YEARLY SCHEME OF EXAMINATION – BCA COURSE I YEAR

BCA-101 Introduction To Information Technology
BCA-102 Pc Software Packages
BCA-103 Problem Solving Through 'C' Programming
BCA-104 Basic Electronics
BCA-105 Basic Mathematics
BCA-106 Computer Organization
BCA-107 Practical I : PC Software And Basic Electronics Lab.
BCA-108 Practical II : C Programming Lab.

YEARLY SCHEME OF EXAMINATION – BCA COURSE II YEAR

BCA-201 Computer Communications And Networking
BCA-202 Database Management Systems
BCA-203 Fundamentals Of Operating Systems
BCA 204 Data Structures Using 'C'
BCA 205 System Analysis And Design
BCA-206 Business Communications
BCA-207 Practical I: Database Management & Data Structure Lab.
BCA-208 Practical Ii: Business Communications Lab

YEARLY SCHEME OF EXAMINATION – BCA COURSE II YEAR

BCA-301 Object Oriented Programming Using C++
BCA-302 Visual Application Development Using VB.Net 2010
BCA-303 Linux Environment
BCA-304 Management Information System
BCA-305 Practical I : Visual Programming
BCA-306 Practical II : Linux
BCA-307 Project

SYLLABUS 2013-14
BCA-I YEAR

Duration : 3Hrs.   **BCA-101**   **Marks (Max. 100, Min. 35)**

INTRODUCTION TO INFORMATION TECHNOLOGY
UNIT-I

Computer Basics: Algorithms, A Simple Model of a Computer, Characteristics of Computers, Problem-solving Using Computers.

Data Representation: Representation of Characters in computers, Representation of Integers, Representation of Fractions, Hexadecimal Representation of Numbers, Decimal to Binary Conversion, Error-detecting codes.

Input & Output Devices: Description of Computer Input Units, Other Input Methods, Computer Output Units (Printers, Plotters)

UNIT-II

Computer Memory: Memory Cell, Memory Organization, Read Only Memory, Serial Access Memory, Physical Devices Used to Construct Memories, Magnetic Hard Disk, floppy Disk Drives, Compact Disk Read Only Memory, Magnetic Tape Drives.

Processor: Structure of Instructions, Description of a Processor, Machine Language and Instruction set. Processors used in desktops and lap tops. Specification of a desktop and Lap top computer currently available in the market (Specifications of processor, motherboard &chipset, memory, interface & capacity of hard disk & DVD drives, I/O ports)

UNIT-III

Computer Architecture: Interconnection of Units, Processor to Memory communication, I/O to Processor Communication, Interrupt Structures, Multiprogramming, Processor Features, Reduced Instruction, Set Computers (RISC), Virtual Memory.

Software Concepts: Types of Software, Programming Languages, Software (Its Nature & Qualities), Programming Languages.

UNIT-IV

Operating Systems: History and Evolution. Main functions of OS Multitasking, Multiprocessing, Time Sharing, Real Time OS with Examples

Database Management System : Purpose and Organization of Database, Introduction to Data Models

Computer Generation & Classifications: First Generation of Computers, The Second Generation, The Third Generation, The Fourth Generation, The Fifth Generation, Moore's Law, Classification of computers, Distributed Computer System, parallel computers.

UNIT- V

Computers & Communications: Introduction to Computer Communications, Introduction to Computer Networks, Types of Networks, OSI/TCP Model, LAN tech- nologies (fast Ethernet &Gigabit Ethernet), How LAN works, Brief survey of active and passive LAN components.

Internet: Network, Client and Servers, Host & Terminals, TCP /IP, World Wide Web, Hypertext, Uniform Resource Locator, Web Browsers, IP Address, Domain Name, Internet Services Providers, Internet Security, Internet Requirements, Web Search Engine, Net Surfing, Internet Services, Case Study, Intranet.

Cyber Laws: Introduction to Cyber Laws**,** Cyber crime, Cyber contract, Cyber privacy, ITAct

Recommended Books:

1. P .K. Sinha, Fundamentals of Computers, BPB Publications

1. V. Rajaraman, Fundamentals of Computers, 3rd Edition, PHI Publications

SYLLABUS 2013-14
BCA-I YEAR
Duration : 3Hrs.   BCA-102   Marks (Max. 100, Min. 35)

PC SOFTWARE PACKAGES

UNIT-I

DOS: Introduction, history & versions of DOS, DOS basics- Physical structure of disk, drive name, FAT, file & directory structure and naming rules, booting process, DOS system files, DOS commands- internal & external,

UNIT-II

Windows Operating System : Windows concepts, Features, Windows Structure, Desktop, Taskbar, Start Menu, My Computer, Recycle Bin, Windows Accessories- Calculator, Notepad, Paint, Wordpad, Character Map, Windows Explorer, Entertainment, Managing Hardware & Software- Installation of Hardware & Software,

Using Scanner, System Tools, Communication, and Sharing Information between programs.

