# LESSON PLAN

## Of Computer Science Department

## BCA course

## Session 2020-21

**Class : BCA 1st year(1st Sem.)**

**Subject Name & Code : Computer & Programming Fundamentals(BCA-101)**

| S.No. | Weeks | Topic Covered |
|---|---|---|
| 1 | 1st week | Generations of Computers, Definition, Block Diagram along with its components, characteristics & classification of computers, Limitations of Computers, Human-Being VS Computer |
| 2 | 2nd week | Applications of computers in various fields. Memory: Concept of primary & secondary memory, RAM, ROM, types of ROM, Cache Memory, flash memory |
| 3 | 3rd week | Secondary storage devices: Sequential & direct access devices viz. magnetic tape, magnetic disk, optical disks i.e. CD, DVD, virtual memory. |
| 4 | 4th week | Revision and Doubt Clarification of 1st unit,<br>Class Test of 1st unit |
| 5 | 5th week | Computer hardware & software: I/O devices, definition of software, relationship between hardware and software, types of software. |
| 6 | 6th week | Overview of operating system: Definition, functions of operating system, concept of multiprogramming, multitasking, multithreading, multiprocessing |
| 7 | 7th week | Time-sharing, real time, single-user & multi-user operating system. Computer Virus: Definition, types of viruses, Characteristics of viruses |

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| **8** | **8th week** | Anti-virus software.<br><br>Assignment and class test of 2nd Unit |
| **9** | **9th week** | Computer Languages: Analogy with natural language, machine language, assembly language, high-level languages, fourth generation languages |
| **10** | **10th week** | Compiler, interpreter, assembler, Linker, Loader , characteristics of a good programming language, Planning the Computer Program: Concept of problem solving, Problem definition, Program design, Debugging |
| **11** | **11th week** | Types of errors in programming, Documentation. Structured programming concepts, Programming methodologies viz. top-down and bottom up programming |
| **12** | **12th week** | Advantages and disadvantages of Structured programming.<br><br>Revision and Doubt Clarification of 3rd unit,<br><br>Assignment and class test of 3rd Unit |
| **13** | **13th week** | Overview of Networking: An introduction to computer networking, Network types (LAN, WAN, MAN), Network topologies |
| **14** | **14th week** | Modes of data transmission, Forms of data transmission, Transmission channels(media), Introduction to internet and its uses, Applications of internet |
| **15** | **15th week** | Hardware and Software requirements for internet, Intranet, Applications of intranet. |
| **16** | **16th week** | Revision and Doubt Clarification,<br><br>Class Test and assignment of Unit 4 |

## Class : BCA 1st Year(1st Sem.)

## Subject Name and Code: PC SOFTWARE (BCA-102)

| S. No. | WEEKS | Topic Covered |
|---|---|---|
| 1 | **Week 1** | MS-Windows: Operating system-Definition<br>Revision |
| 2 | **Week 1** | Functions, basics of Windows. Basic components of windows, icons, types of icons , revision. |
| 3 | **Week 2** | Test --- operating system<br><br>Taskbar, activating windows, using desktop, title bar, running applications, exploring computer,<br>managing files and folders, |
| 4 | **Week 2** | **Group Discussion**<br>**Assignment :- 1** |
| 5 | **Week 3** | Copying and moving files and folders.<br>Control panel – display properties,<br>adding and removing software and hardware,<br>Revision |
| 6 | **Week 3** | Setting date and time, screensaver and appearance.<br>Using windows accessories.<br>Group Discussion |
| 7 | **Week 4** | Documentation Using MS-Word - Introduction to word processing interface,<br>Toolbars. Problem Solution. |
| 8 | **Week 4** | Menus, Creating & Editing Document, Formatting Document, |
| 9 | **Week 5** | Finding and replacing text, Format painter,<br>Group discussion |
| 10 | **Week 5** | Header and footer, Drop cap, Auto-text,<br>Autocorrect, Spelling and Grammar Tool, |
| 12 | **Week 6** | Document Dictionary, Page Formatting, Bookmark,<br>Previewing and printing document<br>Advance Features of MS-Word-Mail Merge, Macros,<br>Revision |
| 13 | **Week 6** | Tables, File Management, Printing, Styles, linking and |

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| | | embedding object, Template.<br>Revision |
| **14** | **Week 7** | **Assignment -2**<br>**Test, Group Discussion** |
| **15** | **Week 7** | Electronic Spread Sheet using MS-Excel –<br>Introduction to MS-Excel,<br>Cell, cell address,<br>Creating & Editing Worksheet, |
| **16** | **Week 8** | Formatting and Essential Operations, Moving and copying data in excel. Header and footer , Discussion. |
| **17** | **Week 8** | Formulas and Function**.**<br>Charts, Cell referencing, Page setup, Revision. |
| **18** | **Week 9** | Macros, Advance features of MS-Excel. Revision<br>Pivot table & Pivot Chart, Linking and Consolidation, |
| **19** | **Week 10** | Database Management using Excel-Sorting, Filtering, Validation, What if analysis with Goal Seek, Conditional formatting |
| **20** | **Week 11** | **Test**<br>**Assignment -3**<br>Presentation using MS-PowerPoint: Presentations, Creating, Manipulating & Enhancing Slides, |
| **21** | **Week 12** | Organizational Charts, Excel Charts, Word Art, Layering art Objects, revision. Practice. |
| **22** | **Week 13** | Animations and Sounds, Inserting Animated Pictures or Accessing through Object, |
| **23** | **Week 14** | Inserting Recorded Sound Effect or In-Built Sound Effect.<br>Revision<br>Prepare exam. |
| **24** | **Week 15 & 16** | **Revision** |

## Class : BCA 1st Year(1st sem.)

## Subject Name and Code: Mathematics (BCA-103)

| Week | | Topic/Chapter/Activity |
|---|---|---|
| Week 1 | | Introduction to sets, subsets, equal sets, Universal sets, Finite sets and infinite sets, operation on sets |
| | | Union, Intersection and Complement of sets |
| | | Cartesian products, Cardinality Of Sets, simple application of sets. |
| Week 2 | | Definition, minors, cofactors, Properties of determinants |
| | | Application of determinants |
| | | Solving a system of differential equations |
| Week 3 | | Definition, type of matrices, addition and subtraction, scalar multiplication and multiplication of matrices |
| Week 4 | | Adjoint and inverse of matrix |
| | | Solving of linear equation by cramer's rule |
| | | Properties of relations, equivalence relations |
| | | Partial order relation Function:domain and range, onto, into and one to one function, composite and inverse of function |
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| Week 5 | | Limit of a point, Properties of limit, computations of limits of various types of functions |
| | | Continuity of a function at a point and over an interval |
| | | Sum, product and quotient of a continuous function |

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| Week 6 | Intermediate value theorem, type of discontinuities |
| | Derivative of function, derivative of sum, differences, product and quotient of functions |
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| Week 7 | Derivatives of polynomial, trigonometric, exponential, logarithm |
| Week 8 | Inverse trigonometric and implicit functions, logarithmic differentiation, chain rule and differentiation by substitution |
| Week 9 | Indefinite integral, methods of integration by substitution<br>Integration by parts, partial fraction |
| Week10 | Integration of algebraic transcendental equation<br>Reduction formula for simple and trigonometric function |
| Week 11 | Definite integral as limit of sum<br>Fundamental theorem of integral calculus |
| Week12 | Evaluation of definite integral by substitution,Using properties of definite integrals |

**Class :- BCA 1st Year(1st Sem.)**

**Subject Name and Code :-Logical Organization Of Computer-I (BCA-104)**

| S.No. | Weeks | Topic Covered |
|---|---|---|
| 1 | 1st week | Information Representation |
| 2 | 2nd week | Number Systems, Binary Arithmetic, |
| 3 | 3rd week | Fixed-point and Floating-point representation of numbers, |
| 4 | 4th week | Revision and Doubt Clarification of 1st unit,<br>Class Test of 1st unit |
| 5 | 5th week | BCD Codes, Error detecting and correcting codes, Character Representation – ASCII, EBCDIC, Unicode |
| 6 | 6th week | Binary Logic, Boolean Algebra |
| 7 | 7th week | Boolean Functions and Truth Tables, Canonical and Standard forms of Boolean functions, |
| 8 | 8th week | Simplification of Boolean Functions – Venn Diagram, Karnaugh Maps.<br>Assignment and class test of 2nd Unit |
| 9 | 9th week | Digital Logic: Introduction to digital signals, Basic Gates – AND, OR, NOT, Universal Gates and their implementation |
| 10 | 10th week | NAND, NOR, Other Gates – XOR, XNOR etc. |
| 11 | 11th week | NAND, NOR, AND-OR-INVERT and OR-AND-INVERT implementations of digital circuits, |
| 12 | 12th week | Combinational Logic – Characteristics, Design Procedures, analysis procedures, Multilevel NAND and NOR circuits.<br>Revision and Doubt Clarification of 3rdunit, |

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| | | Assignment and class test of 3rd Unit |
| **13** | **13th week** | Combinational Circuits: Half-Adder, Full-Adder, Half-Subtractor |
| **14** | **14th week** | Full-Subtractor,Parallel binary adder/subtractor<br>Encoders, Decoders |
| **15** | **15th week** | Multiplexers, Demultiplexers, Comparators, Code Converters, BCD to Seven-Segment Decoder. |
| **16** | **16th week** | Revision and Doubt Clarification,<br>Class Test and assignment of Unit 4 |

## Class :- BCA 1st year( 2nd Sem.)

## Subject Name with Code:- 'C' PROGRAMMING (BCA-106)

| Weeks | Topic Covered |
|---|---|
| 1st Week | Overview of C: History of C, Importance of C, Elements of C: C character set, identifiers and keywords |
| 2nd Week | Data types, Constants and Variables,Assignment statement, Symbolic constant, Structure of a C Program, printf(), scanf() Functions |
| 3rd Week | Operators & Expression: Arithmetic, relational, logical, bitwise, unary, assignment, shorthand assignment operators, conditional operators and increment and decrement operators |
| 4th Week | Arithmetic expressions,evaluation of arithmetic expression, type casting and conversion, operator hierarchy &associativity. |
| | Class Test and Assignment |
| 5th Week | Decision making & branching: Decision making with IF statement, IF-ELSE statement |
| 6th Week | Nested IF statement, ELSE-IF ladder, switch statement, goto statement. |
| 7th Week | Decision making & looping: For, while, and do-while loop |
| 8th Week | Jumps in loops, break, continue statement, Nested loops. |
| | Class Test and Assignment |
| 9th Week | Functions: Standard Mathematical functions, Input/output: Unformatted & formatted I/O function in C |
| 10th Week | Input functions viz. getch(), getche(), getchar(), gets(), output functions viz. |
| 11th Week | putch(), putchar(), puts(), string manipulation functions. |
| | User defined functions: Introduction/Definition, prototype |
| 12th Week | Local and global variables, passing parameters, recursion |
| | Class Test and Assignment |
| 13th Week | Arrays, strings and pointers:Definition, types, initialization, processing an array, passing arrays to functions |

