, analysis procedures
12	Sep. 30- Oct.5, 2019	Combinational Circuits: Half-Adder, Full-Adder, Half-Subtractor
13	Oct. 7-12, 2019	Full-Subtractor, Encoders,Decoders
14	Oct. 14-19, 2019	Multiplexers, Demultiplexers,Comparators, Code Converters.
15	Oct. 21-23, 2019	Revision,Test

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

Week	Odd Sem	Topics
1	July 16-20,2019	Overview of C: History of C, Importance of C, Structure of a C Program
2	July22-27,2019	C character set , identifiers and keywords, Data types
3	July 29- Aug 3, 2019	Constants and Variables , Assignment statement, Symbolic constant, scanf(), printf()
4	Aug. 5- 10,2019	putch(), putchar(), puts())., getch(), getche(), getchar(), gets())
5	Aug. 12-17,2019	Arithmetic, relational, logical, bitwise, unary, assignment,conditional operators and special operators.
6	Aug. 19-24,2019	Arithmetic expressions, evaluation of arithmetic Expression
7	Aug. 26-31,2019	Type casting and conversion, operator hierarchy & associativity
8	Sep. 2-7, 2019	Decision making with IF statement, IF-ELSE statement, Nested IF statement
9	Sep.9-14,2019	ELSE-IF ladder, switch statement, goto statement

10	Sep.16-21,2019	Decision making & looping: For, while, and do-while loop
11	Sep.24-28,2019	jumps in loops, break, continue statement
12	Sep. 30- Oct.5, 2019	Functions: Definition, prototype, passing parameter
13	Oct. 7-12, 2019	Arrays: Definition, types, initialization, processing an array,
14	Oct. 14-19, 2019	passing arrays to functions, Strings,Arrays
15	Oct. 21-23, 2019	Revision,Test

CLASS- BCA I (2nd Sem.)
Subject- Advance Programming in C (BCA-121)

Week	Even Sem	Topics
1	Jan. 1-4,2020	Strings in 'C': Introduction, Declaration and initialization of string, String I/O, Array of strings
2	Jan. 6-11,2020	String manipulation functions, Introduction, Features of structures, Declaration and initialization of structures
3	Jan. 13-18, 2020	Structure within structure, Array of structures, Structure and functions. Union: Introduction, Union of structures. Typedef, Enumerations
4	Jan. 20-25,2020	Pointers: Introduction, Pointer variables, Pointer operators, Pointer assignment
5	Jan. 27 -Feb 1,2020	Pointer conversions, Pointer arithmetic, Pointer comparison
6	Feb 3-8,2020	Pointers and arrays, Pointers and functions, Pointers and strings
7	Feb. 10-15, 2020	Pointer to pointer, dynamic allocation using pointers.
8	Feb.17-22,2020	Preprocessor: Introduction, #define, macros, macro versus functions
9	Feb. 24-29,2020	#include, Conditional compilation directives, undefining a macro
10	March 2-7, 2020	Command line arguments: defining and using command line arguments.
11	March 16-21,2020	Files: Introduction, File types
12	March, 23-28,2020	File operations, File I/O,
13	March 30 - April 4,2020	Structure Read and write in a file,
14	April 6-11, 2020	Errors in file handling, Random-access I/O in files
15	April, 13-18, 2020	Revision
16	April 20-25,2020	Revision
17	April 27-30,2020	Sessional

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	Sequential Logic: Characteristics, Flip-Flops
2	Jan. 6-11,2020	Clocked RS, D type, JK, T type
3	Jan. 13-18, 2020	Master- Slave flip-flops. State table, state diagram
4	Jan. 20-25,2020	Flip-flop excitation tables, Test
5	Jan. 27 -Feb 1,2020	Sequential Circuits: Designing registers – Serial Input Serial Output (SISO)
6	Feb 3-8,2020	Serial Input Parallel Output (SIPO), Parallel Input Serial Output (PISO)
7	Feb. 10-15, 2020	Parallel Input Parallel Output (PIPO) and shift registers
8	Feb.17-22,2020	Designing counters – Asynchronous and Synchronous Binary Counters
9	Feb. 24-29,2020	Modulo-N Counters and Up-Down Counters, Test

10	March 2-7, 2020	Memory & I/O Devices: Memory Parameters, Semiconductor RAM, ROM
11	March 16-21,2020	Magnetic and Optical Storage devices
12	March, 23-28,2020	Flash memory, I/O Devices and their controllers
13	March 30 - April 4,2020	Instruction Design & I/O Organization: Machine instruction
14	April 6-11, 2020	Instruction set selection ,Instruction cycle, Instruction Format
15	April, 13-18, 2020	Addressing Modes, I/ O Interface, Interrupt structure
16	April 20-25,2020	Program-controlled, Interrupt-controlled & DMA transfer, I/O Channels, IOP
17	April 27-30,2020	Sessional Test

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	System Concept: Definition, Characteristics, Elements of system, Physical and abstract System
2	Jan. 6-11,2020	open and closed system,man-made information systems,System Development Life Cycle: Various phases of system development
3	Jan. 13-18, 2020	Considerations for system planning and control for system success,Role of system analyst
4	Jan. 20-25,2020	System Planning: Bases for planning in system analysis: Dimensions of Planning
5	Jan. 27 -Feb 1,2020	Initial Investigation: Determining user's requirements and analysis, fact finding process and techniques
6	Feb 3-8,2020	Tools of structured Analysis: Data Flow diagram, data dictionary, IPO and HIPO charts
7	Feb. 10-15, 2020	Gantt charts, pseudo codes, Flow charts, decision tree, decision table
8	Feb.17-22,2020	Feasibility study: Technical, Operational & Economic Feasibilities.
9	Feb. 24-29,2020	Cost/Benefit Analysis: Data analysis cost and benefit analysis of a system.
10	March 2-7, 2020	Input/ Output and Form Design, File Organization and database design: Introduction to files and database
11	March 16-21,2020	File structures and organization, objectives of database design, logical and physical view of data
12	March, 23-28,2020	System testing: Introduction, objectives of testing, test planning, testing techniques.
13	March 30 - April 4,2020	Quality assurance: Goal of quality assurance, levels of quality assurance system
14	April 6-11, 2020	Implementation and software maintenance
15	April, 13-18, 2020	primary activities in maintenance,reducing maintenance cost
16	April 20-25,2020	Revision test
17	April 27-30,2020	Sessional Test

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	System Concept: Definition, Characteristics, Elements of system, Physical and abstract System
2	Jan. 6-11,2020	open and closed system,man-made information systems,System Development Life Cycle: Various phases of system development
3	Jan. 13-18, 2020	Considerations for system planning and control for system success,Role of system analyst
4	Jan. 20-25,2020	System Planning: Bases for planning in system analysis: Dimensions of Planning

5	Jan. 27 -Feb 1,2020	Initial Investigation: Determining user's requirements and analysis, fact finding process and techniques
6	Feb 3-8,2020	Tools of structured Analysis: Data Flow diagram, data dictionary, IPO and HIPO charts
7	Feb. 10-15, 2020	Gantt charts, pseudo codes, Flow charts, decision tree, decision table
8	Feb.17-22,2020	Feasibility study: Technical, Operational & Economic Feasibilities.
9	Feb. 24-29,2020	Cost/Benefit Analysis: Data analysis cost and benefit analysis of a system.
10	March 2-7, 2020	Input/ Output and Form Design, File Organization and database design: Introduction to files and database
11	March 16-21,2020	File structures and organization, objectives of database design, logical and physical view of data
12	March, 23-28,2020	System testing: Introduction, objectives of testing, test planning, testing techniques.
13	March 30 - April 4,2020	Quality assurance: Goal of quality assurance, levels of quality assurance system
14	April 6-11, 2020	Implementation and software maintenance
15	April, 13-18, 2020	primary activities in maintenance,reducing maintenance cost
16	April 20-25,2020	Revision test
17	April 27-30,2020	Sessional Test

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

Week	Odd Sem	Topics
1	July 16-20,2019	Object-Oriented programming features and benefits.
2	July22-27,2019	Object-Oriented features of C++, Class and Objects, Data Hiding & Encapsulation
3	July 29- Aug 3, 2019	Data members and Member functions, Scope resolution operator and its significance
4	Aug. 5- 10,2019	Structures,Static Data Members,Static member functions
5	Aug. 12-17,2019	Nested and Local Class, Accessing Members of Class and Structure
6	Aug. 19-24,2019	Constructor, Initialization using constructor, types of constructor– Default, Parameterized constructor
7	Aug. 26-31,2019	Copy Constructors, Constructor overloading, Default Values to Parameters, Destructors Assignment-I
8	Sep. 2-7, 2019	Console I/O: Hierarchy of Console Stream Classes, Unformatted I/O Operations
9	Sep.9-14,2019	Formatted I/O Operations
10	Sep.16-21,2019	Manipulators, Friend Function, Friend Class,
11	Sep.24-28,2019	Arrays, Array of Objects, Passing and Returning Objects to Functions
12	Sep. 30- Oct.5, 2019	String Handling in C++ ,Dynamic Memory Management: Pointers, new and delete Operator Assignment-II
13	Oct. 7-12, 2019	this Pointer, Passing Parameters to Functions by Reference & pointers,Polymorphism: Operators in C++
14	Oct. 14-19, 2019	Precedence and Associativity Rules,Operator Overloading, Unary & Binary Operators Overloading, Function Overloading, Inline Functions
15	Oct. 21-23, 2019	Revision

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

Week	Odd Sem	Topics
1	July 16-20,2019	Elementary Data Organization, Data Structure Definition, Data type vs Data Structure, Categories of data structure
2	July22-27,2019	Data Structure Operations, Algorithms, Complexity and time-space tradeoff, Big O notation
3	July 29- Aug 3, 2019	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	Aug. 5- 10,2019	Deletion in an array, Searching and sorting, Two dimensional arrays, sequential allocation in memory, address computation.
5	Aug. 12-17,2019	Three dimensional arrays, general multi dimensional arrays, sparse arrays, pointers and records
6	Aug. 19-24,2019	Introduction to linked lists, representation of linked lists in memory, traversing a linked list, searching an element in a linked list
7	Aug. 26-31,2019	free storage lists, garbage collection, insertion, Deletion from a linked list
8	Sep. 2-7, 2019	Implementation of a linked list, Header linked list, Circular Linked lists,Two way linked lists
9	Sep.9-14,2019	Introduction to stacks, array and linked representation of stacks, operations on stacks and their algorithms.
10	Sep.16-21,2019	Applications of stacks: Polish notation for arithmetic expressions, recursion, Introduction to queues
11	Sep.24-28,2019	Implementation of queues as array and linked lists, Operations on queue, Deques, Prioriety queues, applications of queues
12	Sep. 30- Oct.5, 2019	Introduction to trees, definition of terms related to trees, Binary trees, storage representation using arrays and linked lists
13	Oct. 7-12, 2019	basic operations, tree traversal,Expression tree, traversal algorithms.
14	Oct. 14-19, 2019	Introduction to graphs, Graph theory terminology, sequential and linked representation of graphs,Traversing a graph
15	Oct. 21-23, 2019	Revision

