CURRICULUM FOR BACHELOR OF COMPUTER APPLICATIONS (BCA) DEGREE

4 Year / 160 Credit Hours
Minimum Qualifications Required: High School/WASSCE with 6 Credits

CORE SUBJECTS FOR BACHELOR OF COMPUTER APPLICATIONS (BCA)

SUBJECT CODE: **IT 101**
SUBJECT NAME: FUNDAMENTALS OF COMPUTERS & INFORMATION TECHNOLOGY 1
CREDIT HOURS: **3**

FUNDAMENTALS OF COMPUTERS AND INFORMATION TECHNOLOGY 1
UNIT – I
Brief history of development of computers, Computer system concepts, Computer system characteristics, Capabilities and limitations, Types of computers Generations of computers, Personal Computer (PCs) – evolution of PCs, configurations of PCs- Pentium and Newer, PCs specifications and main characteristics. Basic components of a computer system - Control unit, ALU, Input/Output functions and characteristics, memory - RAM, ROM, EPROM, PROM and other types of memory.
UNIT – II
Input/Output & Storage Units-:Keyboard, Mouse, Trackball, Joystick, Digitizing tablet, Scanners, Digital Camera, MICR, OCR, OMR, Bar-code Reader, Voice Recognition, Light pen, Touch Screen, Monitors - characteristics and types of monitor -Digital, Analog, Size, Resolution, Refresh Rate, Interlaced / Non Interlaced, Dot Pitch, Video Standard - VGA, SVGA, XGA etc, Printers& types - Daisy wheel, Dot Matrix, Inkjet, Laser, Line Printer, Plotter, Sound Card and Speakers, Storage fundamentals - Primary Vs Secondary Data Storage and Retrieval methods - Sequential, Direct and Index Sequential, SIMM, Various Storage Devices - Magnetic Tape, Magnetic Disks, Cartridge Tape, Hard Disk Drives, Floppy Disks (Winchester Disk), Optical Disks, CD, VCD, CD-R, CD-RW, Zip Drive, flash drives Video Disk , Blue Ray Disc, SD/MMC Memory cards, Physical structure of floppy & hard disk, drive naming conventions in PC. DVD, DVD-RW.

UNIT – III

Software and its Need, Types of Software - System software, Application software, System Software - Operating System, Utility Program, Programming languages, Assemblers, Compilers and Interpreter, Introduction to operating system for PCs-DOS Windows, Linux, File Allocation Table (FAT & FAT 32), files & directory structure and its naming rules, booting process details of DOS and Windows, DOS system files Programming languages- Machine, Assembly, High Level, 4GL, their merits and demerits, Application Software and its types - Word-processing, Spreadsheet, Presentation Graphics, Data Base Management Software, characteristics, uses, examples and area of applications of each of them, Virus working principles, Types of viruses, virus detection and prevention, viruses on network.

Practical exposure shall be given for DOS commands.

SUBJECT CODE: **IT 201**
SUBJECT NAME: FUNDAMENTALS OF COMPUTERS & INFORMATION TECHNOLOGY 2
CREDIT HOURS: **3**

FUNDAMENTALS OF COMPUTERS AND INFORMATION TECHNOLOGY 2
UNIT – I

Use of communication and IT , Communication Process, Communication types- Simplex, Half Duplex, Full Duplex, Communication Protocols, Communication Channels - Twisted, Coaxial, Fiber Optic, Serial and Parallel Communication, Modem - Working and characteristics, Types of network Connections - Dialup, Leased Lines, ISDN, DSL, RF, Broad band ,Types of Network - LAN, WAN, MAN ,Internet, VPN etc., Topologies of LAN - Ring, Bus, Star, Mesh and Tree topologies, Components of LAN -Media, NIC, NOS, Bridges, HUB, Routers, Repeater and Gateways. Internet-Evolution, World Wide Web Internet Services, Convergence of technologies.

UNIT-II

Management information system - Introduction, Characteristics, Needs, Different views of MIS, Designing, Placement of MIS, Pitfalls in Designing an MIS, Computer based MIS – Advantages & Disadvantages.
Computer Applications in Business-Need and Scope, Computer Applications in Project Management, Computer in Personnel Administration, Information System for Accounting-Cost and Budgetary Control, Marketing and Manufacturing, Computer Applications in Materials Management, Insurance and Stock-broking, Production planning and Control, Purchasing, Banking, Credit and Collection, Warehousing.
Use of computers in common public services and e-governance.

TEXT & REFERENCE BOOKS :

AIUWA BCA Curriculum

*⬜ Anurag Seetha, **"Introduction to Computers and Information Technology"**, Ram Prasad & Sons, Bhopal.*
*⬜ Alexis Leon & Mathews Leon, **" Fundamentals of Information technology "**, Vikas Publishing*

SUBJECT CODE: IT 106
SUBJECT NAME: PROGRAMMING METHODOLOGY AND C PROGRAMMING
CREDIT HOURS: 3

PROGRAMMING METHODOLOGY AND C PROGRAMMING
UNIT – I
Program Concept, Characteristics of Programming, Various stages in Program Development Programming aids Algorithms, Flow Charts - Symbols, Rules for making Flow chart, Programming Techniques – Top down, Bottom up, Modular, Structured - Features, Merits, Demerits, and their Comparative study. Programming Logic- Simple, Branching, Looping, Recursion, Cohesion & Coupling, Programming Testing & Debugging & their Tools .
UNIT – II
Introduction to C language, C language standards features of C, Structure of C program. Introduction to C compilers, Creating and compiling C Programs, IDE features of Turbo C compiler, Command line options to compile C program in TC.
Keywords, Identifiers, Variables, constants, Scope and life of variables - local and global variable. Data types, Expressions, Operators : Arithmetic, Logical, Relational, Conditional and Bit wise Operators. Precedence and Associativity of Operators, Type conversion.
Basic input/output library functions: Single character input/output i.e. getch(), getchar(). getche(), putchar(). Formatted input/output i.e. printf() and scanf().
Library functions : Mathematical & Character functions.
UNIT – III
Declaration statement, conditional statement : If statement, If.....Else statement, Nesting of If....Else Statement, else if ladder, The ?: operator, Switch statement. Iteration statements: for loop, while loop, do-while loop. Jump statements: break, continue, goto exit().

ARRAYS : concept of Single and Multi Dimensional arrays, Array declaration and initialization of arrays strings : declaration, initialization, functions.

UNIT – IV

The need of C functions, User defined and library function, prototype of functions, prototype of main() function, Calling of functions, Function arguments, argument passing: call by value and call by reference, Return values. Nesting of function, Recursion, Array as function argument, Command line arguments. Storage class specifier - auto, extern, static, register.

UNIT – V

Defining structure, Declaration of structure variable, typedef, Accessing structure members, Nested structures, Array of structure, Structure assignment, Structure as function argument, Function that return structure, Union.

Concept of debugging. Finding Errors in the programs, error codes and their meanings, Various debugging options in Turbo C compiler. (Debug and Options Menu of the TCC IDE)

TEXTS & REFERENCE BOOKS :

E. Balaguruswamy, **"Programming In C "**, TMH Publications

Gottfried, Schaums Outline Series, **" Programming With C "**, TMH Publications

Peter Juliff, **" program design "**, PHI Publications

SUBJECT CODE: IT 111
SUBJECT NAME: PC PACKAGES
CREDIT HOURS: 3

PC PACKAGES

Theory and Practical of this program is based on at least Windows XP and MS Office XP Version, newer versions can also be used for performing practical in Lab.

UNIT – I

MS Windows: Introduction to M.S. Windows; Features of Windows; Various versions of Windows & its use; Working with Windows; My Computer & Recycle bin ; Desktop, Icons and Windows Explorer; Screen description & working styles of Windows; Dialog Boxes & Toolbars; Working with Files & Folders; simple operations like copy,delet,moveing of files and folders from one drive to another, Shortcuts & Autostarts; Accessories and Windows Settings using Control Panel- setting common devices using control panel, modem, printers, audio, network, fonts, creating users, internet settings, Start button & Program lists; Installing and Uninstalling new Hardware & Software program on your computer.

UNIT – II

Office Packages-Office activates and their software requirements, Word-processing, Spreadsheet, Presentation graphics, Database, introduction and comparison of various office suites like MSOffice, LotusOffice, StarOffice, OpenOffice etc**.**

MS Word Basics: Introduction to MS Office; Introduction to MS-Word; Features & area of use. Working with MS Word.; Menus & Commands; Toolbars & Buttons; Shortcut Menus, Wizards & Templates; Creating a New Document; Different Page Views and layouts; Applying various Text Enhancements; Working with – Styles, Text Attributes; Paragraph and Page Formatting; Text

Editing using various features ; Bullets, Numbering, Auto formatting, Printing & various print options

UNIT-III

Advanced Features of MS-Word: Spell Check, Thesaurus, Find & Replace; Headers & Footers ; Inserting – Page Numbers, Pictures, Files, Autotexts, Symbols etc.; Working with Columns, Tabs & Indents; Creation & Working with Tables including conversion to and from text; Margins & Space management in Document; Adding References and Graphics; Mail Merge, Envelops & Mailing Labels. Importing and exporting to and from various formats.

UNIT – IV

MS Excel: Introduction and area of use; Working with MS Excel.; concepts of Workbook & Worksheets; Using Wizards; Various Data Types; Using different features with Data, Cell and Texts; Inserting, Removing & Resizing of Columns & Rows; Working with Data & Ranges; Different Views of Worksheets; Column Freezing, Labels, Hiding, Splitting etc.; Using different features with Data and Text; Use of Formulas, Calculations & Functions; Cell Formatting including Borders & Shading; Working with Different Chart Types; Printing of Workbook & Worksheets with various options.

UNIT – V

MS PowerPoint: Introduction & area of use; Working with MS PowerPoint; Creating a New Presentation; Working with Presentation; Using Wizards; Slides & its different views; Inserting, Deleting and Copying of Slides; Working with Notes, Handouts, Columns & Lists; Adding Graphics, Sounds and Movies to a Slide; Working with PowerPoint Objects; Designing & Presentation of a Slide Show; Printing Presentations, Notes, Handouts with print options.

Outlook Express: Features and uses, Configuring and using Outlook Express for accessing e-mails in office.