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| 14th Week | Array of Strings. String constant and variables, Declaration and initialization of string, Input/output of string data, Introduction to pointers. |
| 15th Week | Storage classes in C: auto, extern, register and static storage class, their scope, storage, & lifetime,Algorithm development. |
| 16th Week | Flowcharting and Development of efficient Program in C. |
| | Class Test and Assignment |

## Class:- BCA 1st year( 2nd Sem.)

## Subject:- Logical Organization of computer –II (BCA-107)

| Weeks | Topic Covered |
|---|---|
| 1st Week | Sequential Logic: Characteristics, Flip-Flops, Clocked RS |
| 2nd Week | D type, JK, T type and Master-Slave flip-flops. |
| 3rd Week | State table, state diagram |
| 4th Week | State equations. Flip-flop excitation tables |
| | Class Test and Assignment |
| 5th Week | Sequential Circuits: Designing registers – Serial Input Serial Output (SISO), Serial Input Parallel Output (SIPO) |
| 6th Week | Parallel Input Serial Output (PISO), Parallel Input Parallel Output(PIPO) and shift registers. |
| 7th Week | Designing counters – Asynchronous and Synchronous Binary Counters |
| 8th Week | Modulo-N Counters and Up-Down Counters |
| | Class Test and Assignment |
| 9th Week | Memory & I/O Devices: Memory Parameters |
| 10th Week | Semiconductor RAM, ROM |
| 11th Week | Magnetic and Optical Storage devices, Flash memory |
| 12th Week | I/O Devices and their controllers |
| | Class Test and Assignment |
| 13th Week | Instruction Design & I/O Organization: Machine instruction |
| 14th Week | Instruction set selection,Instruction cycle, Instruction Format and Addressing Modes |
| 15th Week | I/O Interface, Interrupt structure, Program-controlled, Interrupt-controlled |
| 16th Week | DMA transfer, I/O Channels, IOP. |
| | Class Test and Assignment |

## Class :- BCA 1st year( 2nd Sem.)

## Subject Name and Code:- System Analysis & Design (BCA-109)

| Weeks | Topic Covered |
|---|---|
| 1st Week | Introduction to system, Definition and characteristics of a system, Elements of system, Types of system. |
| 2nd Week | System development life cycle, Role of system analyst, Analyst/user interface, System planning and initial investigation: Introduction, Bases for planning in system analysis. |
| 3rd Week | Sources of project requests, Initial investigation, Fact finding, Information gathering. |
| 4th Week | Information gathering tools, Fact analysis, Determination of feasibility. Class Test and Assignment. |
| 5th Week | Structured analysis, Tools of structured analysis: DFD, Data dictionary, Flow charts, Gantt charts, |
| 6th Week | Decision tree, decision table, structured English, Pros and cons of each tool,Feasibility study: Introduction, Objective, |
| 7th Week | Feasibility Types, Steps in feasibility analysis, Feasibility report, Oral presentation, |
| 8th Week | Cost and benefit analysis: Identification of costs and benefits, classification of costs and benefits, Methods of determining costs and benefits, |
| 9th Week | Interpret results of analysis and take final action. Class Test and Assignment |
| 10th Week | System Design objective, Logical and physical design, Design Methodologies, |
| 11th Week | Structured design, Form-Driven methodology(IPO charts), structured walkthrough, |
| 12th Week | Input/Output and form design: Input design, Objectives of input design, Output design, Objectives of output design, |
| 13th Week | Form design, Classification of forms, requirements of form design, Types of forms, Layout considerations, Form control. Class Test and Assignment |
| 14th Week | System testing: Introduction, Objectives of testing, Test plan, testing techniques/Types of system tests, Quality assurance goals in system life cycle, |
| 15th Week | System implementation, Process of implementation, System evaluation, System maintenance and its types documentation, |
| 16th Week | Forms of documentation. Class Test and Assignment Revision |

**Class :- BCA 2nd year(3rd Sem.)**

**Subject Name and Code :- Operating System(BCA-201)**

| S.No. | Weeks | Topic Covered |
|---|---|---|
| 1 | 1st week | Introduction to Operating System, Need<br>Operating System services , Early systems |
| 2 | 2nd week | Structures - Simple Batch, Multi programmed<br>Timeshared, Personal Computer, Parallel, Distributed<br>Systems, Real-Time Systems |
| 3 | 3rd week | Process Management: Process concept<br>Operation on processes |
| 4 | 4th week | Cooperating Processes,<br>Threads, and Inter-process Communication.<br>Revision and Doubt Clarification of 1st unit,<br>Class Test of 1st unit |
| 5 | 5th week | CPU Scheduling: Basic concepts, Scheduling criteria,<br>Scheduling algorithms<br>FCFS, SJF, Round Robin . |
| 6 | 6th week | Queue Algorithms<br>Deadlocks: Deadlock characterization |
| 7 | 7th week | Methods for handling deadlocks,<br>Banker's Algorithm |
| 8 | 8th week | Revision and Doubt Clarification of 2nd unit,<br>Class Test and assignment of 2nd unit |
| 9 | 9th week | Memory Management Logical versus Physical address<br>space, Swapping |
| 10 | 10th week | Contiguous allocation, Paging, Segmentation |
| 11 | 11th week | Virtual Memory: Demand paging, Performance of demand<br>paging |
| 12 | 12th week | Page replacement, Page replacement algorithms, Thrashing.<br>Revision and Doubt Clarification of 3rd unit,<br>Assignment and class test of 3rd Unit |
| 13 | 13th week | File management : File system Structure<br>Allocation methods: Contiguous allocation, Linked allocation |
| 14 | 14th week | Indexed allocation, Free space management: Bit vector,<br>Linked list, Grouping, Counting. |
| 15 | 15th week | Device Management: Disk structure, SCAN, C-SCAN, LOOK,<br>C-LOOK |
| 16 | 16th week | Revision and Doubt Clarification,<br>Class Test and assignment of Unit 4 |

**Class : BCA 2nd Year ( 3rd Sem.)**

**Subject Name and Code: Data structures -I (BCA 202)**

| S. No. | WEEKS | Topic Covered |
|---|---|---|
| 1 | Week 1 | Introduction to data structures, and Element data organization. Data types vs. data structures , categories of data structures, operation of data structures, application of data structures, introduction to algorithm and it's complexity ( time and space trade off), Big O notation |
| 2 | Week 2 | String introduction, storing string operations with example, pattern matching algorithm. Doubt class and assignment |
| 3 | Week 3 | Arrays introduction and it's representation in memory, address calculation, Traversal, insertion, and deletion in arrays, multidimensional arrays, parallel arrays, sparse arrays, Doubt class |
| 4 | Week 4 | Introduction to linked list, representation of linked list in memory, traversal of linked list. Insertion and deletion of linked list |
| 5 | Week 5 | Searching in linked list, and header inked list, Circular, two – way, threaded linked list, garbage collection, applications of linked list, Doubt class and assignment |
| 6 | Week 6 | Stack introduction, array and linked representation of stack, operation on stack (push pop and display) with algorithmic notation and program, Application of stack, polish notation and recursion with algorithmic notation and example program. |
| 7 | Week 7 | Queue introduction, array and linked representation of queue Operation on queue ( insertion, deletion and display) with algorithmic notation and example program, Application of queue, Dequeue, Priority queue,Doubt class |
| 8 | Week 8 | Tree introduction, definition, and types, Introduction to binary tree, Representation of binary tree in memory |

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| 9 | Week 9 | Traversing binary tree and traversal algorithm using stack, |
| 10 | Week 10 | Graph introduction, theory of graph, terminology of graphs. |
| 11 | Week 11 | Types and their traversal |
| 12 | Week 12 | Sequential representation of graph with example |
| 13 | Week 13 | Linked representation of graph with example |
| 14 | Week 14 | Doubt class |
| 15 | Week 15 & 16 | Revision and doubts |

## Class : BCA 2nd Year (3rd Sem.)

## Subject Name and code : Introduction To Database System (BCA-203)

| S.No. | Week | Topics |
|---|---|---|
| | | **UNIT 1** |
| 1 | Week - 1 | Basic Concepts – Data, Information, Records and files. Traditional file – based Systems-File Based Approach-Limitations of File Based Approach. |
| 2 | Week - 2 | Database Approach-Characteristics of Database Approach, advantages and disadvantages of database system, components of database system, Database Management System (DBMS), Components of DBMS Environment. |
| 3 | Week - 3 | DBMS Functions and Components, DBMS users, Advantages and Disadvantages of DBMS, DBMS languages. |
| 4 | Week - 4 | Roles in the Database Environment - Data and Database Administrator, Database Designers, Applications Developers and Users. |
| | | **UNIT 2** |
| 5 | Week - 5 | Database System Architecture – Three Levels of Architecture, External, Conceptual and Internal Levels, Schemas, Mappings and Instances. |
| 6 | Week - 6 | Data Independence – Logical and Physical Data Independence. |
| 7 | Week - 7 | Classification of Database Management System, Centralized and Client Server architecture to DBMS. |
| 8 | Week - 8 | Data Models: Records- based Data Models, Object-based Data Models, Physical Data Models and Conceptual Modeling. |
| | | **UNIT 3** |
| 9 | Week - 9 | Entity-Relationship Model – Entity Types, Entity Sets, Attributes Relationship Types, Relationship Instances and ER Diagrams. |
| 10 | Week - 10 | Abstraction and integration. Basic Concepts of Hierarchical and Network Data Model, Relational Data Model:-Brief History, Relational Model. |
| 11 | Week - 11 | Terminology-Relational Data Structure, Database Relations, Properties of Relations, Keys. |
| 12 | Week -12 | Domains, Integrity Constraints over Relations. |
| | | **UNIT 4** |
| 13 | Week - 13 | Relational algebra, Relational calculus, Relational database design: Functional dependencies, Modification anomalies. |
| 14 | Week - 14 | Ist to 3rd NFs, BCNF, 4th and 5th NFs, computing closures of set FDs. |
| 15 | Week - 15 | SQL Data types, Basic Queries in SQL, Insert, Delete and Update Statements, Views. |
| 16 | Week - 16 | Query processing: General strategies of query processing, query optimization, query processor, concept of security, concurrency and recovery. |