UNIT-III

Word Processing; MS-Word: Features, Creating, Saving and Opening Documents in Word, Interface, Toolbars, Ruler, Menus, Keyboard Shortcut, Editing, Previewing, Printing, & Formatting a Document, Advanced Features of MS Word, Find & Replace, Using Thesaurus, Using Auto- Multiple Functions, Mail Merge, Handling Graphics, Tables & Charts, Converting a word document into varipus formats like-Text, Rich Text format, Word perfect, HTML etc.

UNIT-IV

Worksheet- MS-Excel: Worksheet basics, creating worksheet, entering into worksheet, heading information, data, text, dates, alphanumeric values, saving & quitting worksheet, Opening and moving around in an existing worksheet, Toolbars and Menus, Keyboard shortcuts, Working with single and multiple workbook, working with formulae & cell referencing, Auto sum, Coping formulae, Absolute & relative addressing, Worksheet with ranges, formatting of worksheet, Previewing & Printing worksheet, Graphs and charts, Database, Creating and Using macros, Multiple worksheets- concepts, creating and using.

UNIT-V

Introduction to Power Point: Presentations, Creating, Manipulating & Enhancing Slides, Organizational Charts, Excel Charts, Word Art, Layering art Objects, Animations and Sounds, Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effect or In-Built Sound Effect. '

Other packages: DTP software: Brief survey of MS Publisher, Pagemaker, Coreldraw, Adobe Photoshop

Recommended Books:

1. PC Software for Windows – R.K. Taxali

2. Unix Concepts and Applications – Sumitabha Das.

SYLLABUS 2013-14
BCA-I YEAR

Duration : 3Hrs.   **BCA-103**   **Marks (Max. 100, Min. 35)**

PROBLEM SOLVING THROUGH 'C' PROGRAMMING

UNIT-I

Algorithm & Algorithm Development : Definition and properties of algorithm, flow chart symbols, conversion of flow chart to language, example of simple algorithms, Introduction to program design, errors – syntax error, runtime error, logic error.

UNIT-II

Basics of C – Language : History, Constants – Integer, Real, Character; Variables and Keywords; Data types and size, constants, arrays, pointers, Operators – arithmetic, relational, logical, increment and decrement, bitwise and assignment, Hierarchy of Operators and Operations, Associatively of Operators, creation and evaluation of expressions.

UNIT-III

Control Structure : Decision Structure: - Simple if, if – else, if – else – if, nested if, switch case; Loop Control Structure:- while, do while and for; Use of break, goto and continue;

UNIT-IV

Functions : Function definition, declaration and prototypes, Call by Value and Call by Reference, Scope Rule of Functions.

UNIT-V

Complex C-Language : Variables – external, static, register; Recursive functions; multi – dimensional arrays; Pointers and arrays, pointer arrays, Structures – declaring and accessing elements, array of structure, File Input/Output – Create, Open, Read, Write, Delete, Close;

Recommended Books:

1. Yashavant Kanetkar, Let us C

2. Balaguruswamy, Programming in C

SYLLABUS 2013-14
BCA-I YEAR

Duration : 3Hrs.   **BCA-104**   **Marks (Max. 100, Min. 35)**

BASIC ELECTRONICS

1. Semi Conductor Physics : Properties of Semiconductors, Commonly used Semiconductors, Intrinsic & Extrinsic semi conductors, P Type & N Type semiconductors, PN Junction & Biasing..

2. Semiconductor Diode : Diode, symbol, ratings, forward & reverse bias characteristics. Half wave rectifier, full wave rectifier, bridge rectifier, and simple filter circuits Zener diode & its application

3. Transistor (Introductory concepts) : PNP & NPN Transistor, CB, CC, CE configurations & biasing, Transistor as an Amplifier, Transistor as a switch, Alpha & Beta parameters, Frequency response & bandwidth, RC coupled Trasistor Amplifier & Transformer coupled transistor amplifier – their circuit diagram, Audio power amplifier, Push Pull amplifier. Principle of negative feedback in Amplifier & Gain, Transistor tuned amplifier Circuit, Oscillate Circuits, Crystal Oscillator, Different type of signals: Sine Ware, Saw Tooth, Triangular, Pulses, Multi vibrators.