Text & Reference Books:
 Windows XP Complete Reference. BPB Publications
 MS Office XP complete BPB publication
 MS Windows XP Home edition complete, BPB Publications

SUBJECT CODE: IT 221
SUBJECT NAME: ACCOUNTING AND FINANCIAL MANAGEMENT
CREDIT HOURS: 3

ACCOUNTING AND FINANCIAL MANAGEMENT
UNIT-I
The basic Financial Accounts, types of accounts, Rules of Entries of transaction, Journal.
Cash Book – Types, Format of Cash book, Balancing of Cash Book, Subsidiary books – Purchase, Sales, Purchase return and sales return.
Ledger, posting of entries.
UNIT – II
Trial Balance, Rectification of errors, adjustment entries. Depreciation and Inflation.
UNIT – III
Principles of Cost Accounting, Valuation of Stocks, Allocation of Overheads, Methods of material issues.
UNIT – IV
Pay roll department, Preparation of Pay roll, Preparation of wage record, Methods of payments of wages, overview of computerized method for payroll preparation.
UNIT – V
Inventory account and store record, inventory or stock control and cost accounting, Department demand and supply method of stock control.
Classification and condition of material Report on material handling.
Overview of computerized accounting process – Introduction to accounting system software, their features and some basic operations.

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TEXT & REFERENCE BOOKS
Mazda, ***Engineering Management***, *Addisen Wesley*
Dr. S P Gupta, ***Management Accounting***

SUBJECT CODE: **ENG 101**
SUBJECT NAME: COMMUNICATIVE ENGLISH –I
CREDIT HOURS: **3**

COMMUNICATIVE ENGLISH–I
Objective: This program is designed on a predominantly communicative or interactive approach to the learning of English. This approach is based on the belief that language is not a body of knowledge to be learnt but a skill to be acquired. Student acquires the ability to use the language fluently effectively, correctly, confidently and naturally in real life situations that is to say, they imbibe and internalize the language. However, the approach is to encourage the learners to formulate and express their ideas and offer ample scope for creativity. The approach has been aimed at an integrator development of the four basic skills - Listening, speaking, reading and writing.
FUNCTIONAL GRAMMAR
UNIT–I
⬛ Sentences : Simple, Compound, Complex, Assertive, Interrogative, Imperative, Exclamatory.
⬛ Parts of Speech
⬛ Adverb and Adjective
⬛ Articles : Usage of 'A', 'AN', 'THE'
⬛ Preposition : Position of Prepositions, Place Relations Time Relations and other relations.
⬛ Common Errors
UNIT–II
Functional Grammar :

▢ Tenses : Simple Present, Progressive Perfect, Present Perfect Progressive along-with Past Tense and indications of futurity
▢ Reported speech
▢ Modals : Will, Shall Should, Would and others
▢ Voice : Active and Passive

UNIT III
▢ Introduction – Ourselves and others
▢ Paragraph writing
▢ Prece Writing,
▢ Job Applications, Curriculum Vitae
▢ Comprehension Written

UNIT-IV
Vocabulary :
▢ Words Commonly Misspelt
▢ Word formation by prefix suffix
▢ Synonyms and antonyms

UNIT-V
Literature

PRACTICAL GROUP

SUBJECT CODE: **IT 151**
SUBJECT NAME: INTERNAL ASSESSMENT
CREDIT HOURS: **3**

SUBJECT CODE: **IT 152**
SUBJECT NAME: COMPUTER LAB I:OPERATING SYSTEMS, WORD, EXCEL & POWERPOINT
CREDIT HOURS: **3**

SUBJECT CODE: **IT 153**
SUBJECT NAME: COMPUTER LAB I:OPERATING SYSTEMS, WORD, EXCEL & POWERPOINT
CREDIT HOURS: **3**

SUBJECT CODE: **IT 253**
SUBJECT NAME: COMPUTER LAB II: C PROGRAMMING
CREDIT HOURS: **3**

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SUBJECT CODE: **PPD 118**
SUBJECT NAME: PROFESSIONAL PERSONALITY DEVELOPMENT 1
CREDIT HOURS: **3**

PROFESSIONAL PERSONALITY DEVELOPMENT- I
UNIT-1: ORIENTATION
Attitude Building
Optimism
General Awareness
UNIT-2: UNDERSTANDING ENGLISH LANGUAGE
Phonetics and Pronunciation
Most Common Mistakes
Usable Grammar
Hesitation Removal
UNIT-3: APPLICATIONS OF ENGLISH LANGUAGE
Fluency Development
Conversation in English
Thought Generation Techniques
Extempore
Written Communication
Preparation of resume, Biodata & CV
UNIT-4: COMPREHENSIVE COMMUNICATION
Concept and Process of Communication

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Type of Communication
Barriers of Communications
Importance of Listening
Role Play
Presentation of Self, Goals & Achievements
English Communication Practice
UNIT-5: PROFESSIONALISM
Understanding Professionalism
Professional Etiquettes
Relationship Management
Professional Communication

SUBJECT CODE: IT 207
SUBJECT NAME: DIGITAL ELECTRONICS
CREDIT HOURS: 3

DIGITAL ELECTRONICS
UNIT – I
Data types and Number systems, Binary number system, Octal & Hexa-decimal number system,1's & 2's complement, Binary Fixed- Point Representation, Arithmetic operation on Binary numbers, Overflow & underflow, Floating Point Representation, Codes, ASCII, EBCDIC codes, Gray code, Excess-3 & BCD, Error detection & correcting codes
UNIT – II
Logic Gates, AND, OR, NOT GATES and their Truth tables, NOR, NAND & XOR gates, Boolean Algebra, Basic Boolean Law's, Demorgan's theorem, MAP Simplification, Minimization techniques, K -Map, Sum of Product & Product of Sum
UNIT – III
Combinational & Sequential circuits, Half Adder & Full Adder, Full subtractor, Flip-flops - RS, D, JK & T Flip-flops, Shift Registers, RAM and ROM, Multiplexer, Demultiplexer, Encoder, Decoder, Idea about Arithmetic Circuits, Program Control, Instruction Sequencing
UNIT – IV
I/O Interface, Properties of simple I/O devices and their controller, Isolated versus memory-mapped I/O, Modes of Data transfer, Synchronous & Asynchronous Data transfer, Handshaking, Asynchronous serial transfer, I/O Processor
UNIT – V

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Auxiliary memory, Magnetic Drum, Disk & Tape, Semi-conductor memories, Memory Hierarchy, Associative Memory, Virtual Memory, Address space & Memory Space, Address Mapping, Page table, Page Replacement, Cache Memory, Hit Ratio, Mapping Techniques, Writing into Cache

TEXT & REFERENCE BOOKS :
BARTEE, **"Digital Computer Fundamentals "** TMH Publication ISBN 0-07-003899-6
MALVINO, **" Digital Computer Electronics "** TMH Publication ISBN 0-07-462235-8
MORRIS MANO, **"Computer System Architecture "** PHI Publication ISBN 81-203-0417-9

SUBJECT CODE: IT 304
SUBJECT NAME: ADVANCED PROGRAMMING IN C WITH LINUX
CREDIT HOURS: 3

ADVANCED PROGRAMMING IN C WITH LINUX
ALL THE PRACTICALS IN THIS PAPER MUST BE CARRIED OUT ON LINUX SYSTEM USING LATEST GNU C COMPILER. SOME BASIC LINUX COMMANDS ARE TAUGHT THAT ARE USEFUL TO USE THE LINUX SYSTEM AND GNU C COMPILER.
UNIT–I
Introduction and features of GNU C compiler. ANSI standards support in gcc. Feature comparison with Turbo C compiler. Advantages of using C with Linux, Compilation of C program using gcc. gcc command line options.
Basics of pointers , pointers operators, pointer arithmetic, Pointers and function, Array of pointers, Pointer and strings, Pointer to structure, Pointers within structure, Introduction – Static and Dynamic memory allocation, The process of Dynamic memory allocation, DMA functions Malloc() function, Sizeof() operator, Function free(), Function realloc()
UNIT-II
Introduction – File handling, File structure, File handling function, File types, Streams, Text, Binary, File system basics, The file pointer, Opening a file, Closing a file, Writing a character, Reading a character, Using fopen(), getc(), putc(), and fclose(), Using feof(), Working with string fputs() and fgets(), Standard streams in C, Flushing astream, Using fread() and fwrite(), Direct access file, fseek() and random access I/O, fprintf() and fscanf(), getting file name as Command line arguments.

UNIT-III

The preprocessor, #define, defining functions like macros, #error, #include, creating header files, include user defined header files. conditional compilation directives i.e. #if, #else, #elif and #ifdef & undef, using defined, #line, #pragma, the # & ## preprocessor operator.
Error handling in C: types of errors, handling errors, debugging tools.

UNIT-IV

Graphics on your PC: Graphics and Text mode, Video Adapter, Initialize Graphics Mode and resolution, header file graphics.h. Functions used In Graphics - Drawing a Point on Screen, Drawing – lines, rectangle, circles, arcs, polygon. Functions to fill colors. Display Text in Graphics mode, outtext(), outtextxy(), justifying text.

UNIT-V

Working with ROM BIOS routines, Registers for passing arguments to BIOS ROUTINE. Function int86(), finding installed memory size and clearing screen using int86(). Working with mouse and keyboard.
Working with DOS routines, function intdos(), Renaming file, Deleting file, Create directory, Delete directory using intdos().

TEXT AND REFERENCE BOOKS:

 Herbert shield , **"Complete Reference C"**

 R.S Salaria, "**Application programming in C**"

 Bryan Pfaffenberger**, "Linux Command–Instant Reference"** – BPB Publications(ISBN 81 − 7656-319-6).

 "Linux Complete"– BPB Publications

 Gnu C Compiler Manual Available At http://gcc.gnu.org/onlinedocs/gcc-4.0.0/gcc/

 http://www.crasseux.com/books/ctutorial/index.html

SUBJECT CODE: **IT 402**
SUBJECT NAME: DATA BASE MANAGEMENT SYSTEMS
CREDIT HOURS: **3**

DATABASE MANAGEMENT SYSTEMS
UNIT-I
Operational data, Purpose of database system, Views of data, Data models: Relational, Network, Hierarchical, Instances & Schemes, Data Dictionary, Types of Database languages : DDL, DML, Structures of a DBMS, Advantages & Disadvantages of a DBMS,3-level Architecture Proposal : External, Conceptual & Internal Levels, Entity Relationship Model as a tool of conceptual design : Entities & Entity set, Relationship & Relationship set, Attributes, Mapping Constraints, Keys, Entity-Relationship diagram (E-R diagram) : Strong & weak entities, Generalization, Specialization, Aggregation, Reducing ER diagram to tables

UNIT-II
Set theory concepts and fundamentals: Relations, Domains, Attributes, Tuple, Concepts of Keys: Candidate key, Primary Key, Alternate Key, Super Key, Foreign Key, Fundamental integrity rules: Entity integrity, Referential integrity, Extension & Intention
Functional Dependencies, Good & Bad Decomposition, Anomalies as a database: A consequences of bad design, Universal Relation, Normalization: 1NF, 2NF, 3NF, BCNF, 4NF 5NF.