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

Week	Odd Sem	Topics
1	July 16-20,2019	Basic Computer Organisation and Design ,Instruction Codes
2	July22-27,2019	Computer,Computer Instructions, Timing and Control registers
3	July 29- Aug 3, 2019	Instruction Cycle,Memory reference instructions
4	Aug. 5- 10,2019	Input-Output and Interrupt, Design of Basic computer,Design of accumulator logic, Design of Control Unit
5	Aug. 12-17,2019	Register Transfer and Microoperations: Register Transfer Language(RTL)
6	Aug. 19-24,2019	register transfer, Bus and Memory Transfers, ArithmeticMicrooperations
7	Aug. 26-31,2019	Logic Microoperations, Shift Microoperations,Arithmetic Logic Shift Unit
8	Sep. 2-7, 2019	Microprogrammed Control: Controlmemory; address sequencing, microprogram sequencer,
9	Sep.9-14,2019	Central Processing Unit: General registers Organization, StackOrganization
10	Sep.16-21,2019	Instruction formats, Addressing Modes, Data Transferand Manipulation
11	Sep.24-28,2019	Program Control, Program Interrupt, RISC, CISC,Memory hierarchy, Auxiliary Memory,Associative Memory, Interleaved memory.
12	Sep. 30- Oct.5, 2019	Cache memory,Virtual Memory, Memory Management Hardware, Input Output Organization
13	Oct. 7-12, 2019	Input-Output Interface, Asynchronous datatransfer, Modes of Transfer, Priority Interrupt
14	Oct. 14-19, 2019	Direct MemoryAccess(DMA),Input-Output Processor(IOP).
15	Oct. 21-23, 2019	Revision

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

Week	Odd Sem	Topics
1	July 16-20,2019	Software Engineering, Programmingparadigms, Software Crisis
2	July22-27,2019	problem and causes, Phases in Softwaredevelopment: Requirement Analysis, Software Design
3	July 29- Aug 3, 2019	Coding, Testing,Maintenance, Software Development Process Models
4	Aug. 5- 10,2019	Waterfall,Prototype, Evolutionary and Spiral models, Role of Metrics
5	Aug. 12-17,2019	Feasibility Study, Software Requirement Analysis and Specifications: SRS, Need for SRS
6	Aug. 19-24,2019	Characteristics of an SRS, Components of an SRS, Problem Analysis, Informationgathering tools
7	Aug. 26-31,2019	Organizing and structuring information, Requirement specification,validation and Verification.. SCM
8	Sep. 2-7, 2019	Data Flow Diagram, Data Dictionary,Decision table, Decision tress
9	Sep.9-14,2019	Structured English, Entity-Relationship diagrams
10	Sep.16-21,2019	Cohesion and Coupling.Gantt chart, PERT Chart, Software Maintenance: Type of maintenance
11	Sep.24-28,2019	Management of Maintenance, Maintenance Process, maintenancecharacteristics
12	Sep. 30- Oct.5, 2019	COCOMO model, Projectscheduling, Staffing and personnel planning
13	Oct. 7-12, 2019	team structure, Softwareconfiguration management, Quality assurance plans
14	Oct. 14-19, 2019	Projectmonitoring plans, Risk Management. Software testing strategies
15	Oct. 21-23, 2019	unit testing, integration testing, Validation testing, System testing, Alphaand Beta testing.

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

Week	Odd Sem	Topics
1	July 16-20,2019	Basic Concepts – Data, Information, Records and files
2	July22-27,2019	Traditional file based Systems-File Based Approach, Limitations of File Based Approach
3	July 29- Aug 3, 2019	Database Approach-Characteristics of Database Approach
4	Aug. 5- 10,2019	Database Management System (DBMS), Components of DBMS Environment,
5	Aug. 12-17,2019	DBMS Functions and Components, Advantages and Disadvantages of DBMS Test
6	Aug. 19-24,2019	Roles in the Database Environment - Data and Database Administrator, Database Designers
7	Aug. 26-31,2019	Applications Developers and Users Database System Architecture – Three Levels of Architecture Assignment-I
8	Sep. 2-7, 2019	External, Conceptual and Internal Levels, Schemas, Mappings and Instances
9	Sep.9-14,2019	Data Independence – Logical and Physical Data Independence, Classification of Database Management System
10	Sep.16-21,2019	Centralized and Client Server architecture to DBMS,Data Models: Records- based Data Models
11	Sep.24-28,2019	Object-based Data Models, Physical Data Models and Conceptual Modeling
12	Sep. 30- Oct.5, 2019	Entity-Relationship Model – Entity Types, Entity Sets, Attributes Relationship Types
13	Oct. 7-12, 2019	Relationship Instances and ER Diagrams Assignment-II
14	Oct. 14-19, 2019	Relational Data Model Brief History, Terminology in Relational Data Structure, Relations,Properties of Relations, Keys, Domains
15	Oct. 21-23, 2019	Integrity Constraints over Relations,Base Tables and Views,Basic Concepts of Hierarchical and Network Data Model

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

Week	Odd Sem	Topics
1	July 16-20,2019	Computer Arithmetic: Floating-point representation of numbers,
2	July22-27,2019	arithmetic operations with normalized floating-point numbers and their consequences, significant figures
3	July 29- Aug 3, 2019	Error in number representation-inherent error, truncation, absolute,relative, percentage and round-off error
4	Aug. 5- 10,2019	Iterative Methods: Bisection, False position, Newton-Raphson method.Iteration method, discussion of convergence,
5	Aug. 12-17,2019	Solution of simultaneous linear equations and ordinary differential equations: Gauss-Elimination methods, pivoting,
6	Aug. 19-24,2019	Ill-conditionedequations, refinement of solution. Gauss-Seidal iterative method,
7	Aug. 26-31,2019	Eulermethod, Euler modified method, Taylor-series method,
8	Sep. 2-7, 2019	Runge kutta,predictor-corrector methods
9	Sep.9-14,2019	Interpolation and Approximation: Polynomial interpolation: Newton, Lagranges, Difference tables,
10	Sep.16-21,2019	Approximation of functions by Taylor Series.
11	Sep.24-28,2019	Chebyshev polynomial: First kind, Second kind and their relations,Orthogonal properties
12	Sep. 30- Oct.5, 2019	Numerical Differentiation and integration: Differentiation formulae based on polynomial fit
13	Oct. 7-12, 2019	pitfalls in differentiation,Trapezoidal & Simpson Rules,Gaussian Quadrature
14	Oct. 14-19, 2019	REVISION
15	Oct. 21-23, 2019	TESTS

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	Trees: Introduction, Definition, Representing binary tree in memory
2	Jan. 6-11,2020	Traversing Binary Trees, traverasal algorithms using stacks,
3	Jan. 13-18, 2020	Binary Search Tress : Introduction, Searching
4	Jan. 20-25,2020	Binary Search Tress: Searching, Insertion, Deletion
5	Jan. 27 -Feb 1,2020	Huffman's Algorithm, General Trees,
6	Feb 3-8,2020	Graphs: Introduction, Graph theory terminology
7	Feb. 10-15, 2020	Sequentials and linked reporesentation of graph
8	Feb.17-22,2020	Operations on graphs
9	Feb. 24-29,2020	Traversal algorithms in graphs and their implemetation,
10	March 2-7, 2020	Dijkstra algorithm for shortest path, Warshall's algorithm for shortest path
11	March 16-21,2020	Sorting: Internal & External, Radix Sort
12	March, 23-28,2020	Quick Sort, Heap Sort, Merge Sort
13	March 30 - April 4,2020	Tournament Sort, Comparison of various sorting and searching algorithms on the basis of complexity
14	April 6-11, 2020	Files: Introduction, attributes of a file
15	April, 13-18, 2020	Classification of files, files operations, Comparison of various types of files
16	April 20-25,2020	File organization: Sequential, Indexed-sequential, Random access.
17	April27-30,2020	Hashing: Introduction, Collision resolution

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	Dynamic Polymorphism: Function Overriding
2	Jan. 6-11,2020	Virtual Function and its Need, Pure Virtual Function
3	Jan. 13-18, 2020	Abstract Class, Virtual Derivation
4	Jan. 20-25,2020	Virtual Destructor, Type Conversion: Basic Type Conversion
5	Jan. 27 -Feb 1,2020	Conversion between objects and basic types Assignment-I
6	Feb 3-8,2020	Conversion between objects of different classes.
7	Feb. 10-15, 2020	Inheritance
8	Feb.17-22,2020	Rules of Derivations Private, Protected and Public Derivations.
9	Feb. 24-29,2020	Different Forms of Inheritance – Single, Multiple, Multilevel Hierarchical and Multipath
10	March 2-7, 2020	Roles of Constructors and Destructors inI nheritance
11	March 16-21,2020	Genericity in C++: Templates in C++
12	March, 23-28,2020	Function templates Assignment-II
13	March 30 - April 4,2020	Class templates in C++
14	April 6-11, 2020	Exception Handling in C++: try, throw and catch
15	April, 13-18, 2020	Files I/O in C++: Class Hierarchy for Files I/O, Text versus Binary Files
16	April 20-25,2020	Opening and Closing Files , File Pointers, Operation on files.
17	April27-30,2020	Revision, Test