# Class : BCA 2nd Year(4th Semester)

# Subject Name and Code :Web Designing (BCA-206)

**Week 1 to 4**

I Introduction to Internet and World Wide Web, Evolution and History of World Wide Web, Basic features.
Web Browsers, Web Servers, Search Engines and Search Tools.
Searching and Web-Casting Techniques, Hypertext Transfer Protocol.
URL, TCP/IP and its services.
Test and Assignment for Unit-I

**Week 5 to 8**

II Web Publishing: Hosting your Site, Internet Service Provider, Web terminologies, Phases of Planning and designing your Web Site.
Steps for developing your Site, Choosing then contents, Home Page.
Domain Names, Front page views, adding pictures, Links, Backgrounds, Relating Front Page to DHTML.
Website and the Mark-up Languages (HTML, DHTML).
Test and Assignment for Unit-II

**Week 9 to 12**

III Web Development: Introduction to HTML, Hypertext and HTML.
HTML Document Features, HTML command Tags.
Text styles, Text Structuring, Text colours and Background, Formatting text.
Creating Links, Headers, Page layout.
Test and Assignment for Unit-III

IV Images, Ordered and Unordered lists, Inserting Graphics, Table Creation and Layouts, Frame Creation and Layouts.
Working with Forms and Menus, Working with Radio Buttons, Check Boxes, Text Boxes.
DHTML: Dynamic HTML, Features of DHTML, CSSP (cascading style sheet positioning) and JSSS (JavaScript assisted style sheet).
Layers of Netscape, The ID attributes, DHTML events.
Test and Assignment for Unit-IV

**Week 13 to 16**

Revision of Full Syllabus: Written Test or Oral Presentation.

**Class: BCA 2nd Year( 4th Sem)**

**Subject Name and code: Data Structure( BCA-207)**

| Week | Unit | Topic Name |
|---|---|---|
| 1 to 4 | I | Tree: Header nodes, Threads, Binary search trees, Searching, |
| | | Insertion and deletion in a Binary search tree, AVL search trees, Insertion and deletion in AVL search tree, |
| | | m-way search tree, Searching, Insertion and deletion in an m-way search tree, B-trees, Searching, |
| | | Insertion and deletion in a B-tree<br>Test and Assignment for Unit I |
| 5 to 8 | III | B+tree, Huffman's algorithm, General trees. |
| | | Graphs: Warshall's algorithm for shortest path, |
| | | Dijkstra algorithm for shortest path, Operations on graphs |
| | | Traversal of graph, Topological sorting.<br>Test and Assignment for Unit I,II |
| 9 to 12 | IV | Sorting: Internal & external sorting, Radix sort, |
| | | Quick sort, Heap sort, |
| | | Merge sort,Tournament sort, Comparison of various sorting and searching algorithms on the basis of their complexity. |
| | | Searching: Liner search, binary search, merging,<br>Test and Assignment for Unit III |
| | | Files: Physical storage devices and their characteristics, |

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| 13 to 16 | II | Attributes of a file viz fields, records,Fixed and variable length records |
| | | Primiry and secondary keys, Classification of files, File operations, Comparison of various types of files, |
| | | File organization: Serial, Sequential,Indexed-sequential, Random-access/Direct, Inverted, Multilist file organization |
| | | Hashing: Introduction, Hashing functions and Collision resolution methods.<br>Test and Assignment for Unit IV |

## BCA 2nd year (4th Semester)

## Subject :Object Oriented Programming Using C++(BCA-208)

| S.No. | Week | Topics |
|---|---|---|
| **UNIT 1** | | |
| 1 | Week - 1 | Object Oriented ProgrammingConcepts :Procedural Language and Object Oriented approach, Characteristics of OOP. |
| 2 | Week - 2 | User defined types, polymorphism and encapsulation. |
| 3 | Week - 3 | Getting started with C++: syntax, data types, variables, string, function, namespace and exception. |
| 4 | Week - 4 | Operators, flow control, recursion, array and pointer, structure . |
| **UNIT 2** | | |
| 5 | Week -5 | Abstracting Mechanism :Classes, private and public, Constructor and Destructor. |
| 6 | Week - 6 | Member function, static members, references. |
| 7 | Week -7 | Memory Management :new, delete, object copying, copy constructer. |
| 8 | Week - 8 | Assignment operator, this input/output |
| **UNIT 3** | | |
| 9 | Week - 9 | Inheritance and Polymorphism: Derived Class and Base Class, Inheritance types. |
| 10 | Week - 10 | Overriding member function, Abstract Class. |
| 11 | Week -11 | Public and Private Inheritance, Ambiguity in Multiple inheritance , |
| 12 | Week -12 | Virtual function, Friend function, Static function. |
| **UNIT 4** | | |
| 13 | Week -13 | Exception Handling: Exception and derived class, function exception declaration, unexpected exception. |
| 14 | Week - 14 | Exception when handling exception, resource capture and release. |
| 15 | Week - 15 | Template and Standard Template Library: Template classes, declaration. |
| 16 | Week - 16 | Template functions, namespace, string, iterators, hashes, iostreams and types. |

## Class & Section:- BCA 2nd year( 4th Sem.)

## Subject Name and code :- Software Engineering(BCA-209)

| Weeks | Topic Covered |
|---|---|
| 1st Week | Introduction: Software Crisis, Software Processes & Characteristics, Software life cycle models, Waterfall, Prototype, Evolutionary and Spiral Models. |
| 2nd Week | Software Requirements Analysis & Specifications: Requirement engineering, requirement elicitation techniques like FAST, QFD. |
| 3rd Week | Requirements analysis using DFD, Data dictionaries& ER Diagrams. |
| 4th Week | Requirements documentation, Nature of SRS, Characteristics & organization of SRS. Class Test and Assignment |
| 5th Week | Software Project Management Concepts: The Management spectrum, The People, The Problem, The Process,The Project. |
| 6th Week | Software Project Planning: Size Estimation like lines of Code & Function Count, |
| 7th Week | Cost Estimation Models, COCOMO, Risk Management. Class Test and Assignment |
| 8th Week | Software Design: Cohesion & Coupling, Classification of Cohesiveness & Coupling, Function Oriented Design, Object Oriented Design, |
| 9th Week | Software Metrics: Software measurements: What & Why, Token Count, Halstead Software Theory. |
| 10th Week | Software Metrics Science Measures, Design Metrics, Data Structure Metrics. |
| 11th Week | Software Implementation: Relationship between design and implementation, Implementation issues . |
| 12th Week | Programming support environment, Coding the procedural design, Good coding style. Class Test and Assignment. |
| 13th Week | Software Testing: Testing Process, Design of Test Cases, Types of Testing, Functional Testing, Structural Testing. |
| 14th Week | Test Activities, Unit Testing, Integration Testing and SystemTesting, DebuggingActivities. |
| 15th Week | Software Maintenance: Management of Maintenance, Maintenance Process, Reverse Engineering. |
| 16th Week | Software Re-engineering, Configuration Management, Documentation. Class Test and Assignment. |

## Class : BCA 3rd Year(5th Sem.)

## Subject :- Management Information System (BCA-301)

| S.No. | Weeks | Topics Covered |
|---|---|---|
| 1 | Week 1 | Introduction to system and Basic System Concepts, Types of Systems,<br>The Systems Approach<br>Revision |
| 2 | Week 2 | Information System: Definition & Characteristics, Types of information,<br>Role of Information in Decision-Making<br>Sub-Systems of an Information system |
| 3 | Week 3 | EDP , MIS management levels, EDP/MIS/DSS.<br>Revision |
| 4 | Week 4 | An overview of Management Information System: Definition,<br>Characteristics, Components of MIS<br>Revision<br>Assignment-1 |
| 5 | Week 5 | Frame Work for Understanding MIS: Information requirements .<br>Levels of Management<br>Revision |
| 6 | Week 6 | Simon's Model of decision- Making<br>Revision |
| 7 | Week 7 | Structured Vs Un-structured decisions<br>Revision |
| 8 | Week 8 | Formal vs. Informal systems<br>Assignment-2<br>Test |
| 9 | Week 9 | Developing Information Systems: Analysis |

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| | | Design of Information Systems: Implementation<br>Revision |
| **10** | **Week 10** | Design of Information Systems: Evaluation<br>Pitfalls in MIS Development |
| **11** | **Week 11** | Introduction to e-business systems<br>Applications, EDP |
| **12** | **Week 12** | ecommerce – technologies, applications , MIS<br>Assignment-3<br>Test |
| **13** | **Week 13** | Functional MIS: A Study of Personnel |
| **14** | **Week 14** | Functional MIS: A Study of Financial |
| **15** | **Week 15** | Functional MIS: A Study of production MIS |
| **16** | **Week 16** | Decision support - systems for planning, control and decision<br>Assignment-4<br>Test |

**Class : BCA 3rd Year (5th Sem.)**

**Subject Name and Code : Computer Graphics (BCA-302)**

| Week | Unit | Topic Name |
|---|---|---|
| 1 to 4 | I | Graphics Primitives: Introduction to computer graphics, Basics of Graphics systems, Application areas of Computer Graphics, overview of graphics systems. |
| | | Video-display devices, and raster-scan systems, random scan systems, graphics monitors and workstations and input devices. |
| | | Output Primitives: Points and lines, line drawing algorithms, mid-point circle and ellipse algorithms. |
| | | Filled area primitives: Scan line polygon fill algorithm, boundary fill and flood-fill algorithms. |
| | | Test and Assignment for Unit-I |
| 5 to 8 | II & IV | 2-D Geometrical Transforms: Translation, scaling, rotation, reflection and shear transformations. |
| | | Matrix representations and homogeneous coordinates, composite transform transformations between coordinate systems. |
| | | 3-D Geometric Transformations: Translation, rotation, scaling, reflection and shear transformations. |
| | | Composite transformations.<br>Test and Assignment for Unit-II & IV |
| | II & | 2-D Viewing: The viewing pipeline, viewing coordinate reference frame, window to view-port coordinate transformation, viewing functions. |
| | | Cohen-Sutherland and Cyrus-beck line clipping algorithms, Sutherland —Hodgeman polygon clipping algorithm. |