UNIT-III
Relational Algebra: Select, Project, Cross product, Different types of joins i.e. theta join, equi-join, natural join, outer join, set operations .

Structured query language(SQL),Using MS Access, Implementing SQL Functions, Integrity, Indexing, View Using MS Access.
DBA – Role, Functionality and Importance.
UNIT-IV
Failure Classification, The Storage Hierarchy, Transaction Model, Storage and File Structure, RAID, Storage Access, File Organization, Organization of Records in File, Data Dictionary storage.
UNIT-V
Database functionality and Importance.
Database system architectures-centralized system, client server system, parallel system, distributed system. Overview Database on Web- concepts of ODBC, DSN.

TEXT & REFERENCE BOOKS :
 "Database Management System" *bY Leon & Leon, Vikas Publications*
 "Database System Concepts" *by Henry F.Korth & Abraham Silberschatz .*
 "an introduction to database system" *by Bipin C.Desai*
 "An Introduction To Database System" *by C.J.Date*

SUBJECT CODE: **MANP 101**
SUBJECT NAME: COMPUTER LAB I:OPERATING SYSTEMS, WORD, EXCEL & POWERPOINT
CREDIT HOURS: **3**

PRINCIPLES OF MANAGEMENT
UNIT–I
Management basics – What is management, the history of management, types of manager, manager qualities. Management responsibilities, management tasks and functions.
The business environment – defining the organization, organization structure, the quality organization, organizational changes, Centralisation and Decentralisation, managing changes. Management obligations, social and professional responsibilities, government regulations.
UNIT–II
Strategy formulation – the elements of strategy, the strategy formulation process, alliances and acquisitions, strategy formulation tools and techniques, plan implementation.
Decision making – the nature of management decision, the decision making process, decision making techniques.
Information presentation and reporting - Principle, Type of Reports, Presentation on Modes, Function reporting system, Information and its uses, Characteristics of information, flow of information.
UNIT–III
Management information system (MIS) and its uses, Computer based MIS – Advantages & Disadvantages.

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Brief introduction to project planning and management and its tools/techniques-Gantt chart, PERT/CPM.
Human Resources management: Concepts & functions, Job analysis and role description.
UNIT–IV
Management skills
Leadership and motivation – The nature of leadership, leadership theories, delegation, motivation and motivation theories, need of motivation, motivation techniques.
Team building – Defining and effective team, selecting team members, building teams, training and development.
Effective communication – The communication process, presentation skills. Tools and techniques.
UNIT–V
Time management – The importance of time, characteristics of management tasks, determining time elements, time management techniques.
Entrepreneurship – Entrepreneur and its role, how to become an entrepreneur, essentials steps to become an entrepreneur, EDP training.

TEXT & REFERENCE BOOKS :
 Mazda, **Engineering Management**, Addisen Wesley
 Koontz H, **"Essentials Of Management",** TMH Publications.

SUBJECT CODE: **ENG 201**
SUBJECT NAME: COMMUNICATIVE ENGLISH II
CREDIT HOURS: **3**

COMMUNICATIVE ENGLISH-II
OBJECTIVES:
Linguistic competence is essential to understand the basic concepts of various subjects. The program is designed with an aim to make learners proficient and efficient in the use of English Language. A sincere effort is being made to expose the learners to the four basic linguistic skills
- Listening, Writing, Speaking and Reading
UNIT-I
⬚ Nouns: Countable, Uncountable
⬚ Pronoun: Personal, Relative and others
⬚ Linking Devices
⬚ Subject verb agreement
⬚ Common errors
UNIT-II
⬚ Adverbs and adverb phrases, Comparisons and Intensification
⬚ Adjectives and Adjective Phrases
⬚ Clauses: Coordinate, subordinate, relative adverbs.
UNIT-III
Synonyms Antonyms & Homonyms – Word Power

Spelling rules
 Word building
 Common errors
UNIT-IV
 Developing ability of questions and answers
 Body language and its use in speaking
 Technical reports
 Group Discussion
 Interview skills
 E-mails and text messages composing

UNIT-V
Literature from prescribed Texts

PRACTICAL GROUP
SUBJECT CODE: IT 251
SUBJECT NAME: INTERNAL ASSESSMENT
CREDIT HOURS: 3

SUBJECT CODE: IT 352
SUBJECT NAME: COMPUTER LAB III: 'C' ON LINUX
CREDIT HOURS: 3

SUBJECT CODE: IT 355
SUBJECT NAME: COMPUTER LAB IV: MS-ACCESS
CREDIT HOURS: 3

SUBJECT CODE: **PPD 201**
SUBJECT NAME: PROFESSIONAL PERSONALITY DEVELOPMENT - II
CREDIT HOURS: **3**

PROFESSIONAL PERSONALITY DEVELOPMENT - II
UNIT-1: ORIENTATION
Concept of Motivation
Types of Motivation
People Skills
General Awareness
UNIT-2: MEMORY MANAGEMENT
Memory and Retention Techniques
Mind Mapping
Reading Skills
Listening Skills
Revision Techniques
Examination Skills
UNIT-3: COMMUNICATION EFFECTIVENESS
Fluency Enhancement
Removal of barriers to communication
Group Discussion
Role Play

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Anchoring
Voice Modulation Management
UNIT-4: COMPREHENSIVE COMMUNICATION
Principles of Communication
Art of effective Public Speaking
Written Communication Skills
Principles of Effective Writing
Reading Habit Development
Oral Presentation Skills
UNIT-5: PRESENTATION SKILLS
Techniques of Presentation
Methods of preparing Presentation
Removal of stage fear
Tools of Presentation (Transparencies, Slides & Audio-Visual Tools)
Project work

SUBJECT CODE: **IT 190**
SUBJECT NAME: ASSIGNMENT
CREDIT HOURS: **4**

SUBJECT CODE: **IT 431**
SUBJECT NAME: **OBJECT ORIENTED PROGRAMMING WITH C++**
CREDIT HOURS: **3**

OBJECT ORIENTED PROGRAMMING WITH C++
UNIT-I
Overview of C++ : Object oriented programming, Concepts, Advantages, Usage. C++
Environment: Program development environment, the language and the C++ language
standards. Introduction to various C++ compilers, C++ standard libraries, Prototype of main()
function, Data types.
Creating and compiling C++ Programs using IDE and through command line, IDE features for
compiling, debugging, tracing and testing the C++ program in Turbo C++/Borland C++/MicroSoft
VC++/GNU C++ compiler.
Classes & Objects : Classes, Structure & classes, Union & Classes, Friend function, Friend classes,
Inline function, Scope resolution operator, Static class members, Static data member, Static
member function, Passing objects to function, Returning objects, Object assignment.
UNIT-II

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Array, Pointers References & The Dynamic Allocation operators : Array of objects, Pointers to object, Type checking C++ pointers, The This pointer, Pointer to derived types, Pointer to class members, References: Reference parameter, Passing references to objects, Returning reference, Independent reference, C++ 's dynamic allocation operators, Initializing allocated memory, Allocating Array, Allocating objects.

Constructor & Destructor : Introduction, Constructor, Parameterized constructor, Multiple constructor in a class, Constructor with default argument, Copy constructor, Default Argument, Destructor.

UNIT-III

Function & operator overloading : Function overloading, Overloading constructor function finding the address of an overloaded function, Operator Overloading: Creating a member operator function, Creating Prefix & Postfix forms of the increment & decrement operation, Overloading the shorthand operation (i.e. +=,-= etc), Operator overloading restrictions, Operator overloading using friend function, Overloading New & Delete, Overloading some special operators, Overloading [ ], ( ), -, comma operator, Overloading << .

UNIT-IV

Inheritance : Base class Access control, Protected members, Protected base class inheritance, Inheriting multiple base classes, Constructors, destructors & Inheritance, When constructor & destructor function are executed, Passing parameters to base class constructors, Granting access, Virtual base classes .

Virtual functions & Polymorphism : Virtual function, Pure Virtual functions, Early Vs. late binding

UNIT-V

The C++ I/O system basics : C++ streams, The basic stream classes: C++ predefined streams, Formatted I/O: Formatting using the ios members, Setting the format flags, Clearing format flags, An overloaded form of setf ( ), Examining the formatted flags, Setting all flags, Using width() precision() and fill(), Using manipulators to format I/O, Creating your own manipulators.

TEXT & REFERENCE BOOKS :

▢ *Herbert Schildt**, "C++ The Complete Reference "** - TMH Publication ISBN 0-07-463880-7*

▢ *M Kumar **"Programming In C++"**, TMH Publications*

▢ *R. Lafore, **"Object Oriented Programming C++ "***

SUBJECT CODE: **IT 436**
SUBJECT NAME: **INTERNET & E-COMMERCE**
CREDIT HOURS: **3**

INTERNET & E-COMMERCE
UNIT–I
Internet: Evolution, Concepts, Internet Vs Intranet, Growth of Internet, ISP, ISP in India, Types of connectivity - Dial-up, Leased line, DSL, Broadband, RF, VSAT etc., Methods of sharing of Internet connection, Use of Proxy server.
Internet Services – USENET, GOPHER, WAIS, ARCHIE and VERONICA, IRC
WORLD WIDE WEB (WWW) - History, Working, Web Browsers, Its functions, URLs, web sites, Domain names, Portals. Concept of Search Engines, Search engines types, searching the Web, Web Servers, TCP/IP and others main protocols used on the Web.
E-Mail: Concepts, POP and WEB Based E-mail, merits, address, Basics of Sending & Receiving, E-mail Protocols, Mailing List, Free E-mail services, e-mail servers and e-mail clients programs.
UNIT–II
Concepts of Hypertext, HTML introduction, features, uses & versions Using various HTML tags, Elements of HTML syntax, Head & Body Sections, , Inserting texts, Text alignment, Using images in pages, Hyperlinks – text and images, bookmarks, Backgrounds and Color controls, creating and using Tables in HTML, and presentation, Use of font size & Attributes, List types and its tags.

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Cascading Style sheets: defining and using simple CSS.

UNIT-III

Introduction to WYSIWYG Design tools for HTML, Overview of MS FrontPage, Macromedia Dream weaver, and other popular HTML editors, designing web sites using MS FrontPage (using at least FrontPage 2000)

Use of Frames and Forms in web pages, Image editors, Issues in Web site creations & Maintenance,

Web Hosting and publishing Concepts, Hosting considerations, Choosing Web servers – Linux Vs Windows Web servers, Choosing Domain names, Domain name Registration, Obtaining space on Server for Web site,

FTP software for upload web site. Add your website on search engines.