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	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	Jan. 6-11,2020	Types of Ecommerce Systems, Elements of E-Commerce, principles of E-Commerce,Benefits and Limitations of E-Commerce.
3	Jan. 13-18, 2020	Management Issues relating to e-commerce. Operations of E-commerce: Credit cardtransaction;
4	Jan. 20-25,2020	Secure Hypertext Transfer Protocol (SHTP); Electronic payment systems;(SET) SET`s encryption; Process; Cybercash; Smart cards;
5	Jan. 27 -Feb 1,2020	Applications in governance: EDI in governance; E-government; E-Governanceapplications of Internet;
6	Feb 3-8,2020	concept of government –to- business, business-to-governmentand citizen-to-government; E-governance models
7	Feb. 10-15, 2020	Private sector interface in Egovernance.Applications in B2C: Consumers shopping procedure on the Internet
8	Feb.17-22,2020	Impacton disinter mediation and re-intermediation; Global market; Strategy of traditionaldepartment stores.
9	Feb. 24-29,2020	Products in b2c model; success factors of e-brokers; Broker-based services ;travel tourism services; Benefits and impact of commerce on travel industry
10	March 2-7, 2020	Online realestate market; online stock trading and its benefits; Online banking and its benefits
11	March 16-21,2020	Onlinefinancial services and their future; E-auctions – benefits, implementation and impact.
12	March, 23-28,2020	Applications in B2B: Key technologies for b2b; architectural models of b2b,characteristics of the supplier –oriented marketplace

13	March 30 - April 4,2020	buyer-oriented marketplace andintermediary-oriented marketplace; Just In Time delivery in b2b
14	April 6-11, 2020	Internet-based EDIf rom traditional EDI; Marketing Issues in b2b.E merging Business models: Retail model
15	April, 13-18, 2020	Media model; advisory model, made-to-order manufacturing model; Do-it- yourself model; Information service model; Emerging hybrid models
16	April 20-25,2020	Emerging models in India, Internet & E-Commerce scenario in India; Internet security Issues; Legal aspects of E-commerce
17	April27-30,2020	Sessional

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	Relational Model Concepts, Codd's Rules for Relational Model
2	Jan. 6-11,2020	Relational Algebra Selection and Projection, Set Operation, Renaming
3	Jan. 13-18, 2020	Join and Division, Relational Calculus: Tuple Relational Calculus
4	Jan. 20-25,2020	Domain Relational Calculus Test
5	Jan. 27 -Feb 1,2020	Functional Dependencies and Normalization Purpose, Data Redundancy and Update Anomalies
6	Feb 3-8,2020	Functional Dependencies,Full Functional Dependencies
7	Feb. 10-15, 2020	Transitive Functional Dependencies, Characteristics of Functional Dependencies
8	Feb.17-22,2020	Decomposition and Normal Forms (1NF, 2NF, 3NF & BCNF) Assignment-I
9	Feb. 24-29,2020	SQL: Data Definition and data types
10	March 2-7, 2020	SQL Operators, Specifying Constraints in SQL, Basic DDL
11	March 16-21,2020	DML and DCL commands in SQL, Simple Queries
12	March, 23-28,2020	Nested Queries, Tables, Views, Indexes Assignment-II
13	March 30 - April 4,2020	Aggregate Functions, Clauses
14	April 6-11, 2020	PL/SQL architecture, PL/SQL and SQL*Plus, PL/SQL Basics, Advantages of PL/SQL
15	April, 13-18, 2020	The Generic PL/SQL Block: PL/SQL Execution Environment, PL/SQL Character set and Data Types
16	April 20-25,2020	Control Structure in PL/SQL, Cursors in PL/SQL,Triggers in PL/SQL, Programming using PL/SQL
17	April27-30,2020	Revision, Test

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	Basic Statistics: Preparing Frequency Distribution Table andCumulative frequency
2	Jan. 6-11,2020	, Measure of Central Tendency, Types: Arithmeticmean, Geometric Mean, Harmonic Mean, Median, Mode.
3	Jan. 13-18, 2020	Measure of Dispersion: Range, Quartile Deviation, mean deviation,Coefficient of mean Deviation, Standard Deviation
4	Jan. 20-25,2020	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.
5	Jan. 27 -Feb 1,2020	Probability Distribution: Random Variable- Discrete Random and Continuous Random variable,
6	Feb 3-8,2020	Probability Distribution of a RandomVariable, Mathematical Expectation
7	Feb. 10-15, 2020	Types: Binomial, Poisson, Normal Distribution, Mean and Variance ofBinomial, Poisson, and Normal Distribution.
8	Feb.17-22,2020	Correlation: Introduction, Types, Properties, Methods of Correlation: Karl Pearson's Coefficient of Correlation, Rank Correlation.
9	Feb. 24-29,2020	Concurrent Deviation method, Probable error.Regression: Introduction, Aim of Regression Analysis, Types of Regression Analysis, Lines of Regression.
10	March 2-7, 2020	Properties of Regression ,Curve Fitting: Straight Line, Parabolic curve,
11	March 16-21,2020	Geometric Curve andExponential CurveBaye's Theorem in Decision Making, Forecasting Technique
12	March, 23-28,2020	Sample introduction, Sampling: Meaning, methods of Sampling
13	March 30 - April 4,2020	Statistical Inference: Test of Hypothesis, Types of hypothesis,Procedure of hypothesis Testing, Type I and Type II error, One Tailed and two tailed Test,
14	April 6-11, 2020	Types of test of Significance: Test of significancef or Attribute-Test of No. of success and test of proportion of success,
15	April, 13-18, 2020	Test of significance for large samples - Test of significance for singlem ean and Difference of mean
16	April 20-25,2020	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
17	April27-30,2020	REVISION & CLASS TESTS

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	Introduction to system and Basic System Concepts, Types of Systems,The Systems Approach
2	Jan. 6-11,2020	Information System: Definition &Characteristics, Types of information, Role of Information in Decision-Making
3	Jan. 13-18, 2020	Sub-Systems of an Information system: EDP and MIS management levels, EDP/MIS/DSS.
4	Jan. 20-25,2020	Definition &Characteristics, Components of MIS, Frame Work for UnderstandingMIS
5	Jan. 27 -Feb 1,2020	Information requirements & Levels of Management,
6	Feb 3-8,2020	Formal vs.Informal systems,Developing Information Systems: Analysis & Design of InformationSystems
7	Feb. 10-15, 2020	Implementation & Evaluation, Pitfalls in MIS Development
8	Feb.17-22,2020	Simon's Modelof decision-Making, Functional MIS: A Study of Personnel
9	Feb. 24-29,2020	Financial and production MIS
10	March 2-7, 2020	Introduction to e-business systems
11	March 16-21,2020	ecommerce – technologies,applications
12	March, 23-28,2020	Decision support systems

13	March 30 - April 4,2020	support systems for planning
14	April 6-11, 2020	control and decision-making
15	April, 13-18, 2020	Structured Vs Un-structured decisions,
16	April 20-25,2020	Revision
17	April27-30,2020	Sessional

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

Week	Odd Sem	Topics
1	July 16-20,2019	Introduction to Internet and World Wide Web; Evolution and History of World Wide Web; Basic
		Features; Web Browsers;
2	July22-27,2019	Web Servers; Hypertext Transfer Protocol; URLs; Searching
3	July 29- Aug 3, 2019	Web-Casting Techniques; Search Engines and Search Tools;Steps for developing website
4	Aug. 5- 10,2019	Choosing the Contents; Home Page; Domain Names;Internet Service provider
5	Aug. 12-17,2019	Planning and Designing Web Site;Creating aWebsite;Web Publishing;Creating aWebsite
6	Aug. 19-24,2019	Web Publishing: Hosting Site;Introduction to HTML;Hypertext and HTML;HTML Documents features
7	Aug. 26-31,2019	HTML Tags,Header, Title, Body, Paragraph, Ordered/Unordered Line
8	Sep. 2-7, 2019	Creating Links; Headers; TextStyles; Text Structuring; Text Colors and Background;
9	Sep.9-14,2019	Formatting Text; Page layouts; Insertion of Text, Movement of Text
10	Sep.16-21,2019	Images: Types of Images, Insertion of Image, Movement of Image,
11	Sep.24-28,2019	Ordered and Unordered lists;Inserting Graphics; Table Handling Functions
12	Sep. 30- Oct.5, 2019	Frame Creation and Layouts;Working with Forms and menus
13	Oct. 7-12, 2019	Working with Buttons like Radio, Check Box,Submit,Reset Buttons;Drop down Menu
14	Oct. 14-19, 2019	Revision
15	Oct. 21-23, 2019	Test

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

Week	Odd Sem	Topics
1	July 16-20,2019	Operating System: Definition, Characteristics, Components, Functions, Examples; Types of Operating
		System: Single User/Multi User,Classification of Operating System: Batch, Multiprogrammed
2	July22-27,2019	Timesharing, Multiprocessing, Parallel,Distributed, Real Time; System Calls and System Programs:
		Process Control, File Manipulation, Device Manipulation,
3	July 29- Aug 3, 2019	Information Maintenance, Communications,P rocess Management: Process concept
		, Process states and Process Control Block
4	Aug. 5- 10,2019	Process Scheduling: Scheduling Queues, Schedulers, Context Switch; Operation on Processes:,
		Process Creation
5	Aug. 12-17,2019	Process Termination; Cooperating Processes, Introduction to Threads;Inter-process Communication;
6	Aug. 19-24,2019	CPU Scheduling: Basic Concepts, Scheduling Criteria, Scheduling Algorithms: FCFS, SJF,

7	Aug. 26-31,2019	Priority, Round-Robin, Multilevel Queue, Multilevel Feedback Queue Scheduling
8	Sep. 2-7, 2019	Deadlocks: System Model, Deadlock Characterization, Methods of Handling Deadlocks, Deadlock
		Prevention, Deadlock Avoidance, Deadlock Detection and Recovery
9	Sep.9-14,2019	Memory Management: Introduction, Swapping, Contiguous Allocation: Single-Partition/Multiple
		Partition Allocation, External/Internal Fragmentation; Paging: Basic Method, Hardware,
10	Sep.16-21,2019	Implementation of Page table; Segmentation: Basic Method, Hardware, Implementation of Segment
11	Sep.24-28,2019	Table, Advantages/Disadvantages of Paging/Segmentation,Virtual Memory: Introduction, Demand
12	Sep. 30- Oct.5, 2019	Demand Paging, Page Replacement, Page Replacement Algorithms: FIFO
13	Oct. 7-12, 2019	Optimal, LRU, Counting; Thrashing and its cause; File Management: File Concepts,File Attributes
		File Operations, File Types, File Access/Allocation Methods, File Protection, File Recovery
14	Oct. 14-19, 2019	Revision
15	Oct. 21-23, 2019	Test