4. LED, Photo Diode, Photo Transistor, Thermistor, LDR, BCR, Triode, their Characteristics & Applications.

5. FET, MOSFET & Construction, Symbol & Basic Circuits, their Advantage over Transistor.

Reference Books:

1.   J Millman & C.C. Halkias - Integrated Electornics; Tata Mc-Graw Hill. Pearson education.

2.   Rebert Boylestad & L. Nashelsky - Electronic Devices and Circuit Theory.

3.   Sedra Smith-Micro Electronic Circuits. Oxford Press, India.

SYLLABUS 2013-14
BCA-I YEAR

Duration : 3Hrs.   **BCA-105**   **Marks (Max. 100, Min. 35)**

BASIC MATHEMATICS
UNIT-I

Evaluating Algebraic Expressions : Order of operations Evaluating algebraic expressions.

Linear Equations : Translating algebraic expressions combining like terms Solving linear equations : Addition property Solving linear equations: Multiplication property combining rulesLiteral equations solving linear inequalities.

Graphing Linear Equations : Linear equations in two variables The Cartesian coordinate system the graph of a linear equation Slope Point-slope form of a line Graphing linear inequalities

UNIT-II

Systems of Linear Equations : Systems of equations in two variables (addition/elimination)

Operations with polynomials : Positive integer exponents, Zero and negative integer exponents, Definition of polynomials, Addition and subtraction of polynomials, multiplying polynomials

Factoring polynomials : Introduction to factoring, Difference of squares, Quadratic trinomials, Solving equations by factoring, some word problems involving quadratic, equations

UNIT-III

Radical expressions and complex numbers : Introduction to roots and radicals, simplifying radical expressions [No variables] Operations with radical expressions [No rationalizing binomials], Complex Number [i Notetion only, No operations]

Quadratic equations and some conics : Special methods, completing the square, the quadratic formula, Parabolas [Graph by table]

UNIT-IV

SETS: Sets, subsets, equal sets, null set, universal set, finite & infinite sets, open & closed sets etc., operations on sets, partition of sets, cartesian product.

DIFFERENTIATION: Derivative, derivatives of sum, differences, product & quotients, chain rule, derivatives of composite functions.

UNIT-V

INTEGRATION Integral as limit of a sum, indefinite & definite integrals, methods of integration substitution, by parts, partial fractions, integration of algebraic and transcedental functions.

PLANE CURVES & POLAR COORDINATES : Polar coordinates, curve tracing in polar coordinates, area in polar coordinates, Arc length, area & volume of surface of revolution in Cartesian and polar coordinates.

Recommended Books:

1. C. L. Liu.: Elements of Discrete Mathematics, Tata Mac-Graw Hill.
2. Thomas, G.B. and R. L. Finney: Calculus & Analytical Geometry, Addison-Wesley, 9th edition.
3. Chandrika Prasad: Mathematics for Engineers, Prasad Mudranalaya, Allahabad, 19th edition
4. Shanti Narayan: Differential Calculus, S.Chand & Co.
5. Shanti Narayan: Integral Calculus, S.Chand & Co.

SYLLABUS 2013-14
BCA-I YEAR

Duration : 3Hrs.   **BCA-106**   **Marks (Max. 100, Min. 35)**

COMPUTER ORGANIZATION

UNIT-I

Overview of electronics : Electronic components – Register, Capacitor and Inductors, Semiconductor devices – Diodes, Transistors (BJT and FET). Analog vs Digital electronics, Transistor as a switch. Integrated circuits, SSI, MSI, LSI, and VLSI circuits. Multivibrators – astable, bistable, monostable, counters ripple and decade, edge and level triggering.

UNIT-II

Building blocks of computer system : Basic building blocks – I/O, Memory, ALU and its components, Control Unit and its functions, Instruction – word, Instruction and Execution cycle, branch, skip, jump and shift instruction, Operation of control registers; Controlling of arithmetic operations;

UNIT-III

Addressing techniques and registers : Addressing techniques – Direct, Indirect, Immediate, Relative, Indexed addressing and paging. Registers – Indexed, General purpose, Special purpose, overflow, carry, shift, scratch, Memory Buffer register; accumulators; stack pointers; floating point; status information and buffer registers.