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|---|---|---|
| 9 to 13 | IV | 3-D Viewing: Viewing pipeline. Viewing coordinates, view volume and general projection transforms and clipping. |
| | | Test and Assignment for Unit-II & IV |
| 14 to 16 | III | 3-D Object Representation: Polygon surfaces, quadric surfaces, spline representation. |
| | | Hermite curve, Bezier curve and B-Spline curves, Bezier and B-Spline surfaces |
| | | Basic illumination models, polygon-rendering methods. |
| | | Test and Assignment for Unit-III<br>Revision of Full Syllabus: Offline/Online Test or Oral Presentation. |

**Class : BCA 3rd Year(5th Sem.)**

**Subject Name and Code : Data Communication and Networking (BCA-303)**

| Weeks | Unit | Topic Name |
|---|---|---|
| 1 to 4 | I | Introduction to Computer Communications and Networking Technologies, Uses of Computer Networks, Network Devices, Nodes, and Hosts, Types of Computer Networks and their Topologies, Network Software: Network Design issues and Protocols, Connection-Oriented and Connectionless Services. |
| | | Network Applications and Application, Protocols, Computer Communications and Networking Models: Decentralized and Centralized Systems, Distributed System. |
| | | Client/Server Model, Peer-to-Peer Model, Web-Based Model, Network Architecture, OSI Reference Model, TCP/IP reference model, Example Networks: The Internet, X.25, Frame Relay, ATM. |
| | | **Unit test and assignment for Unit I** |
| 5 to 8 | II | Analog and Digital Communications Concepts: Concept of data, signal, channel, bid-rate ,maximum data-rate of channel |
| | | Representing Data as Analog Signals, Representing Data as Digital Signals, Data Rate and Bandwidth, Capacity, Baud Rate, Asynchronous and synchronous transmission. |
| | | Wireless Transmission Media, Communication Satellites, Switching And Multiplexing, Dialup Networking, Analog Modem Concepts, DSL Service. |
| | | **Test for Unit I and II along with assignment** |
| 9 to 13 | III | Data Link Layer: Framing, Flow Control, Error Control, Error Detection and Correction , Sliding Window Protocols, Media Access Control: Random Access Protocols, Token Passing Protocols, Token Ring |
| | | Introduction to LAN technologies: Ethernet, switched Ethernet, VLAN, fast Ethernet, gigabit Ethernet, token ring, FDDI, Wireless LANs |
| | | Bluetooth, Network Hardware Components: Connectors, Transceivers, Repeaters, Hubs, Network , Interface Cards and |

| | | |
|---|---|---|
| | | PC Cards, Bridges, Switches, Routers, Gateways. |
| | | **Test and assignment for Unit III** |
| 13 to 16 | IV | Network Layer and Routing Concepts: Virtual Circuits and Datagrams, Routing Algorithms: Flooding |
| | | Shortest Path Routing, Distance Vector Routing; Link State Routing, Hierarchical, Routing, Congestion Control Algorithms |
| | | Internetworking, Network Security Issues: Security threats; Encryption Methods, Authentication, Symmetric – Key Algorithms; Public-Key Algorithms. |
| | | **Revision – oral, written tests and presentations.** |

**Class:-BCA 3rd year (5th Sem.)**

**Subject Name and Code :- VISUAL BASIC (BCA-304)**

| S. No. | Week | Topic Covered |
|---|---|---|
| 1 | Ist | Introduction to VB, visual & non visual, procedural, object oriented& event driven programming. |
| 2 | 2nd | VB Environment & components & form designing with properties. |
| 3 | 3rd | Sample program & event driven program with visual development, Doubt class and assignment |
| 4 | 4th | Variable &it's declaration &types of variables, Converting variables types, User-defined data types. |
| 5 | 5th | Forcing variable declaration, Scope & lifetime of variables. Constants: Named & intrinsic. Operators: Arithmetic, Relational & Logical operators. |
| 6 | 6th | I/O in VB: Various controls for I/O in VB, Message box, Input Box, Print statement |
| 7 | 7th | Programming with VB: Decisions and conditions: If statement, If-then-else, Select-case. |
| 8 | 8th | Looping statements: Do-loops, For-next, While-wend, Exit statement |
| 9 | 9th | Nested control structures. Arrays: Declaring and using arrays, one-dimensional and multi-dimensional arrays |
| 10 | 10th | Static & dynamic arrays, Arrays of array. Collections: Adding, Removing, Counting, Returning items in a collection |
| 11 | 11th | Processing a collection, Programming with VB: Procedures: General & event procedures, Subroutines |
| 12 | 12th | Functions, Calling procedures, Arguments- passing mechanisms, Doubt class and assignment |
| 13 | 13th | Optional arguments, Named arguments, Functions returning custom data types, Functions returning arrays |
| 14 | 14th | Working with forms and menus : Adding multiple forms in VB, Hiding & showing forms, Load & unload statements. |
| 15 | 15th | creating menu, submenu, popup menus, Activate & deactivate events, Form-load event |
| 16 | 16th | menu designing in VB Simple programs in VB, Doubt class and test |

**Class:- BCA-3rd year( 6th Sem.)**

**Subject Name and Code :- E-Commerce (Paper-306 )**

| **Weeks** | **Topic Covered** |
|---|---|
| 1st Week | Electronic Commerce: Overview of Electronic Commerce, Scope of Electronic Commerce, Traditional Commerce vs. Electronic Commerce, Impact of E-Commerce |
| 2nd Week | Electronic Markets, Internet Commerce, e-commerce in perspective, Application of E Commerce in Direct Marketing and Selling |
| 3rd Week | Obstacles in adopting E-Commerce Applications; Future of E-Commerce.<br><br>Class Test and Assignment |
| 4th Week | Value Chains in electronic Commerce, Supply chain, Porter's value chain Model |
| 5th Week | Inter Organizational value chains, Strategic Business unit chains, Industry value chains. |
| 6th Week | Security Threats to E-commerce: Security Overview, Computer Security Classification |
| 7th Week | Copyright and Intellectual Property, security Policy and Integrated Security, Intellectual Property Threats<br><br>Class Test and Assignment |
| 8th Week | Electronic Commerce Threats, Clients Threats, Communication Channel Threats, server Threats. |
| 9th Week | Implementing security for E-Commerce: Protecting E-Commerce Assets, Protecting Intellectual Property |
| 10th Week | Protecting Client Computers, Protecting E-commerce Channels, Insuring Transaction Integrity, Protecting the Commerce Server. |

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|---|---|
| 11th Week | Electronic Payment System: Electronic Cash, Electronic Wallets, Smart Card, Credit and Change Card. |
| 12th Week | Business to Business E-Commerce: Inter-organizational Transitions, Credit Transaction Trade Cycle |
| 13th Week | A variety of transactions. Electronic Data Interchange (EDI): Introduction to EDI |
| 14th Week | Benefits of EDI, EDI Technology, EDI standards, EDI Communication |
| 15th Week | EDI Implementation, EDI agreement, EDI security.<br>Class Test and Assignment |

## Class:- BCA 3rd Year( 6th Sem.)

## Subject Name and Code :- Object Technologies & Programming using Java(BCA – 307)

| Weeks | Topic Covered |
|---|---|
| 1st Week | Object Oriented Methodology-1: Paradigms of Programming Languages, Evolution of OO Methodology, Basic Concepts of OO Approach |
| 2nd Week | Comparison of Object Oriented and Procedure Oriented Approaches, Benefits of OOPs, Introduction to Common OO Language. |
| 3rd Week | Applications of OOPs , Object Oriented Methodology-2: Classes and Objects, Abstraction. |
| 4th Week | Encapsulation, Inheritance, Method Overriding and Polymorphism, Class Test and Assignment |
| 5th Week | Java Language Basics: Introduction To Java, Basic Features, Java Virtual Machine, Concepts, Primitive Data Type And Variables. |
| 6th Week | Java Operators, Expressions, Statements and Arrays. Object Oriented Concepts: Class and Objects-- Class Fundamentals, Creating objects ,Assigning object reference variables; Introducing Methods |
| 7th Week | Static methods, Constructors , Overloading constructors; This Keyword; Using Objects as Parameters, Argument passing, Returning objects , Method overloading, Garbage Collection, The Finalize ( ) Method. |
| 8th Week | Inheritance and Polymorphism: Inheritance Basics, Access Control, Multilevel Inheritance Method Overriding, Abstract Classes, Polymorphism, Final Keyword. Class Test and Assignment |
| 9th Week | Packages : Defining Package, CLASSPATH, Package naming, Accessibility of Packages , using Package Members. |
| 10th Week | Interfaces: Implementing Interfaces, Interface and Abstract Classes, Extends and Implements together |
| 11th Week | Exceptions Handling : Exception , Handling of Exception, Using try-catch , Catching Multiple Exceptions |

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| 12th Week | Using finally clause, Types of Exceptions, Throwing Exceptions, Writing Exception Subclasses. |
| | Class Test and Assignment |
| 13th Week | Multithreading : Introduction , The Main Thread, Java Thread Model, Thread Priorities, Synchronization in Java |
| 14th Week | Inter thread Communication. I/O in Java : I/O Basics, Streams and Stream Classes ,The Predefined Streams, Reading from, and Writing to, Console, Reading and Writing Files |
| 15th Week | The Transient and Volatile Modifiers , Using Instance of Native Methods Strings and Characters : Fundamentals of Characters and Strings |
| 16th Week | The String Class, String Operations , Data Conversion using Value Of ( ) Methods , String Buffer Class and Methods. |
| | Class Test and Assignment |