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

Week	Odd Sem	Topics
1	July 16-20,2019	Artificial Intelligence : Intelligence, AI Concepts, Various definitions of AI, Knowledge, Knowledge Pyramid,
2	July22-27,2019	People and Computers: What computers can do better that people, what people can do better than computers; Characteristics of AI Problems
3	July 29- Aug 3, 2019	Problem Representation in AI, Components of AI, AI Evolution, Application Areas of AI
4	Aug. 5- 10,2019	History of AI, The Turing Test, The Revised Turing Test
5	Aug. 12-17,2019	Expert System: Components of Expert System: Knowledge Base, Inference Engine, User Interface, Features of Expert System
6	Aug. 19-24,2019	Expert System Life Cycle, Categories of Expert System, Rule Based vs. Model Based Expert Systems, Advantages/Limitations of Expert System
7	Aug. 26-31,2019	Developing an Expert System: Identification, Conceptualization, Formalization, Implementation, Testing,
8	Sep. 2-7, 2019	Using an Expert System, Application Areas of Expert System
9	Sep.9-14,2019	AI and Search Process: Brute Force Search – Depth First/Breadth First Search, Heuristic Search: Hill Climbing
10	Sep.16-21,2019	Constraint Satisfaction, Mean End Analysis, Best First Search, A* Algorithm, AO* Algorithm, Beam Search.
11	Sep.24-28,2019	Natural Language Processing: Introduction, Need, Goal, Fundamental Problems in Natural Language Understanding
12	Sep. 30- Oct.5, 2019	How People overcome Natural Language Problems,
13	Oct. 7-12, 2019	Speech Recognition: Introduction, Advantages and Approaches
14	Oct. 14-19, 2019	Introduction to Robotics: Parts of a Robot, Controlling a Robot, Intelligent Robots, Mobile Robots
15	Oct. 21-23, 2019	Revision,Test

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

Week	Odd Sem	Topics
1	July 16-20,2019	Introduction to Data Communication and Computer Networks, Uses of Computer Networks, Types of Computer and Topologies
2	July22-27,2019	Network Hardware Components, Connectors, Transceivers, Repeaters, Hubs, Network Interface Cards and PC Cards, Bridges, Switches, Routers, Gateways
3	July 29- Aug 3, 2019	Network Software: Network Design issues and Protocols, Connection-Oriented and Connectionless Services, OSI Reference Model
4	Aug. 5- 10,2019	Computer Hardware& software:I/o Devices,Relation Between Harware& Software
5	Aug. 12-17,2019	Networking Models: Distributed Systems, Client/Server Model, Peer-to-Peer Model, Web-Based Model and Emerging File-Sharing Model,
6	Aug. 19-24,2019	Analog and Digital data and signals, Bandwidth and Data Rate, Capacity, Baud Rate, Transmission Impairment, Data Rate Limits
7	Aug. 26-31,2019	Guided Transmission Media, Wireless Transmission , Communication Satellites, Switching and Multiplexing
8	Sep. 2-7, 2019	Modems and Modulation techniques, ADSL and Cable Modems
9	Sep.9-14,2019	Data Link Layer Design issues, Error Detection and Correction, Sliding Window Protocols: One-bit, Go Back N and Selective Repeat,
10	Sep.16-21,2019	Media Access Control: ALOHA, Slotted ALOHA, CSMA, Collision free protocols
11	Sep.24-28,2019	Introduction to LAN technologies: Ethernet, Switched Ethernet, Fast Ethernet, Gigabit Ethernet, Token Ring
12	Sep. 30- Oct.5, 2019	Introduction to Wireless LANs and Bluetooth, VLANs
13	Oct. 7-12, 2019	Routing Algorithms: Flooding, Shortest Path Routing, Distance Vector Routing, Link State Routing, Hierarchical Routing,
14	Oct. 14-19, 2019	Congestion Control, Traffic shaping, Choke packets, Load shedding, Elements of Transport Protocols,
15	Oct. 21-23, 2019	Network Security Issues: Security attacks, Encryption methods, Digital Signature, Digital Certificate

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

Week	Odd Sem	Topics
1	July 16-20,2019	Visual & Non-Visual programming, Procedural, Object-Based and Event-Driven Programming Languages
2	July22-27,2019	Object-Based and Event-Driven Programming Languages
3	July 29- Aug 3, 2019	VB as Even-Driven and Object-Based Language
4	Aug. 5- 10,2019	Menu bar, Toolbar, Project explorer, Toolbox, Properties Window, Form Designer
5	Aug. 12-17,2019	Form Layout, Immediate window, Default Controls in Tool Box Visual Development
6	Aug. 19-24,2019	Event Driven programming and Test,Variables: Declaring Variables, Types of variables, Converting Variables Types
7	Aug. 26-31,2019	User Defined Data Types, Forcing Variable Declaration, Scope & Lifetime of Variables
8	Sep. 2-7, 2019	Constants: Named & Intrinsic, Operators: Arithmetic, Relational & Logical operators
9	Sep.9-14,2019	Input/output in VB: Various Controls for I/O, Message box, Input Box, Print statement.
10	Sep.16-21,2019	Decision Statement and Looping Structure in Visual Basic
11	Sep.24-28,2019	Nested Control Structure; Arrays: Declaring and using Arrays
12	Sep. 30- Oct.5, 2019	One-dimensional, Two-dimensional and Multi-dimensional Arrays, Static and Dynamic arrays, Array of Arrays.
13	Oct. 7-12, 2019	General & Event Procedures, Subroutines, Functions, Calling Procedures,
14	Oct. 14-19, 2019	Arguments - Passing Mechanisms, Optional Arguments, Named Arguments, Functions Returning Custom Data Types
15	Oct. 21-23, 2019	Optional Arguments, Named Arguments, Functions Returning Custom Data Types

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

Week	Odd Sem	Topics
1	July 16-20,2019	Multimedia: Basic Concept, Definition, Components & Applications of Multimedia; Hypermedia and Multimedia
2	July22-27,2019	Multimedia Hardware and Software; Multimedia Software Tools; Presentation Tools
3	July 29- Aug 3, 2019	Multimedia Authoring: Introduction, Features, Types of Authoring Tools: Card or Page-Based
4	Aug. 5- 10,2019	IconBased, Time-Based, Object-Oriented; VRML: History, Features, **Class Test**
5	Aug. 12-17,2019	Image Data Types, File Formats
6	Aug. 19-24,2019	Color Models in Images and Video; **Assignment-1**
7	Aug. 26-31,2019	Video: Introduction, Types of Video Signals; Analog and Digital Video,Analog Video Standards:NTSC,PAL,SECAM
8	Sep. 2-7, 2019	Digital Video Standards: Chroma Subsampling, CCIR Standards, HDTV , **Class Test**
9	Sep.9-14,2019	Digital Audio: Basic Concepts, Analog vs. Digital Audio, Digitization of Sound; Digital Audio File Formats,
10	Sep.16-21,2019	MIDI Quantization and Transmission of Audio: Coding of Audio; Pulse Code Modulation
11	Sep.24-28,2019	Differential Coding of Audio; Lossless Predictive Coding; DPCM; DM; ADPCM, **Revision**
12	Sep. 30- Oct.5, 2019	Compression Techniques: Introduction, Types of Data Compression, Run-Length Coding
13	Oct. 7-12, 2019	VariableLength Coding, Dictionary-Based Coding and **Class Test**
14	Oct. 14-19, 2019	Transform Coding Image ,downsample chrominance components,DCT, Quantization
15	Oct. 21-23, 2019	Video Compression Techniques, 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	Jan. 1-4,2020	Interactivity Tool - JavaScript: Introduction, Features, Data types, Operators, Statements
2	Jan. 6-11,2020	Functions, Event Handling, Use of Predefined Object and Methods, Frames, Windows, Tables
3	Jan. 13-18, 2020	Images, Links Interactivity Tool - VBScript: Introduction, Features, Variables, Data Types,
		Numeric and Literal
4	Jan. 20-25,2020	Constants, Arrays, Operators, Subroutine Procedures, Function Procedures, Control Statements,
5	Jan. 27 -Feb 1,2020	Strings, Message and Input Boxes, Date and Time, Event Handlers, Embedding VBScript in HTML
6	Feb 3-8,2020	Interactivity Tool - Active Script Pages – Introduction, Features, Client-Server Model, Data Types,
		Decision Making Statements, Control statements,
7	Feb. 10-15, 2020	Use of Various Objects of ASP, Various Techniques of Connecting to Database,Other Interactivity
		Tools - Macromedia Flash,
8	Feb.17-22,2020	Macromedia Dreamweaver, PHP: Basic Introduction and Features ,DHTML: Introduction, Features
		, Events
9	Feb. 24-29,2020	Dynamic Positioning, Layer Object, Properties of STYLE, Dynamic Styles, Inline Styles, Event
		Handlers; Cascading Style Sheets (CSS): Basic Concepts,
10	March 2-7, 2020	Properties, Creating Style Sheets; Common Tasks with CSS: Text, Fonts, Margins, Links, Tables,
		Colors; Marquee; Mouseovers;
11	March 16-21,2020	Filters and Transitions; Adding Links; Adding Tables; Adding Forms; Adding Image and Sound;
		Use of CSS in HTML Documents Linking and Embedding of CSS in HTML Document
12	March, 23-28,2020	Microsoft FrontPage: Introduction, Features, Title Bar, Menu bar, FrontPage Tool Bar, Style, Font
		FontFace and Formatting Bar, Scroll Bars
13	March 30 - April 4,2020	XML: Introduction, Features, XML Support and Usage, Structure of XML Documents,

14	April 6-11, 2020	XML, Creating Document Type Declarations, Flow Objects,
15	April, 13-18, 2020	Working with Text and Font, Color and Background Properties;
16	April 20-25,2020	Revision
17	April27-30,2020	Test