UNIT-IV

Memory : Main memory, RAM, static and dynamic, ROM, EPROM, EEPROM, EAROM, Cache and Virtual memory.

UNIT- V

Interconnecting System Components : Buses, Interfacing buses, Bus formats – address, data and control, Interfacing keyboard, display, auxiliary storage devices and printers. I/O cards in personal computers.

Introduction to Microprocessors and Microcontrollers: introduction to 8085 micropocesor, examples of few instructions to understand addressing techniques. Difference between microprocessor and microcontrollers.

Recommended Books

1. Andrew S. Tanenbaum, Structured Computer Organization, Printice Hall.

2. William Stallings, Computer Organization and Architecture, Sixth Edition, Pearson**.**

SYLLABUS 2013-14
BCA-I YEAR

Duration : 3Hrs.   **BCA-107 & 108**   **Marks (Max. 100, Min. 35)**

PRACTICAL I: PC SOFTWARE AND BASIC ELECTRONICS LAB.

Experiments based on papers BCA 102.

PRACTICAL II: C PROGRAMMING LAB.

Experiments based on paper BCA 103.

SYLLABUS 2013-14
BCA-II YEAR

Duration : 3Hrs.   **BCA-201**   **Marks (Max. 100, Min. 35)**

COMPUTER COMMUNICATIONS AND NETWORKING

UNIT-I

Protocol Architecture : Overview: Communication model, Communication Tasks, Data Communication Networking: WAN, LAN, Wireless Networks. Basics of Network Software: Protocol and protocol architecture, Protocol functions, Design Issues for the layers, interfaces &Services, Connection oriented and connectionless services, service primitives, relationship of services to protocols, ISO REF Models, TCP/IP Model.

Data Communications: Data Transmission: Concepts of Frequency, Spectrum, bandwidth, Electromagnetic spectrum and frequencies for data communication, Fourier analysis, Data and signal, Transmission impairments, channel capacity, Nyquist bandwidth, Shannon capacity formula, decibels and signal strength, Trans - mission media: Coaxial, twisted pair, Comparative study of Categories of cables, Coaxial, Optical Fibers, Wireless transmission: Terrestial Microwave, satellite, Broadcast Radio, Infrared.

UNIT-II

Data Encoding: (Brief idea of NRZ, Bipolar AMI, B8ZS, HDB3, ASK, FSK, PSK, PCM, AM, FM, PM), Spread Spectrum. Asynchrous and Synchronous transmission, Full and Half duplex, Interfacing, Functional and Procedural aspects of V.24, Data Link Control: Flow control: Stop and Wait, Sliding window, Error detection: Parity Check, CRC. Error control: Stop and Wait ARQ, Go back-N ARQ, Selective- Reject ARQ, Brief idea of HDLC and other Data Link control protocols

UNIT-III

Circuit Switching: Simple switching Network, Circuit Switching Networks, Brief idea of following (detail working) not required: Circuit Switching Concepts: Space Division switching, Time Division Multiplexing, Routing in circuit switching Networks, Control Signalling, Inchannel & common channel signaling, Brief idea of SS7. Packet Switching: Packet switching principles, Routing, X.25

UNIT-IV

LAN Technology: LAN architecture, IEEE 802 standards, Ethernet (CSMA/CD): Medium Access Control, 10Mbps, 100Mbps, Gigabit Ethernet. Brief survey of other LAN systems (Token ring, FDDI, ATM, Fiber channel). Wireless LANS, Bridges, Latest trends in LAN technologies LAN Devices: Study of specifications of L2 and L3 switches, Structured cabling, Passive components.

UNIT-V

Principles of Internetworking, connection less Internetworking, IP, IPv6, IP multicasting. Routing protocols, TCP, UDP, SNMP, SMTP and MIME, HTTP.

Recommended Books :

1.William Stallings: Data & Communications, Sixth Edition

2.A. S. Tanenbaum : Computer Networks.

SYLLABUS 2013-14
BCA-II YEAR

Duration : 3Hrs. **BCA-202** **Marks (Max. 100, Min. 35)**

DATABASE MANAGEMENT SYSTEMS

UNIT-I

Introduction : Purpose of the data base system, data abstraction, data model, data independence, data

definition language, data manipulation language, data base administrator, data base users, overall structure.

ER Model : entities, mapping constrains, keys, E-R diagram, reduction E-R diagrams to tables, generation, aggregation, design of an E-R database scheme.