UNIT–IV

Javascript Overview, Javascript and the WWW, Javascript vs. VBScript, Javascript vs. Java, Javascript versions, Script element,.

Functions: Functions introduction, Calling functions, Javascript Comments, Variables: Variables overview, declaring variables, Types of variables, Casting variables, Alert box , Prompt & confirm.

Expressions: Arithmetic operators, Assignment operators, Logical operators, Expressions and precedence, Statements: If statement, For statement, While statement, Break/Continue Creating arrays/event handlers, JavaScript Object model, Object and Events in JavaScript – OnClick, On MouseOver, On Focus, OnChange, OnLoad etc. Getting data with forms.

UNIT–V

E - Commerce An introductions, Concepts, Advantages and disadvantages, Technology in E-Commerce, Internet & E-business, Applications, Feasibility & various constraints. E-transition challenges for Indian corporate, the Information Technology Act 2000 and its highlights related to e-commerce.

Electronic Payment Systems: Introduction, Types of Electronic Payment Systems, Digital Token-Based Electronic Payment Systems, Smart Cards and Electronic Payment Systems, Credit Card-Based Electronic Payment Systems, Risk and Electronic Payment Systems.

E-security – Security on the internet, network and web site risks for e-business, use of firewalls, secure physical infrastructure.

TEXT & REFERENCE BOOKS :

 Learn HTML in a weekend by Steven E. Callihan, PHI

 Using HTML By Lee Anne Phillips, PHI

 SAMS Teach Yourself Javascript in 24 Hrs. By Michael Moncur, TechMedia

SUBJECT CODE: **IT 439**
SUBJECT NAME: **DATA STRUCTURE**
CREDIT HOURS: **3**

DATA STRUCTURES
UNIT–I
The concept of data structure, Abstract data type, Concept of list & array Introduction to stack, Stack as an abstract data type, primitive operation on stack, Stacks application: Infix, post fix, Prefix and Recursion, Multiple Stack.
Introduction to queues, Primitive Operations on the Queues, Queue as an abstract data type, Circular queue, DE queue, Priority queue, Applications of queue
UNIT–II
Introduction to the Linked List, Basic operations on linked list, Stacks and queues linked list, Header nodes, Doubly Linked List, Circular Linked List, Stacks & Queues as a Circular Linked List, Application of Linked List.
UNIT–III
TREES - Basic Terminology, Binary Trees, Tree Representations using Array & Linked List, Basic operation on Binary tree, Traversal of binary trees:- In order, Preorder & post order, Application of Binary tree, Threaded binary tree, B-tree & Height balanced tree, Binary tree representation of trees.
UNIT–IV

AIUWA BCA Curriculum

Analysis of algorithm, complexity using big 'O' notation. Searching: linear search, Binary search, their comparison.
Sorting: Insertion sort, Selection sort, Quick sort, Bubble sort, Heap sort, Comparison of sorting methods.
Hash Table, Collision resolution Techniques.

UNIT–V
Introduction to graphs, Definition, Terminology, Directed, Undirected & Weighted graph, Representation of graphs, Graph Traversal-Depth first & Breadth first search. Spanning Trees, minimum spanning Tree, Shortest path algorithm.

TEXT & REFERENCE BOOKS
⬚ *Fundamentals Of Data Structure,* By S. Sawhney & E. Horowitz
⬚ *Data Structure :* By Trembley & Sorrenson
⬚ *Data Structure* : By lipschuists (Schaum's Outline Series Mcgraw Hill Publication)
⬚ *Fundamentals Of Computer Algorithm:* By Ellis Horowitz and Sartaj Sawhney

SUBJECT CODE: **IT 470**
SUBJECT NAME: **OPERATING SYSTEMS**
CREDIT HOURS: **3**

OPERATING SYSTEM
UNIT–I
Definitions, functions and types of operating system, System components, Operating system Services, System Calls, System programs, System structure.

UNIT–II
Process Concepts, process state & process control block, Process Scheduling, Scheduling Criteria, Scheduling Algorithms, Multiple-Processor Scheduling Real-Time Scheduling, Threads, Threads in Linux.

UNIT–III
Critical Section Problem , Semaphores, Classical Problem Of Synchronization, , Deadlock Characterizations, Method for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery from Deadlock, Process Scheduling in Linux.

UNIT–IV
Logical versus physical address space, Swapping, Contiguous Allocating, Paging, Segmentation, Virtual Memory, Demand Paging, Performance of Demand Paging, Page Replacement, Page Replacement Algorithms, Memory Management in Linux.

UNIT–V

AIUWA BCA Curriculum

Disk Scheduling, Disk Management, Swap Space Management, Disk reliability, Stable Storage Implementation.
File Concepts Directory structure, Protection, File system in Linux.
TEXT & REFERENCE BOOKS :-
▢ *Operating System Concepts* by *Silberschatz & Galvin, Addison Wesley Publication 6th Edition.*
▢ *Operating System Concepts & Design* by *Milan Milen Kovic, TMH Publication*

SUBJECT CODE: **IT 480-488**
SUBJECT NAME: **ELECTIVE 1**
CREDIT HOURS: **3**

IT 480 -ADVANCED CALCULUS AND MATRICES
UNIT – I
Derivative as tangent to a curve, continuity and differentiability, limit and derivative, derivative of products and composite functions, Leibnitz rule and chain rule.
UNIT – II
Expansion of function by Maclaurin's theorem, Taylor's theorem, Partial differentiation, Total differentiation coefficient, Homogeneous function, Euler theorem.
UNIT – III
Integral as anti – derivative, integration by parts, change of variable, integration of rational and irrational functions, definite integral, definite integral as a limit of a sum, application of definite integral to find sum of infinite series.
UNIT – IV
Differential Equation: Solution of ordinary differentiation equations, solution of first order and first degree differential equation, first order and higher degree differential equation, Linear differential equation of second order.
UNIT – V

Matrix: Solutions of system of Linear equation using matrix method, Rank of Matrix, Consistency of the linear system, Eigen value and Eigen vectors.

IT 481 PRINCIPLE AND PRACTICE OF FINANCIAL ACCOUNTING
UNIT 1
Accounting – Definition developments and objects, Basic principles of accounting, Double entry system, Journal, Ledger. Accounting Principles, conventions, Accounting Equations.
UNIT II
Bill of exchange, Joint venture accounts.
UNIT III
Hire purchase and installment system, single entry system.
UNIT IV
Accounting of non-trading institutions, Departmental and branch accounts.
UNIT V
Partnership – General principles, admission, retirement and death of a partner, Treatment of Goodwill, Dissolution of firms.

IT 482-STATISTICS FOR MANAGEMENT
UNIT I
Finding out averages, Scatter , Range , Mean, Median, Mode .
UNIT II
Normal distribution.
UNIT III
Binomial distribution, Poisson distribution, Statistical quality control by measurement and by attributes.
UNIT IV
Linear Regression Analysis, Correlation .
UNIT V
Tests of data, $\chi 2$ test of goodness and fit, Forecasting Techniques

IT 483–MULTIMEDIA TOOLS AND APPLICATIONS
UNIT–I
Multimedia: Needs and areas of use, Development platforms for multimedia – DOS, Windows, Linux. Identifying Multimedia elements – Text, Images, Sound, Animation and Video, Making simple multimedia with PowerPoint.
Text – Concepts of plain & formatted text, RTF & HTML texts, using common text preparation tools, Conversion to and from of various text formats, using standard software, Object Linking and Embedding concept, Basics of font design, overview of some fonts editing and designing tools, Understanding & using various text effects.
Images – importance of graphics in multimedia, Vector and Raster graphics, image capturing methods – scanner, digital camera etc. various attributes of Images – size, color, depth etc, Various Image file format – BMP, DIB, EPS, CIF, PEX, PIC, JPG, TGA, PNG and TIF format – their

features and limitations, graphic file formats conversions, processing images with common software tools such as Photoshop, Paint Shop pro, Corel draw etc..

UNIT-II

Sound: Sound and it Attributes, Mono V/s Stereo sound, Sound channels, Sound and its effect in multimedia, Analog V/s Digital sound, Basics of digital sounds-Sampling, Frequency, Sound Depth, Channels, Sound on PC, Sound standards on PC, Capturing and Editing sound on PC, Overview and using some sound recording, editing software. Overview of various sound file formats on PC – WAV, MP3, MP4, Ogg Vorbose etc.

UNIT–II

Animation: Basics of animation, Principle and use of animation in multimedia, Effect of resolutions, pixel depth, Images size on quality and storage. Overview of 2-D and 3-D animation techniques and software- animation pro, 3D studio & Paint Shop pro animator.
Animation on the Web – features and limitations, creating simple animations for the Web using GIF Animator and Flash.

UNIT–III

Video: Basics of Video – Analog and Digital Video, How to use video on PC. Introduction to graphics accelerator cards, DirectX Introduction to AV/DV and IEEE1394 cards , Digitization of analog video to digital video, Interlacing and non-interlacing, Brief note on various video standards – NTSC, PAL, SECAM, HDTV, Introduction to video capturing Media & instrument – Videodisk, DVCAM, Camcorder, Introduction to digital video compression techniques and various file formats – AVI, MPEG, MOVE Real Video.
Brief Introduction to video editing and movie making tools – Quick time, video for windows & Adobe premier.

UNIT–IV

Authoring tools for CD Based Multimedia: Type of multimedia authoring tools, key factors of selecting CD based multimedia authoring tools, Planning and distribution of a multimedia project. Multimedia development team & skills requirement, Stages in designing & producing multimedia products for CD, Testing of product, distribution of multimedia product, various formats of CD's and DVD's.

UNIT – V

Multimedia on the Web: Bandwidth relationship, broadband technologies, Text in the web – Dynamic and embedded font technology, Audio on the Web – Real Audio and MP3/MP4, Audio support in HTML, Graphics – HTML safe color palate, Interlaced V/s Non interlaced model, Graphics support in HTML, Image Map, Video on the Web – Streaming video, Real Video, MPEG and SMIL, Virtual Reality on the Web.

TEXT AND REFERENCE BOOKS :

 Multimedia In Action – James E Shuman – Vikas Publishing House.
 Multimedi Basics – Volume – 1 Technology, Andreas Holzinger, Firewall Media(Laxmi Publications Pvt. Ltd) New Delhi.