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	Process Synchronization: The Critical Section Problem – Single Process/Two Process Solutions
		; Semaphores – Types, Implementation
2	Jan. 6-11,2020	Deadlocks and Starvation; Classical Problems of Synchronization – The Bounded Buffer Problem,
		The Readers and Writers Problem, The DiningPhilosophers Problem, Critical Regions, Monitors
3	Jan. 13-18, 2020	Directory Structure: Single Level, Two Level, Tree Structures, Acyclic Graph, General Graph;
		Directory Implementation, Recovery
4	Jan. 20-25,2020	Secondary Storage Structure: Disk Structure, Disk Scheduling: FCFS, SSTF, SCAN, C-SCAN, LOOK;
5	Jan. 27 -Feb 1,2020	Selection of Disk Scheduling Algorithm; Disk Management; Swap Space Management Network
		Operating Systems: Remote Login, Remote File Transfer;
6	Feb 3-8,2020	Distributed Operating System: Data Migration, Computation Migration, Process Migration,Linux:
		Introduction, Features, Architecture,
7	Feb. 10-15, 2020	Distributions, Accessing Linux System, Login/Logout/Shutting Down, Comparison of Linux with
		other Operating Systems, Commands in Linux: General-Purpose Commands,
8	Feb.17-22,2020	File Oriented Commands, Directory Oriented Commands, Communication Oriented Commands,
		Process Oriented Commands, Redirection of Input and Output, Pipes
9	Feb. 24-29,2020	Linux File System: Types of Files in Linux, File Attributes, Structure of File System, inode, File
		Permission, File System Components,
10	March 2-7, 2020	Standard File System, File System Types, Disk Related ,
11	March 16-21,2020	Processes in Linux: Introduction job Control in Linux using at, batch, corn & time command
12	March, 23-28,2020	The vi editor: Introduction,Modes of vi Editor, Command in vi Editor
13	March 30 - April 4,2020	Shell Programming: Introduction, Shell Variables, Shell Keywords, Operators
14	April 6-11, 2020	Assigning Values to the Variables, I/O in Shell, Control Structures,
15	April, 13-18, 2020	Creating & Executing Shell Programs in Linux.
16	April 20-25,2020	Revision
17	April27-30,2020	Test

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

Week	Even	Topics
1	Jan. 1-4,2020	I**ntroduction to Computer Graphics;** Interactive and Passive Graphics; Applications of Computer Graphics;
2	Jan. 6-11,2020	Display Devices: CRT; Random Scan, Raster Scan, Refresh Rate and Interlacing, Bit Planes, Color Depth, Color Palette, Color CRT Monitor,
3	Jan. 13-18, 2020	DVST, Flat-Panel Displays: Plasma Panel, LED, LCD; Lookup Table, Interactive Input Devices, Display Processor and **Revision and Test**
4	Jan. 20-25,2020	General Purpose Graphics Software, Coordinate Representations;Point-Plotting Techniques: Scan Conversion
5	Jan. 27 -Feb 1,2020	Scan-Converting a Straight Line: The Symmetrical DDA,The Simple DDA, Bresenham's Line Algorithm, **Assignment-1**
6	Feb 3-8,2020	Converting a Circle: Circle drawing using Polar Coordinates, Bresenham's Circle Algorithm, Scan-Converting an Ellipse: Polynomial Method,
7	Feb. 10-15, 2020	**Class Test,** Trigonometric Method; Polygon Area Filling: Scan-line Fill and Flood Fill Algorithms;
8	Feb.17-22,2020	**Revision of the syllabus done**
9	Feb. 24-29,2020	Homogeneous Coordinates; Other Transformations: Reflection, Shearing; Coordinate Transformations; Composite Transformations; Inverse Transformation;
10	March 2-7, 2020	Affine Transformations; Raster Transformation; Graphical Input: Pointing and Positioning Devices and Techniques
11	March 16-21,2020	**Revision and Class Test**
12	March, 23-28,2020	-Dimensional Viewing: Window and Viewport, 2-D Viewing Transformation Clipping: Point Clipping; Line Clipping: Cohen-Sutherland Line Clipping Algorithm, Mid-Point Subdivision Line Clipping Algorithm;
13	March 30 - April 4,2020	Polygon Clipping: Sutherland-Hodgman Polygon Clipping Algorithm; **Assignment-2**
14	April 6-11, 2020	Three-Dimensional Graphics: Three-Dimensional Display Methods;
15	April, 13-18, 2020	3-D Transformations: Translation, Rotation, Scaling; Composite Transformations;
16	April 20-25,2020	**Revision of the syllabus**
17	April27-30,2020	**Revision of the syllabus**

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

Week	Even	Topics
1	Jan. 1-4,2020	Internet: Introduction; History; Internet Services; TCP/IP: Architecture, Layers, Protocols; TCP/IP model versus OSI Model
2	Jan. 6-11,2020	World Wide Web (WWW) - The Client Side, The Server Side, Creating and Searching Information on the Web, Popular Search Engines
3	Jan. 13-18, 2020	URL, HTTP, Web Browsers, Chat & Bulletin Board, USENET & NNTP (Network News Transfer Protocol); Internet vs. Intranet
4	Jan. 20-25,2020	TCP, UDP and IP Protocols, Port Numbers; Format of TCP, UDP and IP; IPv4 addressing; The need for IPv6; IPv6 addressing
5	Jan. 27 -Feb 1,2020	Remote Procedure Call, IP Address Resolution- DNS, Domain Name Space; DNS Mapping; Recursive and Iterative Resolution
6	Feb 3-8,2020	Mapping Internet Addresses to Physical Addresses: ARP, RARP, DHCP; ICMP; IGMP;
7	Feb. 10-15, 2020	Application Layer: Electronic Mail: Architecture; Protocols - SMTP, MIME, POP, IMAP; Web Based Mail; File Access and Transfer
8	Feb.17-22,2020	FTP, Anonymous FTP, TFTP, NFS; Remote Login using TELNET
9	Feb. 24-29,2020	Voice and Video over IP: RTP, RTCP, IP Telephony and Signaling, RSVP
10	March 2-7, 2020	Routing in Internet: RIP, OSPF, BGP; Internet Multicasting; Mobile IP; Private Network Interconnection
11	March 16-21,2020	Network Address Translation (NAT), Virtual Private Network (VPN);
12	March, 23-28,2020	Internet Management and SNMP
13	March 30 - April 4,2020	Internet Multicasting; Mobile IP; Private Network Interconnection
14	April 6-11, 2020	Internet Security: E-Mail Security; Web Security; Firewall; Introduction to IPSec and SSL; Internet Management and SNMP;

15	April, 13-18, 2020	Introduction to IPSec and SSL; Internet Management and SNMP;
16	April 20-25,2020	Revision test
17	April27-30,2020	Sessional Test

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	Adding, Removing, Counting, Returning Items in a Collection, Processing a Collection
2	Jan. 6-11,2020	Working with Forms: Form Properties, Creating, Adding, Removing Forms in Project, Adding Multiple Forms
3	Jan. 13-18, 2020	Managing Forms at Run Time, Hiding & Showing Forms, Load & Unload Statements, Drag and Drop Operation
4	Jan. 20-25,2020	Activate & Deactivate events, Form-load event, Example using Forms, Programs in VB using Forms
5	Jan. 27 -Feb 1,2020	Menu Designing in VB**,** Adding a Menu to a Form, Modifying and Deleting Menu Items
6	Feb 3-8,2020	Adding Access Characters,Adding Shortcut Keys, Manipulating Menus using Common Dialog Box
7	Feb. 10-15, 2020	Attaching Code to Events, Creating Submenus, Dynamic Menu Appearance
8	Feb.17-22,2020	Scroll Bar, Slider Control, Tree View, List View, Rich Text Box Control, Toolbar
9	Feb. 24-29,2020	Status Bar, Progress Bar, Cool bar, Image List
10	March 2-7, 2020	Program Development in VB using Menus and Advance Controls
11	March 16-21,2020	: Sequential & Random files, Opening and Closing Data Files, Viewing the Data in a File, Performing Operations on a File
12	March, 23-28,2020	Creating and Writing Data to a Sequential File, Reading the Data in a Sequential File, Finding the End of a Data File
13	March 30 - April 4,2020	Locating a File, Reading and Writing a Random File (get, put, LOF, seek).
14	April 6-11, 2020	Using Paint, Line, Circle, Manipulating Graphics Program Development in VB using Files and Graphics
15	April, 13-18, 2020	Data Controls, Data-Bound Controls, DAO, RDO, ADO, Creating the Database, Setting Properties
16	April 20-25,2020	Applying Operations on Database, Viewing the Database, Updating the Database (adding, deleting records)
17	April27-30,2020	Sessional Test

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	Basic Principles of Object Oriented Programming, Introduction to Java, History and Features of Java, Java Virtual Machine (JVM),
2	Jan. 6-11,2020	Java's Magic Bytecode; The Java Runtime Environment; Basic Language Elements: Lexical Tokens, Identifiers, Keywords
3	Jan. 13-18, 2020	Literals, Comments, Primitive Data types, Operators, Assignments; Input/output in Java
4	Jan. 20-25,2020	Basics, I/O Classes, Reading Console Input, Control Structures in Java: Decision and Loop Control Statements
5	Jan. 27 -Feb 1,2020	Class and Object in Java: Defining Class in Java, Creating Objects of a Class, Defining Methods, Argument Passing Mechanism
6	Feb 3-8,2020	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
7	Feb. 10-15, 2020	Defining String, Operation on Array and String, Creating Strings using String Class, Creating Strings using StringBuffer Class
8	Feb.17-22,2020	Polymorphism in Java: Basic Concept, Types, Overriding vs. Overloading, Implementation
9	Feb. 24-29,2020	Extending Classes and Inheritance in Java: Benefits of Inheritance, Types of Inheritance in Java, Access Attributes, Inheriting Data Members and Methods
10	March 2-7, 2020	Role of Constructors in Inheritance, Use of "super"; Packages & Interfaces: Basic Concepts of Package and Interface, Organizing Classes and Interfaces in Packages,
11	March 16-21,2020	Defining Package, Adding Classes from a Package to Your Program, CLASSPATH Setting for Packages
12	March, 23-28,2020	Import Package, Naming Convention For Packages , Access Protection in Packages, Standard Packages

13	March 30 - April 4,2020	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
14	April 6-11, 2020	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
15	April, 13-18, 2020	Creating Simple Applets; GUI Programming: Designing Graphical User Interfaces in Java, Components and Containers, Using Containers, Layout Managers, AWT Components, AWT Classes, AWT Controls,
16	April 20-25,2020	Revision test
17	April27-30,2020	Sessional Test

LESSON PLANS
B.Sc. (Computer Science)
SESSION (2019-20)