UNIT-II

Relational Model : The catalog, base tables and views. Relational Data Objects - Domains and

Relations: Domains, relations, kinds of relations, relations and predicates, relational databases.

Relational Data Integrity - Candidate keys and related matters: Candidate keys. Primary and alternate

keys. Foreign keys, foreign key rules, nulls. Candidate keys and nulls, foreign key and nulls.

UNIT-III

The SQL Language: Data definition, retrieval and update operations. Table expressionsconditional expressions, embedded SQL.

Views: Introduction, what are views for, data definition, data manipulation, SQL support.

UNIT-IV

Network model : basic concepts, data structure diagrams, DBTG CODASYL model, DBTG data retrival

facility, DBTG update facility, DBTG set processing facility, mapping networks to file, networks system.

Hierarchical model : basic concepts, tree structure diagrams, data retrieval facility, update facility, virtual records, maping hierarchical to files, hierarchical system.

UNIT-V

File and system structure : overall system structure, file organisation, logical and physical file organization,

sequential and random, hierarchical, inverted, nullist, indexing and hashing, B-tree index files.

Recommended Books :

1.Date C.J., Database Systems, Addision Wesley.

2.Korth, Database Systems Concepts, McGraw Hill.

SYLLABUS 2013-14
BCA-II YEAR

Duration : 3Hrs.   **BCA-203**   **Marks (Max. 100, Min. 35)**

FUNDAMENTALS OF OPERATING SYSTEMS

UNIT-I

Introduction: What is an operating system? Mainframe, desktop, multiprocessor, distributed, clustered, realtime and handheld systems.

Operating System Structures: System components, operating system services, system calls, systems programs, system structure, virtual machines.

UNIT-II

Process: Process concept, process scheduling, operations on processes, cooperating processes. Inter process communication.

CPU Scheduling: Basic concepts, scheduling criteria, scheduling algorithms, algorithm evaluation.

UNIT-III

Process Synchronization: The critical section problem, semaphores, classical problems of synchronization.

Deadlocks: Deadlock characterization, methods for handling deadlocks. Deadlock prevention, avoidance and detection. Recovery from deadlocks.

UNIT-IV

Memory Management: Swapping, contiguous memory allocation, paging, segmentation, segmentation with paging.

Virtual Memory: Demand paging, page replacement, allocation of frames, thrasing.

UNIT-V

Linux: History, design principles, kernel modules, process management, scheduling, memory management, file systems, input and output, inter process communication, network structure, security.

Recommended Books:

1. Silberschatz G.G., Operating System Concepts, John Wiley & Sons Inc.

SYLLABUS 2013-14
BCA-II YEAR

Duration : 3Hrs.　　　　　　　**BCA-204**　　　　**Marks (Max. 100, Min. 35)**

DATA STRUCTURES USING 'C'

UNIT-I

Linear Structure: Arrays, records, stack, operation on stack, implementation of stack as an array, queue, operations on queue, implementation of queue.

UNIT-II

Linked Structure : List representation, operations on linked list - get node and free node operation, implementing the list operation, inserting into an ordered linked list, deleting, circular linked list, doubly linked list.

UNIT-III

Tree Structure : Binary search tree, inserting, deleting and searching into binary search tree, implementing the insert, search and delete algorithms, tree traversals

UNIT-IV

Graph Structure : Graph representation – Adjacency matrix, adjacency list, adjacency multilist representation. Orthogonal representation of graph . Graph traversals - bfs and dfs. Shortest path, all pairs of shortest paths, transitive closure, reflexive transitive closure.

UNIT-V

Searching and sorting : Searching - sequential searching, binary searching, hashing. Sorting - selection sort, bubble sort, quick sort, heap sort, merge sort, and insertion sort, efficiency considerations.

Recommended Books :

1. Horowitz E Sartaj Sahni, Fundamentals of Data Structure, Galgotia Publication Private Limited., New Delhi.

SYLLABUS 2013-14
BCA-II YEAR
Duration : 3Hrs.   **BCA-205**   **Marks (Max. 100, Min. 35)**
SYSTEM ANALYSIS AND DESIGN

UNIT-I

Introduction : System Concept and the need for system approach, Definition of system and system analysis, Factoring into subsystems, Black box system, Introduction to the basic elements of the system, Different types and behaviour of the system.

UNIT-II

The System Development Life Cycle and System Analyst : Source and inspiration of a new system development, Recognition and need, Linear approach and prototype approach, Different phases in SDLC, Role of System Analyst.