PRACTICAL GROUP

SUBJECT CODE: **IT 351**
SUBJECT NAME: **INTERNAL ASSESSMENT**
CREDIT HOURS: **3**

SUBJECT CODE: **IT 411**
SUBJECT NAME: **COMPUTER LAB V: C++**
CREDIT HOURS: **3**

SUBJECT CODE: **IT 412**
SUBJECT NAME: **COMPUTER LAB VI: DATA STRUCTURES, INTERNET & E-COMMERCE**
CREDIT HOURS: **3**

SUBJECT CODE: **PPD 301**
SUBJECT NAME: **PROFESSIONAL PERSONALITY DEVELOPMENT - III**
CREDIT HOURS: **3**

PROFESSIONAL PERSONALITY DEVELOPMENT - III
UNIT-1 : MIND MANAGEMENT
(Reference: The Eights Habit by Stephen Covey)
Meditation
Patangali's Eight Yoga Principals
Gautam Buddha's Eight Principals
Developing Right/ Samyak Vision, Goal, determination, Relationship, Speaking, Actions & Acceptance.
Concentration Enhancement Techniques
Transactional Analysis
Stress & Worry management
UNIT-2: BASIC QUALITIES OF EFFECTIVE PEOPLE
(Reference : Seven habits for Highly effective people by Stefen Covey, Seven habits for Teenagers by Stefen Covey)
Being Proactive

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Beginning with End in Mind
Putting First Things First

UNIT-3: TECHNIQUES OF HIGHLY EFFECTIVE PEOPLE

(Reference : Seven habits for Highly effective people by Stefen Covey)

Win Win Strategy
Understanding before getting Understood
Synergizing

UNIT-4: BASIC QUALITIES FOR SUCCESS

(reference : The Seven Spiritual Laws of Success by Deepak Chopra)

Capability
Surrender
Action

Unit-5: ESSENTIAL QUALITIES FOR SUCCESS

(reference : The Seven Spiritual Laws of Success by Deepak Chopra)

Efforts
Willingness
Spirituality

SUBJECT CODE: **IT 531**
SUBJECT NAME: **SYSTEM ANALYSIS AND DESIGNS**
CREDIT HOURS: **3**

SYSTEM ANALYSIS AND DESIGN
UNIT-I
System Concept: Definition, Characteristics, Elements of system, Physical and abstract system, open and closed system, man-made information systems.
System Development Life Cycle: Various phases of system development, Considerations for system planning and control for system success.
System Planning: Base for planning a system, Dimensions of Planning.
UNIT-II
Initial Investigation: Determining users requirements and analysis, fact finding process and techniques.
Feasibility study: Determination of feasibility study, Technical, Operational & Economic Feasibilities, System performance constraints, and identification of system objectives, feasibility report.
Cost/Benefit Analysis: Data analysis, cost and benefit analysis of a new system. Categories determination and system proposal.

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UNIT-III

Tools of structured Analysis: Logical and Physical models, context, diagram, data dictionary, data diagram, form driven methodology, IPO and HIPO charts, Gantt charts, system model, pseudo codes, Flow charts- system flow chart, run flow charts etc., decision tree, decision tables, data validation,

Input/ Output and Form Design: Input and output form design methodologies, menu, screen design, layout consideration.

UNIT-IV

Management standards – Systems analysis standards, Prgramming standards, Operating standards.

Documentation standards – User Manual, system development manual, programming manual, programming specifications, operator manual.

System testing & quality: System testing and quality assurance, steps in system implementation and software maintenance.

System security: Data Security, Disaster/ recovery and ethics in system development, threat and risk analysis.

System audit.

UNIT-V

Organisation of EDP: Introduction. Job Responsibilities & duties of EDP Personnels- EDP manager, System Analyst, Programmers, Operators etc. Essential features in EDP Organization.

Selection of Data Processing Resources: purchase, lease, rent-advantages and disadvantages.

Hardware and software procurement – In-house purchase v/s hiring and lease.

SUBJECT CODE: **IT 432**
SUBJECT NAME: **ORACLE RDBMS**
CREDIT HOURS: **3**

ORACLE RDBMS

UNIT - I

Oracle product details, Different Data base model , RDBMS components – Kernel, Data dictionary, Client/Server Computing and Oracle, Overview of oracle architecture – Oracle files, System and User process, Oracle Memory, System data base object, Protecting data

UNIT - II

Oracle data types, Working with Tables.Data Constraints, Column level & table Level Constraints.

Defining different constraints on the table Defining Integrity Constraints in the ALTER TABLE Command. Select Command, Logical Operator, Range Searching, Pattern Matching,Oracle Function, Grouping data from Tables in SQL, Manipulation Data in SQL

Joining Multiple Tables (Equi Joins),Joining a Table to itself (self Joins),Subqueries Union, interesect & Minus Clause,Creating view,Renaming the Column of a view,Granting Permissions, - Updation, Selection, Destroying view

UNIT-III

AIUWA BCA Curriculum

Creating Indexes.Creating and managing User, PL/SQL, SQL & PL/SQL differences, block structure, variables, constants, datatype, Assigning database values to variables, Select … INTO, Using cursors

UNIT-IV

Error handling, Built-in exceptions, User defined exceptions, The Raise-Application-error procedure, Oracle transaction, Locks, Implicit and Explicit locking. Procedures & Functions - Concept, creation, execution, advantages, syntax, deletion.

UNIT-V

Triggers - Concept, use, how to apply database triggers, type of triggers, syntax, deleting. Functions of Oracle DBA.

Create Database, Create tablespace.

Import & Export

Oracle backup & recovery

TEXT & REFERENCE BOOKS :

⯀ Ivan Bayross, **"SQL, PL/SQL",** Bpb Publications**"**

⯀ Liebschuty, **"The Oracle Cook Book",** BPB Publication

⯀ Michael Abbey, Michael J.Corey**, "Oracle A Beginners Guide".** TMH Publication

⯀ **Oracle Unleashed** (Chapter 1,2,3,4,5 and 9)

SUBJECT CODE: IT 434
SUBJECT NAME: PROGRAMMING WITH VISUAL BASIC.NET
CREDIT HOURS: 3

PROGRAMMING WITH VISUAL BASIC.NET
(THE SYLLABUS IS BASED ON THE VISUAL STUDIO 2003)
UNIT–I

Introduction to .NET, .NET Framework features & architecture, CLR, Common Type System, MSIL, Assemblies and class libraries. Introduction to visual studio, Project basics, types of project in .Net, IDE of VB.NET- Menu bar, Toolbar, Solution Explorer, Toolbox, Properties Window, Form Designer, Output Window, Object Browser.

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The environment: Editor tab, format tab, general tab, docking tab. visual development & event drive Programming -Methods and events.

UNIT–II

The VB.NET Language- Variables -Declaring variables, Data Type of variables, Forcing variables declarations, Scope & lifetime of a variable, Constants, Arrays, types of array, control array, Collections, Subroutines, Functions, Passing variable Number of Argument Optional Argument, Returning value from function.

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Control flow statements: conditional statement, loop statement. Msgbox & Inputbox.
UNIT – III
Working with Forms : Loading, showing and hiding forms, controlling One form within another.
GUI Programming with Windows Form: Textbox, Label, Button, Listbox, Combobox, Checkbox, PictureBox, RadioButton, Panel, scroll bar, Timer, ListView, TreeView, toolbar, StatusBar.There Properties, Methods and events. OpenFileDilog, SaveFileDialog, FontDialog, ColorDialog, PrintDialog. Link Label.
Designing menues : ContextMenu, access & shorcut keys.
UNIT–IV
Object oriented Programming: Classes & objects, fields Properties, Methods & Events, constructor, inheritance. Access Specifiers: Public Private, Projected. Overloading, My Base & My class keywords.
Overview of OLE, Accessing the WIN32 API from VB.NET & Interfacing with office97, COM technology, advantages of COM+, COM & .NET, Create User control, register User Control, access com components in .net application.
UNIT–V
Database programming with ADO.NET – Overview of ADO, from ADO to ADO.NET, Accessing Data using Server Explorer. Creating Connection, Command, Data Adapter and Data Set with OLEDB and SQLDB. Display Data on data bound controls, display data on data grid.
Generate Reports Using CrystalReportViwer.
TEXT & REFERENCE BOOKS :
▢ *VB.NET Programming Black Book* by steven holzner –dreamtech publications
▢ *Mastering VB.NET* by Evangelos petroutsos- BPB publications
▢ *Introduction to .NET framework*-Worx publication
▢ *msdn.microsoft.com/net/*
▢ *www.gotdotnet.com*

SUBJECT CODE: **IT 444**
SUBJECT NAME: **COMPUTER NETWORK**
CREDIT HOURS: **3**

COMPUTER NETWORKS
UNIT-I
Networking - Needs and Advantages, Network, Types- Client, Server and Peers, introduction to various types of servers.
Transmission technology - Signal Transmission-Digital signaling, Analog Signaling, Asynchronous & synchronous Transmission, Wired & Wireless transmission, Base band and Broadband transmission,
Transmission Media types- properties & specialty of various media – types, comparative study.

Network Topology-Bus, Star, Ring, Star bus, Star ring, Mesh – Features, Advantages and disadvantages of each type.

UNIT–II

Network adapters – working principals, configuration and selection,

Network Protocols-Hardware Protocols, software Protocols.

The theoretical Network Model - OSI

IEEE 802 standards, 802.3, 802.4, 802.5

Real World Networks – Ethernet, Fast Ethernet, Token Rings, FDDI, ATM, ARCnet and AppleTalk.

UNIT–III

Network Scaling-No. of nodes, distance, software, speed, special requirements

Connectivity Devices: Modem, Repeater, Hub – Active, Passive and Intelligent, Bridge-Local, Remote, Wireless, Routers-Static and Dynamic, Switches and its types . Brouters and Gateways.

Overview of TCP/IP reference model.

TCP/IP Protocol suites – Comparision between OSI and TCP/IP Models, Classification of TCP/IP protocols- IP, TCP, UDP, ARP, ICMP.

TCP/IP Services Protocols- DHCP, DNS, WINS, FTP, SMTP, TELNET, NFS.

IP Addressing and Subnet- IP Address – Class A, B & C. Domain Name Addressing, URL, e-mail address, Subnet & subnet mask.

UNIT–IV

Network building blocks requires for setting up a small LAN using Windows in a office, Hardware & software required, Simple Installation and configuration of Networking under Windows.

Using HyperTerminal in Windows, overview and using Network Setup Wizard in Windows, Some basic networking configuration using Windows 95/98/XP/2000/2003 Server and clients, Simple network administration. Setting up Internet Connection Sharing in Windows.

UNIT- V

Network Security : Network security issues, common threats, security barriers in the network pathways, Official levels of computer security, types of security controls, approaches to network security, Ethical hacking.

Firewalls – Need and features of firewalls, types of firewall technology- network level and application level, IP packets filter screening routers, limitations of firewalls.

Encryption and Decryption – Cryptography, Type of encryptions, encryption keys, single/ secrete/ private key encryption, Public/Private key encryption.