**Class : BCA 3rd Year (6th Sem.)**

**Subject Name and Code: Artificial Intelligence (BCA-308)**

| Week | Unit | Topic Name |
|---|---|---|
| 1 to 5 | I | Overview of A.I: Introduction to AI, Importance of AI, AI and its related field, AI techniques, Criteria for success. |
| | | Problems, problem space and search: Defining the problem as a state space search. |
| | | Production system and its characteristics, Issues in the design of the search problem. |
| | | Heuristic search techniques: Generate and test, hill climbing, best first search technique. |
| | | Problem reduction, constraint satisfaction.<br>Test and Assignment for Unit-I |
| 6 to 9 | II | Knowledge Representation: Definition and importance of knowledge, Knowledge representation. |
| | | Various approaches used in knowledge representation. |
| | | Issues in knowledge representation.<br>Using Predicate Logic: Represent ting Simple Facts in logic. |
| | | Representing instances and is_a relationship, Computable function and predicate.<br>Test and Assignment for Unit-II |
| | | Natural language processing: Introduction syntactic processing, Semantic processing. |
| | | Discourse and pragmatic processing. |

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| 10 to 13 | III | Learning: Introduction learning. |
| | | Learning by taking advice, learning in problem solving. |
| | | Learning from example-induction, Explanation based learning.<br>Test and Assignment for Unit-III |
| 14 to 16 | IV | Expert System: Introduction. |
| | | Representing using domain specific knowledge. |
| | | Expert system shells.<br>Test and Assignment for Unit-IV<br>Revision of Full Syllabus: Written Test or Oral Presentation. |

## Class : BCA 3rd Year(6th Sem.)

## Subject Name and Code: Introduction to .Net (BCA-309)

| Weeks | Unit | Topic Name |
|---|---|---|
| **1 to 4** | **I** | The Framework of .Net: Building blocks of .Net Platform (the CLR, CTS and CLS). Features of .Net, Deploying the .Net Runtime, Architecture of .Net platform. Introduction to namespaces & type distinction. Types & Object in .Net, the evolution of Web development. |
| **5 to 8** | **II** | Class Libraries in .Net, Introduction to Assemblies & Manifest in .Net, Metadata, Attributes. Introduction to C#: Characteristics of C#, Data types: Value types. Reference types, default value, constants. Variables, scope of variables, boxing and unboxing. Test for Unit I and II along with assignment |
| **9 to 12** | **III** | Operators and expressions: Arithmetic, relational, logical, bitwise, special operators, evolution of expressions, operator precedence & associativity Control constructs in C#: Decision making, loops. Classes & methods: Class, methods, constructors, destructors. Overloading of operators & functions. Test and assignment for Unit III |
| **13 to 16** | **IV** | Inheritance & polymorphism: visibility control, overriding, abstract class & methods, Sealed classes & methods, Interfaces. Advanced features of C#: Exception handling & error handling, automatic memory management, Input and output (Directories, Files, and streams). Test for All Units in brief. Revision with Written Test or Oral Presentation. |

## Class: BSc Ist Year (1st Sem)
## Subject: Computer Fundamentals & MS-Office( Code :1.1) 3 days in a week

| Week | Unit | Topic Name |
|---|---|---|
| 1 to 4 | I | Historical evolution of computers, Classification of computers, Block Diagram along its components and characteristics, |
| | | Usefulness of Computers. Human being Vs computer, Computer as a tool, Applications of computers. |
| | | Number Systems: Definition of Number system,necessity of binary number system, binary, decimal , octal and hexadecimal number system, |
| | | Interconversion of numbers, Representation of integers, fixed and floating points, BCD codes, Error detecting and correcting codes, character Representation-ASCII, EBCDIC, Binary arithmetic. |
| 5 to 8 | II | Input/Output Devices: Keyboards, mouse, joysticks, trackballs, digitizer, voice-recognition,optical-recognition, scanners, terminals, point-of-sale terminals, machine-vision systems |
| | | Hard-copy devices: Impact printers - DMPs, Daisy-wheel printers, Line-printers. Non-impact printers - Inkjet,Laser, Thermal, |
| | | LED; Plotters. Soft-copy devices: Monitors, video-standards (VGA and SVGA).Memory & Mass Storage Devices: Characteristics of memory systems, types of memory, RAM,ROM, |
| | | magnetic disks - floppy disk, hard-disk; optical disks - CD, CD-I, CD-ROM; Magnetic tapes;Concepts of Virtual and Cache memory |
| 9 to 12 | III | Software Concepts: Introduction, types of software - System & Application software; Language translators - Compiler, Interpreter, Assembler; Operating system - Characteristics, bootstrapping, types of operating, |
| | | operating system as a resource manager; BIOS; System utilities - Editor, Loader, Linker |
| | | File Manager. Concept of GUI, GUI standards. |
| | | Introduction to Algorithm & Flowcharts, Advantages & Disadvantages. |
| 13 to 16 | IV | MS-OFFICE:MS-Word :- Creating a document, font operation, bullet and numbering, find & replace, hyper linking, mathematical operation, |
| | | Create table and flow chart, Macro, Mail merge, Correcting grammar, protect files, difference between doc and docx. |
| | | MS-PowerPoint :- Creating single and multiple slide, Animation, manual and automatic slide show, hyper linking, DFD, shape and style. |
| | | MS-Excel:- Create sheet and rename sheet, table and operation, cells operation, hyper linking, Function(mathematic, logical), sort and data tools, protection(sheet, workbook). |

## Class: BSc 1st Year (1st Sem.)

### Subject :Computer Architecture (Code :1.2) 3 days in a week

| Week | Unit | Topic Name |
|---|---|---|
| 1 to 4 | I | Basic building blocks and Circuit Design: OR, AND , NOT, XOR Gates |
| | | De Morgan's theorem, laws,theorem of Boolean algebra |
| | | Simplifying logic circuits—sum of product and product of sum form, |
| | | algebraic simplification, Karnaugh simplification |
| 5 to 8 | II | Arithmetic Circuits: Adder, Subtractor, parallel Binary-adder/Subtractor, |
| | | Binary Multiplier and Divider. |
| | | Combinational Circuits: Decoders and Encoder |
| | | Multiplexer and De-multiplexer circuits:Multiplexer and De-multiplexer circuits, Design of code Converters. |
| 9 to 12 | III | Sequential Circuits: Flip-flop-S-R, D, J-K, T |
| | | Clocked Flip-flop, Race Around condition, Master-Slave Flip-Flop, |
| | | Realization of One Flip-Flop using other Flip-Flop, Shift-Registers, Counters-Ripple |
| | | Modular Synchronous, Ring & Twisted-Ring Counter |
| 13 to 16 | IV | Register transfer and Micro-operations: Register transfer Language, Bus and Memory Transfer, |
| | | Arithmetic, Logic Micro-operations, Shift Micro-operations |
| | | Basic computer organization and Design: Instruction and instructions codes, computer instructions, timing and control |
| | | instruction cycle, memory references instructions, input- output reference, instructions and interrupts; |

**Class : BSc 1st Year( 2nd Sem.)**

**Subject: Computer Programming in C (Code :2.1) 3 days in a week**

| Week | Unit | Topic Name |
|---|---|---|
| 1 to 4 | I | Basic concepts of programming, techniques of problem solving, algorithm designing and flowcharting, |
| | | concept of structured programming-Top-Down design, Development of efficient program; Program correctness; |
| | | Debugging and testing of programs, Algorithm for searching, |
| | | Sorting(Insertion, Exchange), Merging of Order-List.<br>Test and Assignment of Unit I |
| 5 to 8 | III | Overview of C: History of C, Importance of C, Structure of a C Program Elements of C: C character set, identifiers and keywords, |
| | | Data types: declaration and definition. Operators: Arithmetic, relational, logical, bitwise, |
| | | unary, assignment and conditional operators and their hierarchy & associativity, input/output statements, Arithmetic Expression |
| | | Evaluation of Arithmetic Expression, Type-casting and Conversion.<br>Test and Assignment of Unit-II |
| 9 to 12 | IV | Decision making & branching: Decision making with if statement, if-else statement, nested if, else-if ladder, |
| | | switch statement, goto statement. Decision making & looping: for, |
| | | while, and do-while loop; Jumps in loop, break, continue. |
| | | Functions: Definition, prototype, passing parameters, Recursion.<br>Test and Assignment of Unit-III |

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|---|---|---|
| 13 to 16 | II | Pointers: Declaration, operations on pointers, array of pointers, pointers to arrays. |
| | | Data Structures: Arrays: One Dimensional, Multidimensional, Pointers and arrays. |
| | | Strings: String Constants, Input & Output, String Functions. Structure & Unions. |
| | | File Handling: Standard I/O text File, Writing to File, Reading a File.<br><br>Test and Assignment of Unit-IV |

## Class :- B.Sc. 1st year( 2nd Sem.)

### Subject:- Structured Systems Analysis and Design (Paper 2.2) 3 days in a week

| Weeks | Topic Covered |
|---|---|
| 1st Week | Introduction to system, Definition and characteristics of a system, Elements of system, Types of system |
| 2nd Week | System development life cycle, Role of system analyst, Analyst/user interface |
| 3rd Week | System planning and initial investigation: Introduction, Bases for planning in system analysis, Sources of project requests |
| 4th Week | Initial investigation, Fact finding, Information gathering, information gathering tools. Class Test and Assignment |
| 5th Week | Structured analysis, Tools of structured analysis: DFD, Data dictionary, Flow charts, Gantt charts |
| 6th Week | Decision tree, decision table, structured English, Pros and cons of each tool, Feasibility study: Introduction, Objective, Types, Steps in feasibility analysis |
| 7th Week | Feasibility report, Oral presentation, Cost and benefit analysis: Identification of costs and benefits, classification of costs and benefits |
| 8th Week | Methods of determining costs and benefits, Interpret results of analysis and take final action. Class Test and Assignment |
| 9th Week | System Design: System design objective, Logical and physical design, Design Methodologies, structured Design |
| 10th Week | Form-Driven methodology (IPO charts), structured walkthrough |
| 11th Week | Input/Output and form design:Input design, Objectives of input design, Output design, Objectives of output design, Form design |
| 12th Week | Classification of forms, requirements of form design, Types of forms, Layout considerations, Form Control, Class Test and Assignment |
| 13th Week | System testing: Introduction, Objectives of testing, Test plan, testing techniques types |
| 14th Week | Quality assurance goals in system life cycle, System implementation, Process of implementation |
| 15th Week | System evaluation, System maintenance and its types |
| 16th Week | System documentation, Forms of documentation.Class Test and Assignment |