UNIT-III

System Analysis: Importance of planning and control, Information Gathering: Various Methods, Tools of Structured Analysis: DFD, Decision Tree, Structured English, Decision Tables, Data Dictionary, Feasibility study. System Design: The Process of Design: Logical and Physical design, Methodologies: Structured, Form- Driven, IPO Charts etc., Input Output Form Design, File Organization: Sequential Indexed, inverted list, Database Design, Logical and Physical View of Data.

UNIT-IV

System Implementation : Need of Testing, Test Plan, Quality Assurance, Trends in Testing, Audit Trail, Post Implementation Review, Project Scheduling, Selection of Hardware and Software

UNIT-V

Security and Recovery in System Development : System Security: Definition, Threats to system security, Control measures, Disaster/ Recovery Planning, Ethics in System Development. Case Study.

Recommended books:

1.System Analysis and Design - E.M.Awad

2.System Analysis and Design - Dennis Wixom

SYLLABUS 2013-14
BCA-II YEAR

Duration : 3Hrs.   **BCA-206**   **Marks (Max. 100, Min. 35)**

BUSINESS COMMUNICATIONS
UNIT-I

Concepts and Fundamentals : Meaning of communication, Importance of communication, Communication scope, Process of communication, Communication models and theories, Essentials of good communication - The seven Cs of communication, Factors responsible for growing importance of communication, Channels of communication, Verbal and Non-Verbal communication Formal and Informal communication Barriers of communication.

UNIT-II

Written Communication : Objectives of written Communication, Media of written communication, Merits and demerits of written communication, Planning business messages.
Writing Letters : Business letters, Office memorandum, Good news and bad news letters, Persuasive letters, Sales letters, Letter styles/ layout.

UNIT-III

Report Writing : Meaning & Definition, Types of report (Business report & Academic report), Format of report, Drafting the report, Layout of the report, Essential requirement of good report writing. **Language Skills : I**mproving command in English, Choice of words, Common roblems with verbs, adjectives, adverbs, pronouns, conjunctions, punctuation, prefix, suffix etc.

UNIT-IV

Oral Communication : Principles of effective oral communication, Media of oral communication, Advantages of oral communication, Disadvantages of oral communication, Styles of oral communication. Interviews : Meaning & Purpose, Art of interviewing, Types of interview, Interview styles, Essential Features, Structure, Guidelines for Interviewer, Guide lines for interviewee.
Arts of Listening : Good listening for improved communications, Art of listening, Meaning, nature and importance of listening, Principles of good listening, Barriers in listening.
Meetings : Definition, Kind of meetings, Advantages and disadvantages of meetings/ committees, Planning and organisation of meetings.

UNIT-V

Job Application : Types of application, Form & Content of an application, Drafting the application, Preparation of resume.
Project Presentations : Advantages & Disadvantages, Executive Summary, Charts, Distribution of time (presentation, questions & answers, summing up), Visual presentation, Guidelines for using visual aids, Electronic media (power-point presentation).
Business Negotiation : Definition of negotiation, Factors that can influence negotiation, What skills do we need to negotiate, Negotiation process (preparation, proposals, discussions, bargaining, agreement, implementation).

Recommended Books :
1. Communication by C.S. Rayudu, Himalaya Publishing House.
2. Communication Today - Understanding Creative Skill by Reuben Ray, Himalaya Publishing House.
3. Successful Communication by Malra Treece.
4. Business Communication Today by Bovee & Thill, McGraw Hill.

5. Principles of Business Communication by Murphy and Hilderbrandth.
6. Effective Communication Skiils by O. N. Kaul & K. K. Sharma, Creative Publishers
7. Chicago Manual of style PHI.
8. Essentials of Business Communication by Rajendra Pal & J. S. Korlahalli, Sultan Chand & Sons.
9. Business Communication by K. K. Sinh

SYLLABUS 2013-14
BCA-II YEAR

Duration : 3Hrs.   **BCA-207 & 208**   **Marks (Max. 100, Min. 35)**

PRACTICAL I: DATABASE MANAGEMENT & DATA STRUCTURE LAB.

Experiments based on the paper BCA 202. & 204

PRACTICAL II: BUSINESS COMMUNICATIONS LAB

Experiments based on the paper BCA 206. Atleast a 10 seat Language Lab must be established and used for English Communication(Language Skill, Oral Communications and Art of listening). Students are expected to go through well defined curriculum offered with English Language Lab Software and their competency

shall be checked during external evaluation.(50 Marks) Candidates competency in other aspects of business communications shall be evaluated for remaining 50 marks.