Overview of Digital Signature and Digital Certificates technology,

TEXT

⬚ *ames Chellis Charles Perkins, Matthew Strebe **"Networking Essentials:Study Guide MCSE"**, Second Edition, BPB Publications.*

⬚ *S.K.Basandra & S. Jaiswal, **"Local Area Networks",** Galgotia Publications*

⬚ **MCSE Windows 2000 Network Infrastructure Disign**

⬚ *Andrew & Tanenbaum, **"Computer Network "***

⬚ *William Stallings, **"Data and Computer Communication"***

SUBJECT CODE: **IT 580-588**
SUBJECT NAME: **OBJECT ORIENTED PROGRAMMING WITH C++**
CREDIT HOURS: **3**

IT 580 **– LINUX OS SERVER**
UNIT – I
Linux introduction - Basic Features, Different flavors of Linux. Advantages, Installing requirement, Basic Architecture of Unix/Linux system, Kernel, Shell. Linux File system-Boot block, super block, Inode table, data blocks, How Linux access files, storage files, Linux standard directories.
Installation of Linux system- Partitioning the Hard drive for Linux, Installing the Linux system, System startup and shut-down process, init and run levels.
Essential Linux commands Understanding shells, Commands for files and directories cd, ls, cp, md, rm, mkdir, rmdir, pwd, file, more, less, creating and viewing files using cat, file comparisons – cmp & comm, View files, disk related commands, checking disk free spaces.
UNIT–II
Processes in Linux-process fundamentals, connecting processes with pipes, tee, Redirecting input output, manual help, Background processing, managing multiple processes, changing

process priority with nice, scheduling of processes at command, cron, batch commands, kill, ps, who, sleep, Printing commands, find, sort, touch, file, file related commands-ws, sat, cut, dd, etc. Mathematical commands- bc, expr, factor, units.

Creating and editing files with vi, joe & vim editor

UNIT–III

Shell programming- Basic of shell programming, Various types of shell available in Linux, comparisons between various shells, shell programming in bash, read command, conditional and looping statements, case statements, parameter passing and arguments, Shell variables, system shell variables, shell keywords, Creating Shell programs for automate system tasks.

Simple filter commands – pr, head, tail, cut, paste, sort, uniq, tr. Flter using regular expressions – grep, egrep, and sed.

awk programming – report printing with awk.

UNIT–IV

System administration Common administrative tasks, identifying administrative files – configuration and log files, Role of system administrator, Managing user accounts-adding & deleting users, changing permissions and ownerships, Creating and managing groups, modifying group attributes, Temporary disable user's accounts, creating and mounting file system, checking andmonitoring system performance file security & Permissions, becoming super user using su. Getting system information with uname, host name, disk partitions & sizes, users, kernel. Backup and restore files, reconfiguration hardware with kudzu, installaing and removing packages in Linux. Configure X-windows starting & using X desktop. KDE & Gnome graphical interfaces, changing X windows settings.

UNIT-V

Installation, configuration and managing a simple LAN within an organization using Linux.

Setting up and using telnet server and clients.

Installation and simple configuration of Proxy Server - Squid, Mail server – Sendmail, Web server - Apache, File server and Samba server in linux

VNC server and client setting

TEXTS & REFERENCES BOOKS :

_**UNIX – Concepts & Applications (Third Ed.)** – Sumitabha Das, Tata McGraw Hill Publications.

_**Unix for programmers and users (Third Ed.)** – Graham Glass & King Ables, Pearson Education India. (Low Prices Edition).

_**Fedora Core 6 Bible**

IT 581 - *DISCRETE MATHEMATICS*

UNIT-I

Statements, logical connectives, truth tables, tautologies, contradictions, logical equivalence. Applications to everyday reasoning.

UNIT–II

An axiom system for the sentence calculus. Truth tables as an effective procedure for deciding logical validity. Relation of sentence calculus to Boolean algebra.

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UNIT-III

Quantifiers: Universal and existential quantifier. Predicate calculus. Axiom system for predicate calculus. Application to everyday reasoning.

UNIT-IV

Sets and classes. Relations. Equivalence relation and equivalence classes. Partial order relation, lub and glb. Trees and lattices. Mappings: injective, surjective and bijective mappings. Cardinality. Finite and infinite sets.

UNIT-V

Definition and basic properties of: semigroups and groups, rings, integral domains, and fields.

UNIT-VI

Vector spaces and algebras. Linear dependence and independence. Bases. Linear transformations and their representation as matrices. Invertible linear transformation and invertible matrix. Geometrical interpretation of determinant of a 2x2 matrix

TEXTS AND REFERENCE BOOKS:-

▢ *S.S.SASTRY,* ***"Engineering Mathematics",*** *Prentice Hall of India*

▢ *Bernard Kolman, Robert C.Busby, Sharon Ross,* ***"Discrete Mathematical Structures Engineering Mathematics "***

IT 582-BUSINESS STATISTICS

UNIT I

Introduction, Definition, Scope, Limitation and importance of statistics, Frequency distribution, Classification and tabulation of data. Measures of central tendency – Mean, Mode and Median

UNIT II

Measures of dispersion and their coefficients, coefficient of skewness – Karl Pearson's and Bowley's method. Analysis of time series, Method of least square and moving average.

UNIT III

Coefficient of correlation – Karl Pearson's, Spearmen's and Concurrent deviation method and their interpretation.

UNIT IV

Index numbers – Fixed base, chain base, cost of living index numbers, Aggregate and family budget method, Fishers Idle Index number.

UNIT V

Diagrammatic and Graphical presentation – Bar, Diagram, Frequency curve, Cumulative frequency curve, One and deo dimensional diagram, multiple diagram, Sub-division and Percentage sub-division bar.

IT 584-PRODUCTION MANAGEMENT

UNIT I

Nature and scope of production and Operation Management, Facility location, Types of manufacturing Systems & Layouts, Layout planning and analysis, Material handling principles and equipments.

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UNIT II

Line balancing problems, operations decisions-production planning and control in mass production- in batch. Job order Manufacturing, Capacity planning models, process planning Aggregate planning, scheduling.

UNITIII

Maintenance management concepts , work study, method study, work management, work sampling , work environment, Industrial safety

UNIT IV

Material management:- An overview of material management, material planning and inventory control, JIT, Materials planning, Budgeting and material requirement planning, Purchase management, stores management.

UNIT V

Quality Assurance: Acceptance sampling, statistical process control, Total Quality management, ISO 9000, Maintenance management, safety management.

Text Book:

Chary, S.N "Production and Operation Management " Tata McGrawHill

Reference Books

Buffa E.S. "Modern Production Management " New York John Wiley.

PRACTICAL GROUP

SUBJECT CODE:	**IT 431**
SUBJECT NAME:	**INTERNAL ASSESSMENT**
CREDIT HOURS:	**3**

SUBJECT CODE:	**IT 413**
SUBJECT NAME:	**COMPUTER LAB VII: LINUX**
CREDIT HOURS:	**3**

SUBJECT CODE:	**IT 414**
SUBJECT NAME:	**COMPUTER LAB VIII: ORACLE**
CREDIT HOURS:	**3**

SUBJECT CODE:	**PPD 401**

AIUWA BCA Curriculum

SUBJECT NAME: **PROFESSIONAL PERSONALITY DEVELOPMENT - IV**
CREDIT HOURS: **3**

PROFESSIONAL PERSONALITY DEVELOPMENT - IV
UNIT 1: PERSONALITY PROJECTION
Leadership Skill Development
Team building skill
Interpersonal Dynamics
UNIT 2: CURRENT AFFAIRS & GENERAL AWARENESS
Fusion of Management, Technology & ICT,
Recent Trends & Development in IT Industry
UNIT 3 : NON-VERBAL COMMUNICATION
Importance of Body Language
Appropriate Body Postures
Expression for Impression
Professional Gestures
UNIT 4: PROFESSIONAL WRITING
Letter Drafting & Report Writing
Preparation of CV, Resume & Bio-data
UNIT 5: APTITUDE DEVELOPMENT
Improving Mathematical Acumen
Enhancing Logical & Analytical Reasoning
Verbal & Non-verbal ability

SUBJECT CODE: **IT 492**
SUBJECT NAME: **MINOR PROJECT**
CREDIT HOURS: **8**

SUBJECT CODE: **IT 620**
SUBJECT NAME: **SOFTWARE TESTING AND PROJECT MANAGEMENT**
CREDIT HOURS: **4**

SOFTWARE TESTING AND PROJECT MANAGEMENT
UNIT - I
Testing basics and Development Models: Principals and context of testing in software
production, Usability and Accessibility Testing, Phases of Software Project, Process models to
represents different phases, Software Quality Control and its relation with testing, validating
and verification, Software Development life cycle models, various development models.
White Box Testing: White Box Testing - Static Testing, Structural Testing-Unit code functional
testing, Code coverage testing, code complexity testing,.
Black Box Testing- What? Why and when to do Black box testing, Requirements based testing,
Positive and Negative Testing, Boundary value testing, Decision Tables, Equivalence

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Partitioning, State Based or Graph Based Testing, Compatibility Testing, User Documentation Testing, Domain Testing.

UNIT - II

Integration Testing: Introduction and types of integration testing, Scenario testing, defect bash.

System and Acceptance Testing- Overview, functional and non-functional testing, Acceptance testing.

Overview of some software testing tools: WinRunner, LoadRunner, Test Director.

(Some practical should be conducted using these tools)

UNIT - III

Performance Testing- Introduction, factors related to performance testing, methodology for performing testing, Regression Testing,

Ad hoc Testing- Overview, Buddy & pair testing, Exploratory testing, Interactive testing, Agile and extreme testing.

Testing of Object Oriented Testing – Introduction, Differences in OO testing.

UNIT-IV

Software Project Management: Overview, Software Project Management Framework, Software Development life cycle, Organization Issues and Project Management, Managing Processes, Project Execution, Problems in Software Projects, Project Management Myths and its clarifications.

Software Project Scope: Need to scope a software project, scope management process, communication techniques and tools, communication methodology

Software Requirement Gathering and Resource allocation: Requirement specifications, SRS Document preparation, Resources types for a software projects, requirement for resources allocation.

UNIT – V

Software Project Estimation: Work Breakdown structure (WBS), steps in WBS, Measuring efforts for a project, techniques for estimation – SLOC, FP, COCOMO and Delphi methods.

Project Scheduling: Scheduling and its need, scheduling basics, Gannt Chart, Network scheduling techniques, Pert and CPM

Using a Project Management Tool: Introduction to MS Project 2000, Managing tasks in MS Project 2000, Tracing a project plan, creating and displaying project information reports.