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

Week	Odd Sem	Topics
1	July 16-20,2019	Computer Fundamentals: Definition, Functional components of computer, characteristics &classification of computers
2	July22-27,2019	Applications of computers in various fields, Concept of primary & secondary memory, RAM
3	July 29- Aug 3, 2019	ROM, types of ROM,Cache memory, CPU Registers, flash memory
4	Aug. 5- 10,2019	Secondary storage devices: Sequential & direct access devices viz. magnetic tape, magnetic disk, CD, DVD
5	Aug. 12-17,2019	Computer hardware & software: I/O devices, definition of software, relationship between hardware and software, types of software
6	Aug. 19-24,2019	motherboard, ports,Overview of operating system: Definition, functions of operating system, concept of multiprogramming, multitasking
7	Aug. 26-31,2019	multithreading, multiprocessing, time-sharing, real time,single-user & multi-user operating system
8	Sep. 2-7, 2019	examples of various operating systems,Planning the Computer Program: Concept of problem solving, Problem definition
9	Sep.9-14,2019	Program design, Debugging, Types of errors in programming, Documentation.Techniques of Problem Solving: Flowcharting, algorithms
10	Sep.16-21,2019	pseudo code, decision table, Structured programming concepts
11	Sep.24-28,2019	Programming methodologies viz. top-down and bottomup programming
12	Sep. 30- Oct.5, 2019	Searching, Sorting, and Merging: Linear & Binary Searching
13	Oct. 7-12, 2019	Bubble, Selection Sort, Insertion Sorting, Merging,Computer Languages: Analogy with natural language, machine language, assembly language
14	Oct. 14-19, 2019	high-level language, language translators, characteristics of a good programming language
15	Oct. 21-23, 2019	Revison,Sessional

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

Week	Odd Sem	Topics
1	July 16-20,2019	Windows: Basics of Windows. Windows History, Basic components of windows, icons, types of icons, taskbar, activating windows,
2	July22-27,2019	using desktop, title bar, running applications, Windows explorer, managing files and folders,
3	July 29- Aug 3, 2019	Configuring System devices. Control panel , using windows accessories.
4	Aug. 5- 10,2019	Documentation Using Word - Introduction to Office Automation, Creating & Editing Document, Formatting Document,
5	Aug. 12-17,2019	Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary,Printing, Styles, linking and embedding object.
6	Aug. 19-24,2019	Page Formatting, Bookmark, Advance Features of MS-Word-Mail Merge,
7	Aug. 26-31,2019	Macros, Tables, File Management,
8	Sep. 2-7, 2019	Revison and Test
9	Sep.9-14,2019	Electronic Spread Sheet using Excel - Introduction to MS-Excel, Creating & Editing Worksheet, Formatting and Essential Operations,
10	Sep.16-21,2019	Formulas and Functions, Charts,
11	Sep.24-28,2019	Advance features of MS-Excel-Pivot table & Pivot Chart, Linking and Consolidation,
12	Sep. 30- Oct.5, 2019	Database Management using Excel-Sorting, Filtering, Table, Validation, Goal Seek, Scenario.

13	Oct. 7-12, 2019	Presentation using PowerPoint: Presentations, Creating, Manipulating & Enhancing Slides, Organizational Charts, Excel Charts,
14	Oct. 14-19, 2019	Animations and Sounds, Inserting Animated Pictures or Accessing through Object, Word Art, Layering art Objects,In-Built Sound Effect.
15	Oct. 21-23, 2019	Revison,Sessional

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	Overview of C: History & Importance of C, Structure of a C Program
2	Jan. 6-11,2020	Elements of C: C character set, identifiers and keywords, Data types, Constants and Variables
3	Jan. 13-18, 2020	Assignment statement, Symbolic constant. Input/output: Unformatted I/O function
4	Jan. 20-25,2020	Input functions (scanf(), getch(), getche(), getchar(), gets()), output functions (printf(), putch(), putchar(), puts())
5	Jan. 27 -Feb 1,2020	Operators & Expression: Arithmetic, relational, logical, bitwise, unary
6	Feb 3-8,2020	assignment,conditional operators and special operators. Arithmetic expressions, evaluation of arithmetic expression
7	Feb. 10-15, 2020	type casting and conversion, operator hierarchy & associativity
8	Feb.17-22,2020	Decision making & branching: Decision making with IF statement, IF-ELSE statement
9	Feb. 24-29,2020	Nested IF statement, ELSE-IF ladder, switch statement, goto statement
10	March 2-7, 2020	Decision making & looping: For, while, and do-while loop
11	March 16-21,2020	jumps in loops, break, continue statement
12	March, 23-28,2020	Storage classes in C: auto, extern, register and static storage class, their scope, storage, & lifetime
13	March 30 - April 4,2020	formatted I/O Functions
14	April 6-11, 2020	Arrays: Definition, types, initialization, processing an array
15	April, 13-18, 2020	Structure and Union
16	April 20-25,2020	Revision
17	April27-30,2020	Sessional

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	Information Representation: Number Systems, Binary Arithmetic, Fixed-point and Floatingpoint representation of numbers
2	Jan. 6-11,2020	BCD Codes, Error detecting and correcting codes, Character Representation – ASCII, EBCDIC.
3	Jan. 13-18, 2020	Binary Logic: Boolean Algebra, Boolean Theorems, Boolean Functions
4	Jan. 20-25,2020	Truth Tables, Canonical and Standard forms of Boolean functions,
5	Jan. 27 -Feb 1,2020	Simplification of Boolean Functions – Venn Diagram, Karnaugh Maps.
6	Feb 3-8,2020	Revision and Test
7	Feb. 10-15, 2020	Digital Logic: Basic Gates – AND, OR, NOT, Universal Gates – NAND, NOR,
8	Feb.17-22,2020	Other Gates – XOR, XNOR etc,Combinational Circuits: Half-Adder
9	Feb. 24-29,2020	Full-Adder, HalfSubtractor,Full-Subtractor, Encoders, Decoders,Multiplexers, Demultiplexers,
10	March 2-7, 2020	Comparators, Code Converters.
11	March 16-21,2020	Sequential Logic: Characteristics, Flip-Flops, Clocked RS, D type,
12	March, 23-28,2020	JK, T type and MasterSlave flip-flops. State table, state diagram
13	March 30 - April 4,2020	Flip-flop excitation tables Shift registers : serial in parallel out and parallel in parallel out.. Designing counters – Asynchronous

14	April 6-11, 2020	Synchronous Binary Counters, Modulo-N Counters and Up-Down Counters
15	April, 13-18, 2020	Revision and Test
16	April 20-25,2020	Revision
17	April27-30,2020	Sessional

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

Week	Odd Sem	Topics
1	July 16-20,2019	Introduction: Elementary data organization, Data Structure definition, Data type vs. data structure, Categories of data structures, Data structure operation
2	July22-27,2019	Applications of data structures, Algorithms complexity and time-space tradeoff, Big-O notation.
3	July 29- Aug 3, 2019	Strings: Introduction, strings, String operations, Pattern matching algorithms
4	Aug. 5- 10,2019	Arrays: Introduction, Linear arrays, Representation of linear array in memory, Traversal, Insertions, Deletion in an array
5	Aug. 12-17,2019	Multidimensional arrays, Parallel arrays, Sparse matrix. Linked List: Introduction, Array vs. linked list
6	Aug. 19-24,2019	Representation of linked lists in memory, Traversal, Insertion
7	Aug. 26-31,2019	Deletion, Searching in a linked list, Header linked list, Circular linked list
8	Sep. 2-7, 2019	Two-way linked list, Garbage collection, Applications of linked lists. Algorithm of insertion/ deletion in SLL.
9	Sep.9-14,2019	Stack: primitive operation on stack, algorithms for push and pop. Representation of Stack as Linked List and array, Stacks applications : polish notation
10	Sep.16-21,2019	recursion. Introduction to queues, Primitive Operations on the Queues, Circular queue,Priority queue
11	Sep.24-28,2019	Representation of Queues as Linked List and array, Applications of queueAlgorithm on insertion and deletion in simple queue and circular queue
12	Sep. 30- Oct.5, 2019	Trees - Basic Terminology, representation, Binary Trees, Tree Representations using Array & Linked List,Basic operation on Binary tree
13	Oct. 7-12, 2019	Traversal of binary trees:- In order, Preorder & post order,Applications of Binary tree,Algorithm of tree traversal with and without recursion
14	Oct. 14-19, 2019	Introduction to graphs,Definition, Terminology, Directed, Undirected & Weighted graph, Representation of graphs.
15	Oct. 21-23, 2019	Sessional Test

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

Week	Odd Sem	Topics
1	July 16-20,2019	Introduction: Program vs. Software, Software Engineering, Programming paradigms, Software Crisis – problem and causes
2	July22-27,2019	Phases in Software development: Requirement Analysis, Software Design, Coding, Testing, Maintenance
3	July 29- Aug 3, 2019	Software Development Process Models: Waterfall, Prototype, Evolutionary and Spiral models, Role of Metrics.
4	Aug. 5- 10,2019	Feasibility Study, Software Requirement Analysis and Specifications: SRS, Need for SRS
5	Aug. 12-17,2019	Characteristics of an SRS, Components of an SRS, Problem Analysis, Information gathering tools
6	Aug. 19-24,2019	Organising and structuring information
7	Aug. 26-31,2019	Requirement specification, validation and metrics
8	Sep. 2-7, 2019	Structured Analysis and Tools: Data Flow Diagram, Data Dictionary, Decision table, Decision trees, Structured English
9	Sep.9-14,2019	Entity-Relationship diagrams .Software Project Planning: Cost estimation: COCOMO mode
10	Sep.16-21,2019	Project scheduling, Staffing and personnel planning, team structure,
11	Sep.24-28,2019	Software configuration management, Quality assurance plans
12	Sep. 30- Oct.5, 2019	Project monitoring plans, Risk Management,Software testing strategies: unit testing, integration testing
13	Oct. 7-12, 2019	V and V , System testing, Alpha and Beta testing,Black box, white box testing. Cyclomatic Complexity.
14	Oct. 14-19, 2019	Software Implementation and Maintenance: Type of maintenance, Management of Maintenance, Maintenance Process, maintenance characteristics.
15	Oct. 21-23, 2019	Revision, Sessional Test