SYLLABUS 2013-14
BCA-III YEAR
Duration : 3Hrs.   **BCA-301**   **Marks (Max. 100, Min. 35)**

OBJECT ORIENTED PROGRAMMING USING C++

UNIT – I

Different paradigms for problem solving, need for OOP, differences between OOP and procedure oriented programming, abstraction, overview of OOP principles- encapsulation, inheritance and data binding polymorphism. abstraction. C++ basics: structure of a C++ program, data types, declaration of variables, expressions, operators, type conversions, pointers and arrays, strings, structures, references, flow control statement, functions-scope of variables, parameter passing, recursive functions, default arguments, inline functions, dynamic memory allocation and deallocation operators.

UNIT – II

C++ classes and data abstraction : class definition, class structure, class objects, class scope, this pointer, static class members, constant member functions, constructors and destructors, dynamic creation and destruction of objects, friend function and class, static class member. Overloading : function overloading, operator overloading – unary, binary operators.

UNIT - III

Inheritance : defining a class hierarchy, different forms of inheritance, defining the base and derived classes, access to the base class members, base and derived class construction, destructors, virtual base class. Polymorphism: static and dynamic bindings, base and derived class virtual functions, dynamic binding through virtual functions, virtual function call mechanism, pure virtual functions, abstract classes, implications of polymorphic use of classes, virtual destructors.

UNIT - IV

Templates - function templates and class templates, overloading of function template, static class member in class template. Exception handling: benefits of exception handling, throwing an exception, the try block, catching an exception, exception objects, exception specifications, rethrowing an exception, catching all exceptions.

UNIT-V

File handling : stream classes hierarchy, stream I/O, file streams, opening and closing data file, creating a data file, read and write functions, error handling during file processing. Standard template library (STL): component of STL, containers, iterartors, algorithms, application of container classes.

Recommended books :

Object Oriented Programming with C++ : E. Balagurusamy.

SYLLABUS 2013-14
BCA-III YEAR

Duration : 3Hrs.   **BCA-302**   **Marks (Max. 100, Min. 35)**

VISUAL APPLICATION DEVELOPMENT USING VB.NET 2010

Introduction to Microsoft .Net Framework 4.0. Getting Started with VB.Net 2010, exploring the Visual Studio IDE 2010. Variables, Constants, and Calculations; Decisions and Conditions; Working with functions, Procedures and Properties. String, Characters and Regulars Expressions.

Advance Features of Visual Basic 2010. Windows Forms and Controls. Menus, Common Dialog Control, context Menu; List and Loops; Array and Collections.

OO Design in VB 2010. writing custom classes. Exception handling. Files and Streams. Creating MDI Applications and Help System.

Introduction to ADO.Net. Data Access and Manipulation with ADO.Net. The Language Integrated Query (LINQ). Web Applications.

Data Access using Entity Framework. Windows Presentation Foundation (WPF). Data Binding with WPF, WPF Graphics. WPF Animations

SYLLABUS 2013-14
BCA-III YEAR

Duration : 3Hrs.   **BCA-303**   **Marks (Max. 100, Min. 35)**

LINUX ENVIRONMENT

UNIT-I

Overview of Linux : What is Linux, Linux's root in Unix, Common Linux Features, advantage of Linux, Overview of Unix and Linux architectures, Linux files system, hardware requirements for Linux, Linux Internals: Introduction, Process amangement, System Calls.

UNIT-II

Linux File system : Logging in, getting familiar with Linux desktop, shell interface, understanding Linux Shell, Types of Text Editors, using vi editor, prompt character, correcting typing errors, simple shell commands-date, cal, who, tty, uname, passwd, bc, script, echo, logging out, Environment variables, wild card characters, *, ?, absolute and relative path, listing files and directories commands, navigating file system- pwd, cd, mkdir, rmdir, ls, pr, Handling ordinary files- cat, cp, mv, wc, rm, comm.., amp, diff, Basic files attributes – file permissions, changing permissions.

UNIT-III

Processes and filters : Simple filters- head, tail, cut, paste, sort, uniq, tr, Regular expression Grep utility, Shell command line, redirection, pipeline, spilt output, tee, and process- System Processes, internal and external commands, background process, premature termination of process, process priorities, process scheduling – (at, batch), nohup command

UNIT-IV

Shell Programming : Interactive scripts, Shell variables, assigning values to variables, positional parameters, command line arguments, arithmetic in shell script, exit status of a command, sleep and wait, script termination.