TEXT & REFERENCE BOOK :

⬚ *Software Testing: Principles and Practice By Gopalaswamy and Srinivasan, 817758121x. Publisher, Pearson Education India. ISBN, 817758121x.*

⬚ *Software Testing Tools: Covering WinRunner, Silk Test, LoadRunner, JMeter and TestDirector with case By Dr. K.V.K.K. Prasad, ISBN: 8177225324, Wiley Dreamtech, List Price: Rs. 279.00*

⬚ *http://www.columbia.edu/~jm2217/*

⬚ *Basics of Software Project Management – By NIIT,, Prentice Hall of India, ISBN 81-203-2490-0*

⬚ *Software Project Management by Bob Hughes & mike Cotterell, Tata McGraw Hill , ISBN – 0-07-061985-9*

SUBJECT CODE: IT 622
SUBJECT NAME: **PROGRAMMING WITH JAVA**
CREDIT HOURS: 3

PROGRAMMING WITH JAVA
UNIT–I
C++ Vs JAVA, JAVA and Internet and WWW, JAVA support systems, JAVA environment.
JAVA program structure, Tokens, Statements, JAVA virtual machine, Constant & Variables, Data Types, Declaration of Variables, Scope of Variables, Symbolic Constants, Type Casting.
Operators : Arithmetic, Relational, Logical Assignments, Increment and Decrement, Conditional, Bitwise, Special, Expressions & its evaluation.
If statement, if…else… statement, Nesting of if…else… statements, else…if Ladder, Switch, ? operators, Loops – While, Do, For, Jumps in Loops, Labelled Loops.
UNIT–II
Defining a Class, Adding Variables and Methods, Creating Objects, Accessing Class Members, Constructors, Methods Overloading, Static Members, Nesting of Methods.
Inheritance: Extending a Class, Overriding Methods, Final Variables and Methods, Final Classes, Finalize Methods, Abstract methods and Classes, Visibility Control.
UNIT–III

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Arrays: One Dimensional & two Dimensional, strings, Vectors, wrapper Classes, Defining Interface Extending Interface, Implementing Interface, Accessing Interface Variable, System Packages, Using System Package, Adding a Class to a Package, Hiding Classes.

UNIT–IV

Creating Threads, Extending the Threads Class, Stopping and Blocking a Thread, Life Cycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the Runnable Interface.

UNIT–V

Local and Remote Applets Vs Applications, Writing Applets, Applets Life Cycle, Creating an Executable Applet, Designing a Web Page, Applet Tag, Adding Applet to HTML File, Running the Applet, Passing Parameters to Applets, Aligning the Display, HTML Tags & Applets, Getting Input from the User.

TEXT & REFERENCE BOOKS:

▢ *E. Balaguruswamy,* **"Programming In Java",** *2nd Edition, TMH Publications* ISBN 0-07-463542-5

▢ *Peter Norton,* **"Peter Norton Guide To Java Programming",** *Techmedia Publications* ISBN 81-87105-61-5

SUBJECT CODE: **IT 624**
SUBJECT NAME: **ASP.NET AND C++**
CREDIT HOURS: **3**

ASP.NET AND C#

UNIT – I

Overview of ASP.NET framework, Understanding ASP.NET Controls, Applications
Web servers, installation of IIS.
Web forms, web form controls -server controls, client controls, web forms & HTML, Adding controls to a web form ,Buttons, Text Box , Labels, Checkbox, Radio Buttons, List Box, etc.
Running a web Application, creating a multiform web project.

UNIT-II

Form Validation: Client side validation, server Side validation, Validation Controls : Required Field Comparison Range. Calendar control, Ad rotator Control, Internet Explorer Control.
State management- View state, Session state, Application state,

UNIT-III

Architecture of ADO.NET, Connected and Disconnected Database, Create Connection using ADO.NET Object Model, Connection Class, Command Class, DataAdapter Class, Dataset Class.
Display data on data bound Controls and Data Grid.

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Database Accessing on web applications: Data Binding concept with web, creating data grid, Binding standard web server controls. Display data on web form using Data bound controls.

UNIT-IV

Writing datasets to XML, Reading datasets with XML.

Web services: Introduction, Remote method call using XML, SOAP, web service description language, building & consuming a web service, Web Application deployment.

UNIT-V

Overview of C#, C# and .NET, similarities & differences from JAVA, Structure of C# program. Language features: Type system, boxing and unboxing, flow controls, classes, interfaces, Serialization, Delegates, Reflection.

TEXT BOOKS & REFERENCE BOOKS

⬜ *VB.NET Black Book* by steven holzner –dreamtech

⬜ *ASP.NET* Unleashed

⬜ *C# programming* – wrox publication

⬜ *C# programming Black Book* by Matt telles

SUBJECT CODE: IT 680-688
SUBJECT NAME: ELECTIVES
CREDIT HOURS: 3

IT 680 - INFORMATION TECHNOLOGY TRENDS

UNIT - I

DISTRIBUTED SYSTEMS – Introduction, Distributing the processing and storage Function, Advantage and Disadvantage of Distributed System.

E-Supply Chain Management

Introduction, E-Supply-Chain components, E-Supply-Chain architecture, Major Trends in E-SCM, Some examples of using ESCM.

E-Customer Relationship Management (E-CRM)

Customer Relationship management concepts, How technology can help in this. E-CRM solutions, advantages, E-CRM capabilities, Data Mining & E-CRM, Some examples of using E-CRM.

UNIT-II

INTRODUCTION TO VIRTUAL REALITY – Introduction, Brief History of virtual reality, Present uses of virtual reality.

Artificial Intelligence and Expert system- Concepts of AI & Expert Systems, Building of Expert system, Merits and Demerits of Expert system, Application of Expert system and AI.

UNIT-III

DATAWAREHOUSE AND DATA MARTS – Introduction, Advantages of data warehouse, Datawarehouse components, Summarised data, Current details, System of records, Integration and transformation programs, Archieves, Metadata, Structure of a datawarehouse, Uses of a datawarehouse, Standards reports and queries, Queries against summarised data, Data mining, Interface with other warehouse

DATAMINING – Introduction, Evolution of data mining, Datamining –verification vs. discovery, Advantages of datamining, Technologies used in dataminnig

UNIT – IV

Mobile Commerce

Introduction, Growth, Success stories of Mobile commerce, Technologies for mobile commerce, WAP & its basics, WAP Programming model, other wireless technology, diffenent generations in wireless communications, GSM V/s CDMA security issues, M-Commerce in India.

GEOGRAPHIC INFORMATION SYSTEM (GIS) - Components of a GIS - Hardware, software, data, People, Methods, Working of GIS, Geographic references, Vector and Raster Models, Data for GIS, GIS and Related Technologies, Desktop Mapping, CAD, Remote sensing and GPS, DBMS

UNIT - V

Introduction and basic concepts of modern communication and telephony technology: CDMA, WLL, GSM, VOIP, Blue-tooth, Wi-Fi.

TEXT AND REFERENCE BOOKS :

⦿ *Fundamentals Of Information Technology* by Alex Leon & M. Leon, Vikas Publications, New Delhi.

⦿ *Frontiers of Electronic Commerce, By- Kalakota, Ravi ; Stone, Tom ; Whinston, Andrew B, Addison Wesley Publishing Co , ISBN 8178080575*

⦿ *Recent Magazines of Computers and Communication*

IT 681 – NUMERICAL METHODS

UNIT –1

Representaion of a computer on a computer, difference between floating point and real arithmatics,different types of errors, Error in the approximation of a function, Error in series approximation.

UNIT-2

Solution of algebric and trancendental equation using bisection method,regularfalse method,newtonraphson method.

Solution of simultaneous linear equations using gaussblimination method,jacobi'siterative method,gaussseidel iterative method.

UNIT-3

Interpoiation: finite difference and operators,newton forward,newton backward, games forward,games backward,stirling'sinterpolation divided difference formula

UNIT-4

Numerical differenciation , formula for derivatives maxima and minima of a tabulated

Numerical integration: newton-cotes formula, tapezoidal rule, simpson's rule, weddle's rule.
UNIT-5
Solution of ordinary differential equation using picard's method,taylor'series method, euler,s method, modified euler's method, runge_knutta method, predictor-corrector method.

IT 682 - ADVANCED COST AND CORPORATE ACCOUNTS
UNIT I
Nature and significance of cost accounting, Analysis and classification of cost, Unit costing – Cost sheet and cost statement. Reconciliation of cost and financial accounts.
UNIT II
Process costing – Normal and abnormal wastage, Joint and by product. Operating costing.
UNIT III
Standard costing – Introduction, meaning, requisites, variance analysis – Material and labour variance.
UNIT IV
Corporate Accounting – Issue of shares, Profit prior to incorporation, Financial account of company.
UNIT V
Valuation of Shares and valuation of Goodwill.

IT 684 - HUMAN RESOURCE MANAGEMENT
UNIT I
Concepts and Functions of Human Resources Management, Corporate objective of Human Resource Management.
UNIT II
Job Analysis, Job Description, job Specification, recruitment, Selection, Induction, Placement, Promotion.
UNIT III
Induction and Socialization, manpower training and development.
UNIT IV
Job evaluation and wage determination, salary structure, wage policies and regulations, performance appraisal and potential evaluation.
UNIT V
Employee welfare, Grievance Management, Employee empowerment, trade Unions.

IT 685 -
SUBJECT AND THE DETAILED SYLLABUS OF THIS PROGRAM WILL BE DECLARED AT THE STARTING OF SEMESTER

IT 686 MATHEMATICAL STATISTICS
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UNIT-1
Frequency distributions, Histograms and frequency polygons , Measures of central tendency :
Mean, Mode, Median, Dispersion, Mean deviation and standard deviation.
UNIT-2
Moments, Skewness, kurtosis, Elementary probability theory: Definition, conditional
probability, Probability distribution, mathematical expectation
UNIT –3
Theoretical distribution:
Binomial , poisson and Normal distribution , Relation between the binomial, poisoned Normal
distribution.
Correlation and regression, liner correlation, measure of correlation, least square regression
lines.
UNIT 4
Curve fitting: Method of least square, least square line, least squares Parabola. chi-square text
:definition of chi-square, signification test : contingency test, coefficient of contingency
UNIT-5
Basic of sampling theory: Sample mean and variance, students t-test, test of Hypotheses and
significance, degree of freedom, Z-test, small and large sampling, Introduction to monte carlo
method.