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	Object oriented Programming: Object-Oriented programming features and benefits. Object-Oriented features of C++
2	Jan. 6-11,2020	Class and Objects, Data Hiding & Encapsulation, Structures, Data members and Member functions, Scope resolution operator and its significance
3	Jan. 13-18, 2020	Static Data Members, Static member functions, Nested and Local Class, Accessing Members of Class and Structure
4	Jan. 20-25,2020	Constructor, Initialization using constructor, types of constructor– Default, Parameterized & Copy Constructors, Constructor overloading
5	Jan. 27 -Feb 1,2020	Default Values to Parameters, Destructors
6	Feb 3-8,2020	Console I/O: Hierarchy of Console Stream Classes, Unformatted and Formatted I/O Operations
7	Feb. 10-15, 2020	Manipulators, Friend Function, Friend Class, Arrays, Array of Objects, Passing and Returning Objects to Functions
8	Feb.17-22,2020	String Handling in C++
9	Feb. 24-29,2020	Dynamic Memory Management: Pointers, new and delete Operator, Array of Pointers to Objects,
10	March 2-7, 2020	this Pointer, Passing Parameters to Functions by Reference & pointers
11	March 16-21,2020	Static Polymorphism: Operators in C++, Precedence and Associativity Rules, Operator Overloading
12	March, 23-28,2020	Unary & Binary Operators Overloading
14	April 6-11, 2020	Inline Functions,
15	April, 13-18, 2020	Merits/Demerits of Static Polymorphism
16	April 20-25,2020	Revision
17	April27-30,2020	Sessional Test

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	Introduction: operating system, architecture, functions, characteristics, historical evolution
2	Jan. 6-11,2020	Types: Serial batch, multiprogramming, time sharing, real time, distributed and parallel. OS as resource Manager
3	Jan. 13-18, 2020	Computer system structures: I/O structure, storage structure, storage hierarchy
4	Jan. 20-25,2020	Operating system structure: system components, services, system calls, system programs, system structures
5	Jan. 27 -Feb 1,2020	Process management: process concepts, process state, process control block, operations, process scheduling
6	Feb 3-8,2020	Inter process communication.
7	Feb. 10-15, 2020	CPU Scheduling: scheduling criteria, levels of scheduling, scheduling algorithms, multiple processor scheduling
8	Feb.17-22,2020	Deadlocks: Characterization, methods of handling, deadlock detection, prevention, avoidance, recovery
9	Feb. 24-29,2020	Storage Management: memory management of single-user and multiuser operating system, partitioning, swapping,
10	March 2-7, 2020	Paging and segmentation, virtual memory
11	March 16-21,2020	Page replacement Algorithms, Thrashing.
12	March, 23-28,2020	Process synchronization: critical section problems, semaphores. Mutual exclusion
13	March 30 - April 4,2020	Device and file management: Disk scheduling, Disk structure, Disk management
14	April 6-11, 2020	File Systems: Functions of the system, File access and allocation methods
15	April, 13-18, 2020	Directory Systems: Structured Organizations, directory and file protection mechanisms
16	April 20-25,2020	Revision
17	April 27-30,2020	Sessional Test

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

Week	Odd Sem	Topics
1	July 16-20,2019	Basic Concepts – Data, Information, Records and files. Traditional file Based Approach
2	July22-27,2019	Limitations of Traditional File Based Approach, Database Approach-Characteristics of Database Approach
3	July 29- Aug 3, 2019	Database Management System (DBMS), Components of DBMS Environment, DBMS Functions and Components, Advantages of DBMS
4	Aug. 5- 10,2019	Disadvantages of DBMS. Actors on the Scene - Data and Database Administrator, Database Designers
5	Aug. 12-17,2019	End users Applications Developers and Workers behind the Scene. Database System Architecture – Three Levels of Architecture
6	Aug. 19-24,2019	Schemas – External, Conceptual and Internal Level, Database Languages – VDL, DDL, SDL, DML, SQL, Mappings – External/ Conceptual
7	Aug. 26-31,2019	Conceptual/Internal mapping,Instances, Data Independence – Logical and Physical Data Independence
8	Sep. 2-7, 2019	Data Models: High Level, Low Level and Representational – Records- based Data Models
9	Sep.9-14,2019	Object-based Data Models, Physical Data Models and Conceptual Models Entity-Relationship Model – Concepts, Entity Types, Entity Sets.
10	Sep.16-21,2019	Attributes, Relationships,Constraints, Keys , Degree, Cardinality etc. ER Diagrams of any Database Organization.
11	Sep.24-28,2019	Inventory System, Payroll System,Reservation System, Online Book Store etc.
12	Sep. 30- Oct.5, 2019	Classification of Database Management System, Centralized and Client Server architecture
13	Oct. 7-12, 2019	Relational Data Model:-Brief History, Terminology in Relational Data Structure, Relations, Properties of Relations,
14	Oct. 14-19, 2019	Keys – Primary, Secondary, Composite, Candidate Keys,Alternate and Foreign Key, Domains, Integrity Constraints over Relations.
15	Oct. 21-23, 2019	Sessional

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

Week	Odd Sem	Topics
1	July 16-20,2019	Introduction to Internet and World Wide Web; Evolution and History of World Wide Web
2	July22-27,2019	Basic Features; Web Browsers; Web Servers; Hypertext Transfer Protocol
3	July 29- Aug 3, 2019	URLs; Searching and WebCasting Techniques; Search Engines and Search Tools
4	Aug. 5- 10,2019	Steps for Developing Website; Choosing the Contents; Home Page
5	Aug. 12-17,2019	Domain Names; Internet Service Provider; Planning and Designing Web Site
6	Aug. 19-24,2019	Creating a Website; Web Publishing: Hosting Site
7	Aug. 26-31,2019	Introduction to HTML; Hypertext and HTML; HTML Document Features
8	Sep. 2-7, 2019	HTML Tags; Header, Title, Body, Paragraph, Ordered/Unordered Line
9	Sep.9-14,2019	Creating Links; Headers; Text Styles; Text Structuring; Text Colors and Background
10	Sep.16-21,2019	Formatting Text; Page layouts; Insertion of Text, Movement of Text
11	Sep.24-28,2019	Images: Types of Images, Insertion of Image, Movement of Image
12	Sep. 30- Oct.5, 2019	Ordered and Unordered lists; Inserting Graphics; Table Handling Functions like Columns, Rows, Width
13	Oct. 7-12, 2019	Frame Creation and Layouts
14	Oct. 14-19, 2019	Working with Forms and Menus,Working with Buttons like Radio, Check Box
15	Oct. 21-23, 2019	Sessional

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	Relational Model Concepts, Codd's Rules for Relational Model, Hierarchical Data Model– Introduction
2	Jan. 6-11,2020	Features, Components, Example, Network Data Model– Introduction, Features, Components
3	Jan. 13-18, 2020	Example, Differences between Hierarchical Data Model and Network Data Model
4	Jan. 20-25,2020	Comparison of Relational Data Model with Hierarchical Data Model and Network Data Model
5	Jan. 27 -Feb 1,2020	Relational Algebra:-Selection and Projection, Set Operation, Join and Division.
6	Feb 3-8,2020	Relational Calculus: Tuple Relational Calculus and Domain Relational Calculus.
7	Feb. 10-15, 2020	Functional Dependencies and Normalization -- Purpose, Data Redundancy, Update Anomalies
8	Feb.17-22,2020	Partial/Fully Functional Dependencies, Transitive Functional Dependencies, Characteristics of Functional Dependencies
9	Feb. 24-29,2020	Decomposition and Normal Forms (1NF, 2NF, 3NF & BCNF).
10	March 2-7, 2020	SQL: Data Definition and data types, Create Table, Insert Data, Viewing Data, Filtering Table
11	March 16-21,2020	Data, Sorting data, Creating Table from a Table, Destroy table, Update, View, Delete, Join,
12	March, 23-28,2020	Concatenating data , Primary Key, Foreign KeyUnique Key, Check Constraint, Using Functions
13	March 30 - April 4,2020	PL/SQL-Introduction, Advantages of PL/SQL The Generic PL/SQL Block: PL/SQL Execution Environment
14	April 6-11, 2020	PL/SQL Character Set and Data Types, Declaration and Assignment of Variables
15	April, 13-18, 2020	Control Structure in PL/SQL: Conditional Control, Iterative Control, Sequential Control
16	April 20-25,2020	Revision
17	April 27-30,2020	Test

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	Introduction to Data Communication and Computer Networks; Uses of Computer Networks; Types of Computer Networks
2	Jan. 6-11,2020	Topologies; Network Hardware Components: Connectors, Transceivers, Repeaters, Hubs, Network Interface Cards
3	Jan. 13-18, 2020	PC Cards, Bridges, Switches, Routers, Gateways; Network Software:
5	Jan. 27 -Feb 1,2020	OSI Reference Model; TCP/IP Model;
6	Feb 3-8,2020	Analog and Digital Communications Concepts: Analog and Digital data and signals;
7	Feb. 10-15, 2020	Bandwidth and Data Rate, Capacity, Baud Rate; Guided and Wireless Transmission Media
8	Feb.17-22,2020	Communication Satellites; Switching and Multiplexing; Modems and modulation techniques
9	Feb. 24-29,2020	Data Link Layer Design issues; Error Detection and Correction methods;
10	March 2-7, 2020	Sliding Window Protocols: One-bit, Go Back N and Selective Repeat; Media Access Control: ALOHA, Slotted ALOHA
11	March 16-21,2020	CSMA, Collision free protocols; Introduction to LAN technologies: Ethernet, Switched Ethernet
12	March, 23-28,2020	Fast Ethernet, Gigabit Ethernet; Token Ring; Introduction to Wireless LANs and Bluetooth
13	March 30 - April 4,2020	Routing Algorithms: Flooding, Shortest Path Routing, Distance Vector Routing
14	April 6-11, 2020	Link State Routing, Hierarchical Routing; Congestion Control; Traffic shaping; Choke packets
15	April, 13-18, 2020	Load shedding; Application Layer: Introduction to DNS, E-Mail and WWW services
16	April 20-25,2020	Network Security Issues: Security attacks; Encryption methods; Firewalls; Digital Signatures;
17	April 27-30,2020	Revision, Test

LESSON PLANS
B.Com. (Gen.)
SESSION (2019-20)