UNIT-V

Decision taking- if else, nested if, file tests, string tests, case control structure. Loop control structure-while, for, IFS, break, continue, $* and $@, logical operators && and || executing script, Debugging a script, Debugging a script, executing multiple scripts

System Administration : Configuration of Linux, Installation of Linux, Connecting to remote machines-ftp, telnet, Adding and removing users.

SYLLABUS 2013-14
BCA-III YEAR

Duration : 3Hrs.   **BCA-304**   **Marks (Max. 100, Min. 35)**

MANAGEMENT INFORMATION SYSTEM

Introduction System and Basic System: Concept, type of systems, The System Approach, Information System: Definition, Need and types of Information System, Information System in Organisation, Management, Strategy, role of Information System in Organisation, Business Strategy, Decision Making

Management Information System: Meaning and Characteristics, Major types of Management Information System, Information Reporting System (IRS), Decision Support System (DSS), Executive Information System (EIS), Knowledge Based System (KBS), Group Discussion Support System (GDSS), Characteristics of GDSS, Relationship of Management Information System and Operation Information System, Requirements of a successful MIS, Limitation of MIS, Structure of MIS.

Levels of MIS, Planning, Forecasting, Control, Modeling, Computing, Database Administration, Implementation of MIS for Decision Making, Simon's Model of decision Making, Programmed Vs Non-Programmed Decisions.

Planning and Organizing with MIS: Information Planning, need of information for an organization, Steps in process of Strategic Planning, Managing international information system : The growth of international information system, Organising international information system managing global system.

Implementation, Evaluation and Maintenance of the MIS: Implementation of MIS, steps and methods, Documentation, Evaluation of MIS, structure for evaluation, Maintenance of MIS.

Information technology Infrastructure: Computer hardware & software, system software, Categories of computer and Computer system, Information technology infrastructure, Storage input and output, telecommunication and Networks.

SYLLABUS 2013-14
BCA-III YEAR

Duration : 3Hrs.   **BCA-305 & 306**   **Marks (Max. 100, Min. 35)**

PRACTICAL I : VISUAL PROGRAMMING.

Experiments based on the paper BCA 302.

PRACTICAL II : LINUX.

Experiments based on the paper BCA 303.

SYLLABUS 2013-14
BCA-III YEAR

Duration : 3Hrs.   **BCA-307**   **Marks (Max. 100, Min. 35)**

PROJECT

Students are required to complete Project allotted by the department, which will include the system design and implementation, (carrying equal weight-age of the total marks). Presentation / Seminar / viva will be based on the project work carried during the semester.

Report Format

Arrangement of Contents : The sequence in which the project report material should be arranged and bound should be as follows:

A. Cover Page & Title Page

B. Abstract

C. Conclusion

D. Table of Contents

E. List of Tables

F. List of Figures

G. Scope of Project

    a.   Chapters

    b.   Feasibility Study

    c.   Project Scheduling

    d.   Requirement Analysis

    e.   Application Design

        i.   Design Overview

        ii.   Design Description

            1.   Flow Chart

            2.   Data Flow Diagram

            3.   Control Flow Diagram

            4.   UML Diagram

        iii.   Database Design

            1.   ER Diagram

            2.   Table – Relationship Diagram

        iv.   Test Plans

            1.   Test case Analysis

        v.   Implementation

        vi.   Testing (tools if any)

H. Future Works
I. Appendices
J. References

NOTE: The table and figures shall be introduced in the appropriate places.

SYLLABUS 2013-14
BCA-III YEAR

Duration : 3Hrs.   **BCA-307 Contd.**   **Marks (Max. 100, Min. 35)**

Page Dimension & Binding Specifications : The dimension of the project report should be in A4 size. The project report should be bound using flexible cover of the thick plastic paper (Spiral Binding). Report should use Font Arial/ Times New Roman; Font Size: 14 (For Headings Bold) and 12 (For Paragraphs). Document can have maximum of 1.5 lines spacing.

COVER / FRONT PAGE FORMAT

TITLE OF PROJECT

<Font Copperplate Gothic Light><Font Size 18><1.5 line spacing>

A PROJECT REPORT

<Font Copperplate Gothic Light><Font Size 14>

Submitted by

<Font Copperplate Gothic Light><Font Size 14><Italic>

NAME OF THE CANDIDATE(S)

<Font Copperplate Gothic Light><Font Size 16>

IN

Course Name

<Font Copperplate Gothic Light><Font Size 14>