**Class : BSC 2nd Year(3rd Sem.)**

**Subject and Code :Data Communication and Networking(Paper :3.1)**
**3 days in a week**

| S.No. | Week | Topics |
|---|---|---|
| | | **UNIT 1** |
| **1** | **Week - 1** | Introduction to Computer Communications and Networking Technologies. |
| **2** | **Week - 2** | Uses of Computer Networks, Network Devices, Nodes, and Hosts. |
| **3** | **Week - 3** | Types of Computer Networks and their Topologies. |
| **4** | **Week - 4** | NetworkArchitecture and the OSI Reference Model, TCP/IP reference model. |
| | | **UNIT 2** |
| **5** | **Week - 5** | Analog and Digital Communications: Concept of data, signal, channel, bid-rate , maximum data-rate of channel. |
| **6** | **Week - 6** | Representing Data as Analog Signals, Representing Data as Digital Signals, Data Rate and Bandwidth. |
| **7** | **Week - 7** | Capacity, Baud Rate; Asynchronous and synchronous transmission, data encodingtechniques, Modulation techniques. |
| **8** | **Week - 8** | Digital Carrier Systems; Guided and Wireless Transmission Media;Communication Satellites; Switching and Multiplexing; Dialup Networking; Analog Modem Concepts. |
| | | **UNIT 3** |
| **9** | **Week - 9** | Data Link Layer: Framing, Flow Control, Error Control; Error Detection and Correction. |
| **10** | **Week - 10** | Media AccessControl: Random Access Protocols, Token Passing Protocols; Token Ring; Introduction to Ethernet. |
| **11** | **Week - 11** | FDDI, Wireless LANs. Network Layer and Routing Concepts: |

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|---|---|---|
| | | Virtual Circuits and Datagram's. |
| **12** | **Week -12** | RoutingAlgorithms: Flooding, Shortest Path Routing, Distance Vector Routing; Internetworking. |
| **UNIT4** | | |
| **13** | **Week - 13** | Transport layer: Elements of Transport protocol: Addressing, Connection Establishment. |
| **14** | **Week - 14** | Flow Control,Buffering, Crash recovery. Internet Transport protocol: UDP: Introduction. |
| **15** | **Week - 15** | Real time Transportprotocol, Remote Procedure Call. |
| **16** | **Week - 16** | Application Layer: Domain Name System, Electronic Mail, WorldWide Web. |

**Class : BSC 2nd Year (3rd Sem.)**

**Subject :Object-Oriented Design and C++(Paper :3.2) 3 days in a week**

| S.No. | Week | Topics |
|---|---|---|
| **UNIT 1** | | |
| **1** | **Week - 1** | Object oriented concepts: Class, Object, Methods, Message Passing, Abstraction, Inheritance |
| **2** | **Week - 2** | Polymorphism, Generosity, Overriding, Abstract Class & methods. Generalization, Aggregation. |
| **3** | **Week - 3** | Associations. Object modeling techniques: Introduction to object model, Dynamic model, Functional |
| **4** | **Week - 4** | Model. Strengths & Weakness of all models. |
| **UNIT 2** | | |
| **5** | **Week - 5** | Introduction to Programming C++: Object-Oriented Features of C++, data types in C++, variables |
| **6** | **Week - 6** | Operators, flow control, recursion, array, Pointers and their manipulation, strings, structures. |
| **7** | **Week - 7** | Class andObjects, Data Hiding & Encapsulation, Data members and Member functions, Inline Functions. |
| **8** | **Week - 8** | Static Data Members and Member Functions, Friend Functions, Preprocessor Directives,Namespace, Comparing C with C++. |
| **UNIT 3** | | |
| **9** | **Week - 9** | Constructors & Destructors: Roles and types of Constructors, Constructor Overloading. |
| **10** | **Week - 10** | Roles ofDestructors, Dynamic Memory Allocation: Pointers and their Manipulation. |
| **11** | **Week - 11** | new and delete Operators‘this’ Pointer. |

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| **12** | **Week -12** | Console I/O: Formatted and Unformatted I/O, Manipulators. |
| **UNIT 4** | | |
| **13** | **Week - 13** | Compile-Time Polymorphism: Unary and Binary Operators overloading through Member. |
| **14** | **Week - 14** | Functions and Friend Functions, Function Overloading, virtual functions, abstract class, virtual class. |
| **15** | **Week - 15** | Inheritance: Types of Derivations, Forms of Inheritance. |
| **16** | **Week - 16** | Roles of Constructors and Destructors inInheritance. |

## Class: BSC 2nd Year( 4th Sem.)

## Subject : Data Structures with C /C++(Paper : 4.1) 3 days in a week

| Week | Topics |
|---|---|
| | **UNIT 1** |
| Week - 1 | Data-Structure: Data-Structure operations, Algorithm, Complexity, Data structure and its essence |
| Week - 2 | Introduction to Arrays, Array operations, Multi- dimensional arrays, sequential allocation, address calculations, sparse arrays |
| Week - 3 | Stacks-Introduction to Stacks, primitive operations on stacks, Representation of stacks as an array. |
| Week - 4 | Stack-applications, Doubt session, Revision, class test |
| | **UNIT 2** |
| Week - 5 | Queues:-Introduction to queues, operations on queue, circular queue, priority queue . |
| Week - 6 | Applications of queue. Linked List-introduction and basic operations, Header nodes. |
| Week - 7 | Doubly linked list, circular linked list, Applications of linked list, Representation of linked list as an array. |
| Week - 8 | stacks and queues, Doubt session, Revision, class test |
| | **UNIT 3** |
| Week - 9 | Tree structures: Basic terminology, binary trees and binary search trees. |
| Week - 10 | Implementing binary trees, Tree traversal algorithms. |
| Week - 11 | Threaded trees, trees in search algorithms, AVL Trees, Polish notation |
| Week -12 | Expression trees, applications of binary trees, Doubt session, Revision, class test |
| | **UNIT 4** |
| Week - 13 | Graph data structure and their applications. Graph traversals. |
| Week - 14 | Shortest paths, spanning trees and related algorithms. |
| Week - 15 | Sorting: Internal and external sorting. Various sorting algorithms, Time and Space complexity of algorithms, Searching techniques. |
| Week - 16 | Applications of Sorting and Searching in computer science, Doubt session, Revision, class test |

## Class : BSC 2nd Year(4th Sem.)
## Subject : Operating System(Paper : 4.2) 3 days in a week

| Week | Topics |
|---|---|
| | **UNIT 1** |
| Week - 1 | Introductory Concepts: Operating system functions and characteristics, historical evolution of operating systems. |
| Week - 2 | Types of Operating System: Real time, Multiprogramming, Multiprocessing, Batch processing system. |
| Week - 3 | Distributed operating system, Parallel operating system |
| Week - 4 | Methodologies for implementation of O/S service system calls, system programs. |
| | **UNIT 2** |
| Week - 5 | Process management: Process concepts, operations on processes, Process states and Process Control Block. |
| Week - 6 | CPU Scheduling: Scheduling criteria, Levels of Scheduling. |
| Week - 7 | Scheduling algorithms, Multiple processor scheduling. |
| Week - 8 | Deadlocks: Deadlock characterization, Deadlock prevention and avoidance. |
| | **UNIT 3** |
| Week - 9 | Concurrent Processes, Critical Section Problem, Semaphores. |
| Week - 10 | Classical Process Coordination problems and their solution, Inter process Communication. |
| Week - 11 | Storage Management: memory management of single-user and multi-user operating system. |
| Week -12 | Partitioning, swapping, paging and segmentation, Thrashing. |
| | **UNIT 4** |
| Week - 13 | File management: File Systems: Functions of the system. |
| Week - 14 | File access methods, Allocation methods: Contiguous Allocation. |
| Week - 15 | Linked allocation method, Indexed allocation. |
| Week - 16 | Directory Systems: Structured Organizations, directory and file protection mechanisms. |

# LESSON PLAN

**Class: - B.Sc. III year(5th Sem.)**

**Subject:- Database Management Systems and Internet & Web Technology**

| S.No. | Week | Topic Covered |
|---|---|---|
| **1** | **Week 1** | Data, Information, Records and files.<br>Traditional file – based, Systems-File Based Approach<br>Introduction to Internet, Benefits of Internet, |
| **2** | **Week 2** | Limitations of File Based Approach<br>Database Approach, Characteristics of Database Approach<br>WWW, Hardware and software requirement for internet , internet protocols, applications of internet |
| **3** | **Week 3** | Database Management System (DBMS),<br>Components of DBMS Environment, DBMS Functions, Advantages and Disadvantages of DBMS. Classification of Database Management System<br>Internet Tools - Telnet, FTP, Gopher, Archie, Veronica, Mosaic, WAIS, IRC<br>Assignment and Doubts Class |
| **4** | **Week 4** | Roles in the Database Environment ,Data and Database Administrator, Centralized and Client Server architecture to DBMS<br>Internet Tools - Online Chatting, Messaging, and Conferencing Concepts, resources of internet. |
| **5** | **Week 5** | Database System Architecture – Three Levels of Architecture, External, Conceptual and Internal Levels, Schemas, Mappings and Instances. E-Mail mailing lists, Internet addressing, internet service provider (ISP) |

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| **6** | **Week 6** | Data Independence – Logical and Physical Data Independence.<br>Internet in India- Shell account, TCP/IP account |
| **7** | **Week 7** | Data Models: Records- based Data Models,<br>Object-based Data Models<br>Home page and Web Site, internet accessing<br>internet terminology, internet security<br>problems and solutions |
| **8** | **Week 8** | Physical Data Models, Conceptual Modeling<br>Overview of Intranet and its applications, Web Browsers, Search Engines<br>Hierarchical model, Network and relational model<br>Categories of Search Engines, Searching Criterion, Surfing the Net. |
| **9** | **Week 9** | Hypertext Transfer Protocol (HTTP), URL.<br>Models Revision, Assignments, Doubt Class<br>Entity-Relationship Model – Entity Types, Entity Sets, Attributes<br>HTML: Internet Language, Understanding HTML |
| **10** | **Week 10** | Keys, Relationship, relationship sets, Role name<br>Recursive relationship<br>Create a Web Page, Linking to other Web Pages,<br>Publishing HTML Pages, Structural constraints<br>Conceptual design using E-R Diagrams<br>Text Alignment and Lists, Text Formatting Fonts Control |
| **11** | **Week 11** | Relational Data Model:-Introduction, Properties of |