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

Week	Odd Sem	Topics
1	July 16-20,2019	Introduction to Computers: definition, components and characteristics of computers; Input Devices
2	July22-27,2019	output devices: memory and mass storage devices;
3	July 29- Aug 3, 2019	Various Portable devices Introduction to modern CPU and processors.
4	Aug. 5- 10,2019	Computer software: introduction, types of software: system, application and utility software;
5	Aug. 12-17,2019	Revision and Class Test of Previous Topics, Application and utility software
6	Aug. 19-24,2019	Programming languages, language interpreters, difference, **Assignment-1**
7	Aug. 26-31,2019	Introduction to operating system: types and function of operating system
8	Sep. 2-7, 2019	Classification of various operating System
9	Sep.9-14,2019	Real-time applications and revision of Previous topics
10	Sep.16-21,2019	Operating systems for Tabs, mobile phones, Android, etc.
11	Sep.24-28,2019	Open source software: An overview.**Assignment-2**
12	Sep. 30- Oct.5, 2019	Application software: Spreadsheets, applications, functions
13	Oct. 7-12, 2019	Application software:Word processors, Applications, functions, advanteges and disadvantages,Database management software;
14	Oct. 14-19, 2019	Networks basic, types of networks, topologies,
15	Oct. 21-23, 2019	Wired and Wireless media,hardware and software required for networking

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	Introduction to Internet: Concept, Application and Uses of Internet.
2	Jan. 6-11,2020	Introduction to Internet:Internet Services.
3	Jan. 13-18, 2020	Information Technology and Business: Concepts of data, Information and Information System
4	Jan. 20-25,2020	Information Technology and Business:Effects of IT on Business;Types of Information System
5	Jan. 27 -Feb 1,2020	Revision
6	Feb 3-8,2020	Transaction Processing System (TPS), Management Information System (MIS).
7	Feb. 10-15, 2020	Assignment-1
8	Feb.17-22,2020	Introduction to E-commerce:E-Commerce and World Wide Web.
9	Feb. 24-29,2020	Introduction to E-commerce:E-Commerce Application Services.
10	March 2-7, 2020	E-Commerce Models: B2B, B2C, C2C;

11	March 16-21,2020	Electronic Data Interchange: Benefits, Components of EDI, EDI implementation.
12	March, 23-28,2020	Electronic Data Interchange:Security Issues in E-Commerce.
13	March 30 - April 4,2020	M-commerce: An Overview
14	April 6-11, 2020	E-Governance: An Overview.
15	April, 13-18, 2020	Assignment-2
16	April 20-25,2020	Revision & Test Series
17	April 27-30,2020	Sessional Test

LESSON PLANS
B.Com. (Tax and Honors)
SESSION (2019-20)

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

Week	Odd Sem	Topics
1	July 16-20,2019	Introduction to Computers: definition, components and characteristics of computers; Input Devices
2	July22-27,2019	output devices: memory and mass storage devices;
3	July 29- Aug 3, 2019	Various Portable devices Introduction to modern CPU and processors.
4	Aug. 5- 10,2019	Computer software: introduction, types of software: system, application and utility software;
5	Aug. 12-17,2019	**Revision and Class Test of Previous Topics,** **A**pplication and utility software
6	Aug. 19-24,2019	Programming languages, language interpreters, difference, **Assignment-1**
7	Aug. 26-31,2019	Introduction to operating system: types and function of operating system
8	Sep. 2-7, 2019	Classification of various operating System
9	Sep.9-14,2019	Real-time applications and revision of Previous topics
10	Sep.16-21,2019	Operating systems for Tabs, mobile phones, Android, etc.
11	Sep.24-28,2019	Open source software: An overview.**Assignment-2** Application softwre: Spreadsheets, applications, functions
12	Sep. 30- Oct.5, 2019	Application software:Word processors, Applications, functions, advanteges and disadvantages,Database management software;
13	Oct. 7-12, 2019	Networks basic, types of networks, topologies,
14	Oct. 14-19, 2019	Wired and Wireless media,hardware and software required for networking
15	Oct. 21-23, 2019	**Revision of syllabus.**

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	Introduction to Internet: Concept, Application and Uses of Internet.
2	Jan. 6-11,2020	Introduction to Internet:Internet Services.
3	Jan. 13-18, 2020	Information Technology and Business: Concepts of data, Information and Information System
4	Jan. 20-25,2020	Information Technology and Business:Effects of IT on Business;Types of Information System
5	Jan. 27 -Feb 1,2020	Revision
6	Feb 3-8,2020	Transaction Processing System (TPS), Management Information System (MIS).
7	Feb. 10-15, 2020	Assignment-1
8	Feb.17-22,2020	Introduction to E-commerce:E-Commerce and World Wide Web.
9	Feb. 24-29,2020	Introduction to E-commerce:E-Commerce Application Services.
10	March 2-7, 2020	E-Commerce Models: B2B, B2C, C2C;

11	March 16-21,2020	Electronic Data Interchange: Benefits, Components of EDI, EDI implementation.
12	March, 23-28,2020	Electronic Data Interchange:Security Issues in E-Commerce.
13	March 30 - April 4,2020	M-commerce: An Overview
14	April 6-11, 2020	E-Governance: An Overview.
15	April, 13-18, 2020	Assignment-2
16	April 20-25,2020	Revision & Test Series
17	April 27-30,2020	Sessional Test

LESSON PLANS
B.Com. (Voc)
SESSION (2019-20)

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

Week	Odd Sem	Topics
1	July 16-20,2019	Introduction to Computers: definition, components and characteristics of computers; Input Devices
2	July22-27,2019	output devices: memory and mass storage devices;
3	July 29- Aug 3, 2019	Various Portable devices Introduction to modern CPU and processors.
4	Aug. 5- 10,2019	Computer software: introduction, types of software: system, application and utility software;
5	Aug. 12-17,2019	Revision and Class Test of Previous Topics, Application and utility software
6	Aug. 19-24,2019	Programming languages, language interpreters, difference, **Assignment-1**
7	Aug. 26-31,2019	Introduction to operating system: types and function of operating system
8	Sep. 2-7, 2019	Classification of various operating System
9	Sep.9-14,2019	Real-time applications and revision of Previous topics
10	Sep.16-21,2019	Operating systems for Tabs, mobile phones, Android, etc.
11	Sep.24-28,2019	Open source software: An overview.**Assignment-2**
12	Sep. 30- Oct.5, 2019	Application software: Spreadsheets, applications, functions
13	Oct. 7-12, 2019	Application software:Word processors, Applications, functions, advanteges and disadvantages,Database management software;
14	Oct. 14-19, 2019	Networks basic, types of networks, topologies,
15	Oct. 21-23, 2019	Wired and Wireless media ,hardware and software required for networking

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	Introduction to Internet: Concept, Application and Uses of Internet.
2	Jan. 6-11,2020	Introduction to Internet:Internet Services.
3	Jan. 13-18, 2020	Information Technology and Business: Concepts of data, Information and Information System
4	Jan. 20-25,2020	Information Technology and Business:Effects of IT on Business;Types of Information System
5	Jan. 27 -Feb 1,2020	Revision
6	Feb 3-8,2020	Transaction Processing System (TPS), Management Information System (MIS).
7	Feb. 10-15, 2020	Assignment-1
8	Feb.17-22,2020	Introduction to E-commerce:E-Commerce and World Wide Web.
9	Feb. 24-29,2020	Introduction to E-commerce:E-Commerce Application Services.

10	March 2-7, 2020	E-Commerce Models: B2B, B2C, C2C;
11	March 16-21,2020	Electronic Data Interchange: Benefits, Components of EDI, EDI implementation.
12	March, 23-28,2020	Electronic Data Interchange:Security Issues in E-Commerce.
13	March 30 - April 4,2020	M-commerce: An Overview
14	April 6-11, 2020	E-Governance: An Overview.
15	April, 13-18, 2020	Assignment-2
16	April 20-25,2020	Revision & Test Series
17	April 27-30,2020	Sessional Test

LESSON PLANS
M.Com. (Final)
SESSION (2019-20)

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

Week	Odd Sem	Topics
1	July 16-20,2019	Computer System: Meaning, scope, types
2	July22-27,2019	Basic computer organization: Central Processing Unit,input, output
3	July 29- Aug 3, 2019	storage devices; Introduction to software; System software
4	Aug. 5- 10,2019	operating system, user interface and its types; Application software - word processing
5	Aug. 12-17,2019	Revision and class Test
6	Aug. 19-24,2019	spreadsheets; Introduction to databases, tables, queries, reports
7	Aug. 26-31,2019	form generation, Information Technology in Business: Concept of information technology
8	Sep. 2-7, 2019	Local Area Network,MAN, Wide Area Networks
9	Sep.9-14,2019	Network Topologies, Electronic data processing
10	Sep.16-21,2019	Various Transmission media
11	Sep.24-28,2019	Intranet and extranet, EDI concept and evolution
12	Sep. 30- Oct.5, 2019	World Wide Web; Multimedia technologies
13	Oct. 7-12, 2019	Video conferencing, Broadband networks, Planning and designing web pages
14	Oct. 14-19, 2019	Fuzzy Logic, Fuzzy operations, Applications , Advantages & limitations.
15	Oct. 21-23, 2019	Revision and class Test

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

Week	Even Sem	Topics
1	Jan. 1-4,2020	Introduction to E-commerce: Meaning of electronic commerce, business applications of e-commerce
2	Jan. 6-11,2020	comparison with traditional commerce; Business models in E-commerce
3	Jan. 13-18, 2020	e-shops, e-procurement, e-auctions, value chain integrators
4	Jan. 20-25,2020	information brokerage, telecommunication, collaboration platforms
5	Jan. 27 -Feb 1,2020	Electronic payment system; E-Banking –concept, operations
6	Feb 3-8,2020	Online fund transfer – RTGC, ATM, etc., Online share market operations
7	Feb. 10-15, 2020	Online marketing, Web-based advertising – concept, advantages; Types of online advertisements
8	Feb.17-22,2020	Search engine – as an advertising media, search engine optimisation – concept and techniques
9	Feb. 24-29,2020	Email marketing; Social Networking and marketing – promotion, opinion formulation
10	March 2-7, 2020	Viral Marketing, E-retailing-concept, advantages, limitations

11	March 16-21,2020	CRM and Information Technology, Tools to conducting online research – secondary research
12	March, 23-28,2020	online focus groups, web based surveys, data mining from social networking sites
13	March 30 - April 4,2020	Cloud computing – Concept, uses in business; Enterprise Resource Planning
16	April 20-25,2020	Revision
17	April 27-30,2020	Test

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