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| | | Relations, Keys, Integrity Constraints over Relations<br>E -mail Links and link within a Page.<br>Views, Relational Database Design: Functional Dependencies, Creating HTML Forms. |
| **12** | **Week 12** | Normalization : 1s t to 3rd Normal Form<br>BCNF, Lossless Join and Dependency preserving decomposition.<br>Creating Web Page Graphics |
| **13** | **Week 13** | SQL: Types & components of SQL<br>Putting Graphics on a Web Page<br>Data Definition, data types and Data definition commands<br>Custom Backgrounds and Colors, |
| **14** | **Week 14** | Data manipulation commands, Data Control Commands.<br>Data Control Commands Specifying Constraints(Primary Constraint) in SQL |
| **15** | **Week 15** | Data Control Commands Specifying Constraints (Foreign key, Unique, Not Null) in SQL<br>Schema, Basic Queries in SQL, Insert, Delete and Update operations. Inbuilt Date, String functions.<br>Commit, Rollback, Save points |
| **16** | **Week 16** | Views: Introduction, Advantages of creating views<br>Web Page Design and layout, Advanced Layout with Tables<br>Creating Animated Graphics,Using Style Sheets<br>Features, Destroying/ Altering table & Views. |

**Class :- B.Sc. 3rd year( 6th Sem.)**

**Subject:- Visual Basic Programming (Paper 6.1) – 3 days in a week**

| **Weeks** | **Topic Covered** |
|---|---|
| 1st Week | Introduction to VB: Visual & Non-visual programming, Procedural, Object-oriented and event driven programming languages |
| 2nd Week | The VB environment: Menu bar, Toolbar, Project explorer, Toolbox, Properties window, Form designer, Form layout, Immediate window. Event driven programming. |
| 3rd Week | Basics of Programming: Variables: Declaration, Types of variables, Converting variables types, User-defined data types, Scope & lifetime of variables. |
| 4th Week | Constants: Named & intrinsic. Operators: Arithmetic, Relational & Logical operators. I/O in VB: Various controls for I/O in VB<br><br>Class Test and Assignment |
| 5th Week | Message box, Input Box, Print statement, Programming with VB: Decisions and conditions: If statement, If-then-else, Select-case. |
| 6th Week | Looping statements: Do-loops, For-next, While-wend, Exit statement. Nested control structures. |
| 7th Week | Arrays: Declaring and using arrays, one-dimensional and multi-dimensional arrays, Static & dynamic arrays, Arrays of array. |
| 8th Week | Programming with VB: Procedures: General & event procedures<br><br>Class Test and Assignment |
| 9th Week | Subroutines, Functions, Calling procedures, Arguments-passing mechanisms, Optional arguments. |
| 10th Week | Named arguments, Functions returning custom data types. |

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| 11th Week | Working with forms: Adding multiple forms in VB, Hiding & showing forms |
| 12th Week | Load & unload statements, Activate & deactivate events, Form-load event, menu designing in VB<br><br>Class Test and Assignment |
| 13th Week | Database Programming using DAO |
| 14th Week | Database Programming using ADO |
| 15th Week | Simple ActiveXcontrols.<br><br>Class Test and Assignment |

**Class & Section:- B.Sc. 3rd year( 6th Sem.)**

**Subject:- Software Engineering (Paper 6.2) – 3 days in a week**

| **Weeks** | **Topic Covered** |
|---|---|
| 1st Week | Software and software engineering: Software characteristics, Software Processes, software crisis |
| 2nd Week | Software life cycle models, Waterfall, Prototype |
| 3rd Week | Evolutionary and Spiral Models, software engineering paradigms, goals and principles of software engineering. |
| 4th Week | Software requirement analysis – Structured analysis, object-oriented analysis and data modeling |
| 5th Week | Software requirement specification, validation.<br>Class Test and Assignment |
| 6th Week | Software requirements Analysis and Specifications: Requirement engineering, requirements analysis using DFD |
| 7th Week | Software requirements Analysis and Specifications: Requirement engineering, requirements analysis using DFD |
| 8th Week | nature of SRS, characteristics and organization of SRS |
| 9th Week | Software project management: Planning a software project, Software cost estimation |
| 10th Week | project scheduling, personnel planning, team structure<br>Class Test and Assignment |
| 11th Week | Software configuration management, software quality and quality assurance, project monitoring, risk management. |
| 12th Week | Design and implementation of software- Software design fundamentals, software design principles |
| 13th Week | Cohesion and Coupling, Classification of Cohesion &Coupling |
| 14th Week | Function oriented design, object oriented Design |
| 15th Week | Design verification, monitoring and control. |

**Class :-BBA 1st Year(1st Sem.)**

**Subject Name and Code :- COMPUTER FUNDAMENTALS (BBAN-104)**

| S.No. | Weeks | Topics Covered |
|---|---|---|
| 1 | Week 1 | Introduction – Digital and analog computers, evolution of digital computers, major components of a digital computer,<br>Revision |
| 2 | Week 2 | hardware, software, firmware, middleware and freeware, computer applications; |
| 3 | Week 3 | Input devices, output devices, printers, plotters, other forms of output devices;<br>Revision |
| 4 | Week 4 | main memory, secondary memory and backup memory.<br>Revision<br>Assignment-1 |
| 5 | Week 5 | Decimal number system, binary number system, conversion of a binary number to decimal number,<br>Revision |
| 6 | Week 6 | conversion of a decimal number to a binary number, addition of binary numbers,<br>Revision |
| 7 | Week 7 | binary subtraction, hexadecimal number system, octal number system.<br>Revision |
| 8 | Week 8 | Introduction to Operating System, history; functions, types,<br>Assignment-2<br>Test |
| 9 | Week 9 | structure, memory management; file management system.<br>Revision |
| 10 | Week 10 | Computer applications in offices, use of computers in books publication, |

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| **11** | **Week 11** | desktop publishing system, application of computers for data analysis, application of computer in education, |
| **12** | **Week 12** | application of computer in banks, medical field.<br>Assignment-3<br>Test |
| **13** | **Week 13** | Revision |
| **14** | **Week 14** | Revision |
| **15** | **Week 15** | Revision |
| **16** | **Week 16** | Assignment-4<br>Test |

## Class :-BBA 1st Year ( 2nd Sem. )

## Subject Name with code:- COMPUTER APPLICATIONS IN MANAGEMENT ( BBAN204 )

| S. No. | WEEK | Topic Covered |
|---|---|---|
| 1 | Week 1 | Introduction to computers- History, Memory. |
| 2 | Week 2 | Basic anatomy, operating system, |
| 3 | Week 3 | Input/output devices |
| 4 | Week 4 | Types of computers, classification of computers; |
| 5. | Week 5 | Hardware and software. |
| 6. | Week 6 | Networking- Advantage, types and devices. |
| 7. | Week 7 | Network connection |
| 8. | Week 8 | Wireless networking, virus and firewalls. |
| 9. | Week 9 | Introduction to information technologies; www, search engines, web browsers. |
| 10. | Week 10 | IP addressing, web hosting and web publishing |
| 11. | Week 11 | Internet applications in business, chatting and e-mailing |
| 12. | Week 12 | Computer applications, advantages and limitations, use in offices, education, institutions, healthcare. |
| 13. | Week 13 | Data, information and types; Information systems |
| 14. | Week 14 | Types- MIS, TPS, OAS, DSS, expert systems, executive information systems |
| 15. | Week 15 | Multimedia applications in business; marketing and advertising. |
| 16. | Week 16 | Web applications of multimedia. |

**Class : BBA 2ND YEAR ( 3rdsem)**

**Subject : INTRODUCTION To INFORMATION TECHNOLOGY( BBAN-304)**

| S. No. | WEEKS | Topic Covered |
|---|---|---|
| 1 | Week 1 | Introduction to MS Word. Basics about MS Word features, Terminology, Key points, advantages of using Ms word, Tool bars, Title bar, Scroll bar, Status bar, Ruler etc. Introduction to Ribbons, Home Ribbon and its various options. Creating and Editing Documents. View ribbon and its function, various types of views like page layout , print layout, web layout etc. |
| 2 | Week 2 | Formatting features, alignment, Font size, style, Find, Replace, Go to features explanation and uses. Ribbon Insert functions, Table insertion, Page break, inserting pictures, using clipart, inserting shapes, charts, header footer, footnote, endnote, Wordart, inserting symbols etc. |
| 3 | Week 3 | Ribbon Page layout and its functions like Setting Margin, orientation, watermark, page color, page border, spacing before and after. Concept of Mail Merge and its functions from create, start, write and insert field, preview results and finish step of mail merge. Review ribbon options like uses of spelling and grammer checking, thesaurus etc. |
| 4 | Week 4 | Misc. other functionality like Word count, inserting comments, Track changes, Accepting and rejecting changes, Design ribbon options, text directions etc. Doubt session of Ms Word |
| 5 | Week 5 | Introduction to MS EXCEL. Spreadsheet introduction, creating, editing in a worksheet, Excel terminology, Home ribbon and its functions like font color, fill color etc. Moving, copying data in worksheet and within worksheet, renaming cell and worksheet. Merging and wrapping text in worksheet |
| 6 | Week 6 | Insert row, insert column, Delete row, Delete Column, formatting, formats of table, conditional formatting. Insert Ribbon options like inserting picture, clipart, shapes, charts, types of charts like bar chart, pie chart, area chart etc. |

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| 7 | Week 7 | Inserting wordart, symbol, textbox, hyperling etc. Various types of page layouts and view ribbon's functions. Printing features like setting print area, setting margins, orientation, showing and hiding gridlines etc. |
| 8 | Week 8 | Intro to formulas. Various types of formulas under different categories like Text function, mathematical function, logical functions, statistical function etc. Data ribbon and its functions. Data validation, Remove duplicate entries, consolidating data |
| 9 | Week 9 | Sorting and filter command of data ribbon, Ascending and descending order sorting, filter, auto filter, uses of filter command misc. options like protect and share workbook, track changes.<br><br>Doubt session of Ms Excel |
| 10 | Week 10 | Intro to MsPower Point. Introduction to uses of presentation, creating and editing slides in any presentation with basic features like saving a presentation, opening an existing presentation etc. Home ribbon with various options like text direction, alignment, shapes and their effects |
| 11 | Week 11 | Insert ribbon and its functions, inserting pictures, charts, header footer, wordart, clipart etc. Design ribbon and its options like color, effects, font setting, page setup, slide orientation, background styles etc. |
| 12 | Week 12 | Animation ribbon and its function, custom animation, transition speed, adding sound to presentation, advance slide show options. Slide show and Review ribbon, rehearse timing, custom slide show, setup slide show and misc. options in power point |
| 13 | Week 13 | Options like spelling and grammer checking, inserting comments, thesaurus etc. Doubt session for Ms Powerpoint |
| 14 | Week 14 | Introduction to Tally, features and functionality of tally, advantages of using tally in accounting |
| 15 | Week 15 | Doubt session of Tally |
| 16 | Week 16 | Revision and doubt session for whole syllabus |

## Class :-BBA 2nd Year ( 4th sem. )

## Subject Name and code:- DataBase Management System (BBAN405)

| WEEK | Topic Covered |
|---|---|
| Week 1 | Introduction to Data Base Management System, Data v/s Information, Record, File Etc. |
| Week 2 | Data Dictionary and its types, Data Base Administrator, Role of DBA |
| Week 3 | Functions and Responsibility of DBA |
| Week 4 | File Oriented System v/s Database system, Advantages and disadvantages |
| Week 5 | Database System Architecture Introduction, Three levels of DBMS Architecture |
| Week 6 | Schema, sub-schema , types of schema and instances |
| Week 7 | Data independence, Mapping, Intro to Data Models |
| Week 8 | Hierarchical, Network, Relational, Semantic, Functional, Object Oriented and E-R Model |
| Week 9 | DataBase Security Introduction, Threats and security issue, Defence Mechanism |
| Week 10 | Security Requirements, Authorization, Encryption and Decryption, public and private key |
| Week 11 | Firewall Introduction, Need and working of firewall, Recovery Introduction, Failure, Recovery Techniques, |
| Week 12 | Distributed Database introduction, DDBMS components, Functions of DDBMS, Data Replication, Advantages and Disadvantages |
| Week 13 | Data Mining and Data Warehousing Concepts, Various Phases of Data Mining, Models, Problems and issues of data mining |
| Week 14 | Data Warehousing phases, OLAP vs OLTP, Warehousing Model and characteristics and limitations |
| Week 15 | Internet and emerging database technology, Building block of web, Digital Library |
| Week 16 | Multimedia Database, Structure of MDBMS, and Applications, Spatial Database, architecture, advantages and disadvantages |

**Class: BBA 3rd Year ( 5th Sem.)**

**Subject Name & Code: Computer Networking & Internet (BBAN 504)**

| S. No. | WEEKS | Topic Covered |
|---|---|---|
| 1 | Week 1 | Introduction to network, advantages and disadvantages of network, Network topologies, analog and digital signal. |
| 2 | Week 2 | Analog and digital transmission, transmission media, Doubt class and assignment |
| 3 | Week 3 | Network categories, wireless networks<br>Doubt class and assignment<br>OSI model and TCP/IP model, |
| 4 | Week 4 | Protocols and their classification, flow control and cryptography, |
| 5 | Week 5 | Ranking, Firewall. Doubt class and assignment<br>Overview of internet, internet service provider |
| 6 | Week 6 | Setting windows environment for dial up networking, search engine, searching web using search engine |
| 7 | Week 7 | Audio on internet, newsgroup, subscribing to news groups.<br>Doubt class and assignment |
| 8 | Week 8 | Intranet concepts and architecture, building corporate world wide web, |
| 9 | Week 9 | HTTP protocol, intranet infrastructure, |
| 10 | Week 10 | Fundamental of TCP/IP |
| 11 | Week 11 | Intranet security design |
| 12 | Week 12 | Intranet as a business tools |
| 13 | Week 13 | Future of intranet |
| 14 | Week 14 | Doubt class and assignment |
| 15 | Week 15 & 16 | Revision |

## Class :- BBA 3rd year( 6th Sem.)

## Subject Name and Code:- System Analysis & Design(BBAN-602)

| Weeks | Topic Covered |
|---|---|
| 1st Week | Introduction to analysis and design: - System and it characteristics, components, |
| 2nd Week | Environment and classification, SDLC, Case tools for analyst, |
| 3rd Week | Role of system analyst, ER data models |
| 4th Week | Feasibility study – economic, technical, operational |
| | Class Test and Assignment. |
| 5th Week | Design of Application: - DFDs, form design, screen design, report design, , |
| 6th Week | Structure chart, data base definition, |
| 7th Week | Equipment specification and selection. |
| 8th Week | Personnel estimates, I-O design |
| | Class Test and Assignment. |
| 9th Week | Implementation: data dictionary, decision tables |
| 10th Week | Decision trees, logical design to physical implementation. |
| | Class Test and Assignment. |
| 11th Week | Introduction to distributed data processing |
| 12th Week | Real time system: evaluating distributing system, |
| 13th Week | Designing distributed data base, |
| 14th Week | Event based real time analysis tools, |
| 15th Week | State transition diagrams. |
| | Class Test and Assignment. |
| 16th Week | Revision |

## Class :-BCOM(Hons.) 1st Year ( 2nd Sem. )

## Subject Name and code:- INTRODUCTION TO COMPUTERS (BCH-206)

| Week | Topic Covered |
|---|---|
| Week 1 | Computer basic concepts: Definition and characteristics of a computer, Advantages of computer, Components of computer, Human-being Vs computer, Difference between Computer and Calculator. |
| Week 2 | Applications of computer, Generations of Computer, Types of computer: Analog, Digital and Hybrid computers, Micro, Mini, Mainframe and Super Computers |
| Week 3 | Input devices and Output devices, Introduction to Computer memories: Primary storage, Secondary storage. Introduction to Software: Software Types, Systems Software |
| Week 4 | Types of Operating System, Application Software, Introduction to Programming Language: Types of Programming Language, Language Translators. |
| Week 5 | Computer Network: Introduction, Network Elements, Advantages of Networking, Network Topologies, Communication Channels, Types of Computer Networks- LAN, MAN and WAN |
| Week 6 | Public and Private Network., Communication devices, Introduction to MS Word: Features of MS Word, Components of Word document window, Menu Bars, Creating own document |
| Week 7 | Formatting text and document, Mail Merge, Creating a Macro, Working with auto shapes, Export and Import File |
| Week 8 | Finding and replacing text, Spell Check and Grammar Check, Working within tables-Adding, deleting, modifying rows and columns, Printing documents. |
| Week 9 | Internet: Introduction, History of Internet, Benefits of the Internet, Hardware and Software requirement for Internet, Internet Applications or services of Internet, Types of Internet Connection |
| Week 10 | Internet Addressing, Extranet and E-Mail, Mobile Computing.MS Excel: Features of MS Excel, Components of Worksheet, Menu Bars, Working with worksheets. |
| Week 11 | Cells-Entering ,editing, moving, copying, cutting, pasting, Inserting and deleting of cells, rows and columns, Formatting a worksheet, Formatting textual data |
| Week 12 | Creating and editing charts, Types of Chart, Excel Functions, Goal Seek, validation, Pivot Table and Pivot Chart, Sort, Filter, Print the worksheet. |

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|---|---|
| Week 13 | Introduction to Database Systems: Basic concepts, Components of database, Advantages of database |
| Week 14 | DBMS, Components of DBMS, Database Models, Microsoft Access: Create a database |
| Week 15 | Database Objects, Creating tables, Data Types, Sorting, Filtering and 17 Creating a relationships, |
| Week 16 | Format a table, Creating and modifying a Form, Operators in Access, Designing Queries and Reports. |

## Class:- BCOM (Hons) 3rdsem
## Subject Name and Code:- Basics of Information Technology (BCH-306)

| S.No. | Weeks | Topics Covered |
|---|---|---|
| 1 | Week 1 | Essentials of Computers: Concept of data, information and data processing, Levels or type of information, Uses of information, Business data Processing Cycle.<br>Revision |
| 2 | Week 2 | Methods of data processing, Application of Electronic data processing<br>Revision Memory and Mass Storage Devices |
| 3 | Week 3 | Introduction of Memory System, Types of Memory-Primary and Secondary Memory, RAM and ROM, Types of Secondary Storage Devices; |
| 4 | Week 4 | Software Concepts: Types of Software and their role, System Languages and Translators, Functions and Types of an Operating System.<br>Revision<br>Assignment-1 |
| 5 | Week 5 | Data Communications: Basic elements of a Communication System, Forms of Data Transmission, Data transmission speed, Modes of Data Transmission: Analog and Digital data transmissions,<br>Revision |
| 6 | Week 6 | Data Transmission Media; Wire Cables, Microwave, Fiber-optics, Communication Satellites. Emerging Trends in IT: Electronic Commerce(E-Commerce), Types of E-Commerce, Advantages and Disadvantages of E-commerce,<br>Revision |
| 7 | Week 7 | Application of E-commerce, process in e- commerce, Types of an Electronic Payment System, Security issues in E-commerce, Security Schemes;<br>Revision |
| 8 | Week 8 | Electronic data Interchange (EDI); Mobile communication, Bluetooth Communication, Infrared communication, Smart Card. |

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| | | Assignment-2<br><br>Test |
| **9** | **Week 9** | Computer Networks: Introduction to Computer Network, Types of Network; Local Area Network, Wide Area Network, Types of Public and Private Network,<br><br>Revision |
| **10** | **Week 10** | Network Topology; Internet and its Application, History of Internet, Benefits of Internet, ISP, Internet Accounts, |
| **11** | **Week 11** | Internet Addressing, Information Technology: Impact of IT on Business environment; Applications of IT. |
| **12** | **Week 12** | Multimedia: Concept of Multimedia, Multimedia Components, Multimedia Applications.<br><br>Assignment-3<br><br>Test |
| **13** | **Week 13** | Presentation with Power- Point: Features of Power-point, Creating presentation the easy way, Working with different views, |
| **14** | **Week 14** | working with graphics in Power Point, Sound effects and Animations effects, Printing in Power-point. |
| **15** | **Week 15** | Introduction to Accounting Packages-Tally: Features of Tally, Preparation of Vouchers, Salary statement, |
| **16** | **Week 16** | Maintaining of Inventory records, Maintenance of Accounting Books and final Accounts, Generating and Printing reports.<br><br>Assignment-4<br><br>Test |