IT 687 - MANAGEMENT ACCOUNTING
UNIT I
Meaning and definition of management account, Various systems of management of
accounting, Nature and scope, tools and techniques, financial statement, Analysis and
interpretation of financial statement.
UNIT II
Ratio analysis – Object, classification of ratio, Method of accounting ratio. Return on capital
employed.
UNIT III
Fund flow and cash flow statements, object, Methods of preparation and techniques.
UNIT IV
Business Budget and Budgetary control – objects and advantage, types of budget, Cash budget,
Flexible Budget, Master Budget, Production Budget. Capital expenditure, Project appraisal and
forecasting.
UNIT V
Pricing decision, Marketing decision and marginal costing system, Break Even Analysis and its
use. Fixed and variable expenses, P/V ratio.

IT 688 - ECONOMICS AND FINANCIAL MANAGEMENT
UNIT I
Nature and Scope of Financial Management, Aims and objectives of Corporate Financial
decisions.
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UNIT II

Time value of money, Instruments of long term Finance, Instruments of Short term Finance, Cost of different sources of raising capital.

UNIT III

Cost of different sources of raising capital, Cost of Capital, Cost of Debt, Cost of preference Shares, Cost of Equity, Weighted average cost of capital, Average and marginal Cost of Capital.

UNIT IV

Tools and techniques, Ratio Analysis: Current Ratio, Depth Equity ratio, Net operating profit Ratio, Stock turnover ratio, return on investment ratio, Debtors and creditors turnover ratio, Fund flow and Cash flow analysis.

UNIT V

Management of Working Capital Cash, Receivables and Inventory Management, Operating and financial leverage.

PRACTICAL GROUP

SUBJECT CODE: **IT 531**
SUBJECT NAME: **INTERNAL ASSESSMENT**
CREDIT HOURS: **3**

SUBJECT CODE: **IT 532**
SUBJECT NAME: **COMPUTER LAB IX: JAVA**
CREDIT HOURS: **3**

SUBJECT CODE: **IT 539**
SUBJECT NAME: **COMPUTER LAB X**
CREDIT HOURS: **3**

COMPUTER LAB X: WILL BE BASED ON PRACTICAL SUBJECT OFFERED AT THAT TIME

SUBJECT CODE: PPD 420
SUBJECT NAME: PROFESSIONAL PERSONALITY DEVELOPMENT V
CREDIT HOURS: 3

PROFESSIONAL PERSONALITY DEVELOPMENT - V
UNIT – 1: CORPORATE COMMUNICATION
Industry Insights (IT Industry)
Code of Conduct in Profession
Managing Professional Relationships
UNIT - 2: SWOT ANALYSIS
Introspection
Identifying Strengths and Weaknesses
Application of Strengths
Overcoming Weaknesses
UNIT – 3: GROUP DYNAMICS
Concepts of Group Discussion
Types of Group Discussion
Etiquettes in Group Discussion
Understanding Group Tasks
Mock Group Discussions
Leadership Skills
Creative Brainstormins.
UNIT – 4: PROBLEM SOLVING TECHNIQUES
Case Studies & Analysis
Case Discussion & Presentation
Decision Making Skills
Principles of solving Dilemmas
UNIT – 5: INTERVIEW TECHNIQUES
Personal (HR & Technical) Interview Techniques
Frequently Asked Questions
Psychometric Analysis
Mock Interview Sessions

SUBJECT CODE: IT 700
SUBJECT NAME: MAJOR PROJECT WORK
CREDIT HOURS: 24 (8 MONTHS INTERNSHIP)

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SUBJECT CODE: IT 531
SUBJECT NAME: INTERNAL ASSESSMENT
CREDIT HOURS: 3

SUBJECT CODE: IT 900
SUBJECT NAME: HONORS ELECTIVES
CREDIT HOURS: 24

AVAILABLE
HONORS
      MULTIMEDIA TOOLS AND APPLICATIONS
      LINUX OS SERVER

COMMERCE:
      PRINCIPALS AND PRACTICE OF FINANCIAL ACCOUNTING
      ADVANCED COST AND CORPORATE ACCOUNTING
      MANAGEMENT ACCOUNTING

MANAGEMENT
      STATISTICS FOR MANAGEMENT
      PRODUCTION MANAGEMENT
      HUMAN RESOURCE MANAGEMENT
      INFORMATION TECHNOLOGY TRENDS
      ECONOMICS AND FINANCIAL MANAGEMENT

General Instructions :-
◻ Students are required to select one stream out of available four options – Honors / Commerce/ Management/ Mathematics of their choice from the third semester onwards. Each stream will be required to take four papers in the selected stream. **Thus, a student who selects Commerce stream will be required to take four papers in the Commerce stream. Once students select his/her stream in third semester he/she must select only that paper in the subsequent semesters that belongs to selected stream.**

GUIDELINES FOR INTERNAL AND CONTINUOUS ASSESSMENT
1. 30% marks are reserved for practical work. These marks will be based on a record of lab-exercises work in a journal (Practical Exercise Book) maintained by the student.
2. Each practical paper of the semester should involve **at least 15 practical excerises**, (

3. 50% marks are reserved for 5 theory papers (10 marks per paper). These marks are to be awarded on the basis of at least two written tests conducted during the semester.

4. 10% is reserved for attendance and must be based on attendance.

5. 10% is left to the discretion of the concerned faculty.

6. Practical Exercise Books, question papers and answer sheets of internal tests, and attendance records of all the students should be maintained for **at least two years** and may be inspected by the University at any time during this period.

GUIDELINES FOR SUBMISSION OF BCA MAJOR, MINOR PROJECTS AND SUMMER ASSIGNMENTS

All the candidates of BCA are required to submit a project-report based on the work done by him/her during the major/minor/summer assignment period.

THE GUIDE

The Guide for BCA would be a faculty member at CMIT.

PROJECT TIME / MAN-HOURS

⦿ The BCA Major Projects would be approximately 600 man-hours and carries a total of 24 Credit Hours

⦿ The BCA Minor Projects would be approximately 100 man-hours and carries a total of 8 Credit Hours

⦿ The BCA Assignment would be approximately 50 man-hours and carries a total of 4 Credit Hours.

⦿ Number of students in a project group will not be more than four for BCA.

PROJECT EVALUATION GUIDELINES DURING INTERNSHIP

The evaluation will be done on the basis of following basis:

        Presentation - 40%

        Thesis/Project report - 30%

        Software Coding

                i) Documentation of the code - 15% of total marks.

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ii) Software - 15% of total marks.

Examinationby External Examiner
The evaluation will be done on the basis of following heads:
Viva - 40%
Thesis/Project report - 30%
Software Coding
i) Documentation of the code - 15% of total marks.
ii) Software - 15% of total marks.
Note: If the company/organization in which the student has done his project is not allowing the student to submit the code to the University then the company/oraganisation has to send a confidential report, clearly indicating the percentage of marks obtained by the student for his software project. In the absence of such a certificate, the student will not be entitled for any credit for their project.
If on the basis of viva if the examiner feels that the project work has not actually being done by the student then he/she shall not give any credit for software coding.

SUMMARY/ABSTRACT
All students must submit a summary/abstract separately with the project report. Summary, preferably, should be of about 3-4 pages. The content should be as brief as is sufficient enough to explain the objective and implementation of the project that the candidate is going to take up. The write up must adhere to the guidelines and should include the following:
Name / Title of the Project
Statement about the Problem
Why a particular topic was chosen?
Objective and scope of the Project
Methodology (including a summary of the project)
Hardware & Software to be used
Testing Technologies used
What contribution would the project make?

TOPIC OF THE PROJECT- The topic should corroborate the work.

OBJECTIVE AND SCOPE: Objective should be clearly specified.

PROCESS DISCRIPTION: Should be brief and may be supported by DFDs / Flowcharts to explain the flow of the information.

RESOURCES AND LIMITATIONS: Resources for designing and developing the proposed system must be given. The limitation of the proposed system should be elaborated.

CONCLUSION: Briefly describe innovation in the approach for implementing the Project, main achievements and also any other important feature that makes the system stand out from the rest.

Submission of Project Report to the University : The student will submit his/her project report in the prescribed format. The Project Report should include:
1. One copy of the summary/abstract.
2. One hard Copy of the Project Report.
3. Soft copy of project on Floppy/CD in a thick envelope pasted inside of the back cover of the project report.
4. The Project Report should not exceed 75 pages (excluding coding).

FORMAT OF THE STUDENT PROJECT REPORT ON COMPLETION OF THE PROJECT
⦿ Cover Page as per format
⦿ Acknowledgement
⦿ Certificate of the project guide/Centre Manager as at Annexure III
⦿ Certificate of the Company/Organisation(for direct candidates)
⦿ Synopsis of the Project
⦿ Main Report
♦ Objective & Scope of the Project
♦ Theoretical Background Definition of Problem
♦ System Analysis & De
♦ User Requirements System Planning (PERT Chart)
♦♦ Methodology adopted, System
Implementation & Details of Evaluation
Output Screen Designed for testing: ports, Printout of the Hardware & Software used System Maintenance &
♦♦ Cost and benefit Analysis
♦ Detailed Life Cycle of the Proj
o ERD, DFD
o Input and
o Process involved
o Methodology us
o Test Report, Printout of the Re
Code Sheet
⦿ User/Operational Manual - including security aspects, access rights, back up, controls, etc.

Annexure:
1. Brief background of the organisation where the student has developed the project.
2. Data Dictionary (This should give a catalogue of the data elements used in the system / sub system developed. The following are the details required. Write NA if NOT applicable :
Data Name , Aliases, if any Length (Size) Type, Numeric, Alpha, Binary etc.
3. List of abbreviations, Figures, Tables

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4. References
Bibliography
Website
5. Soft copy of the project on CD/Floppy

Formats of various certificates and formatting styles are as:
1) Certificate from the Guide
Guide Name & Designation Full Address
CERTIFICATE
This is to certify that this project entitled " _____" submitted in partial fulfillment of the degree of Bachelor of Computer Applications to the College of Management and Information Technology, American Internatiional University West Africa through _____ (Study Centre Name), done by Mr./Ms._____, is an is an authentic work carried out by him/her at _____ under my guidance. The content in this project work has not been submitted earlier for award of any degree or diploma to the best of my knowledge and belief.

Signature of the student

Signature of the Guide

2) Self certificate by the students
SELF CERTIFICATE
This is to certify that the dissertation/project report entitled
"_____" is done by me is an authentic work carried out for the partial fulfillment of the requirements for the award of the degree of Bachelor of Computer Applications under the guidance of _____.
The matter embodied in this project work has not been submitted earlier for award of any degree or diploma to the best of my knowledge and belief.

Signature of the student
Name of the Student Roll No.
 Study Centre Name

ACKNOWLEDGEMENTS
In the "Acknowledgements" page, the writer recognises his indebtedness for guidance and assistance of the thesis adviser and other members of the faculty. Courtesy demands that he also recognise specific contributions by other persons or institutions such as libraries and research foundations. Acknowledgements should be expressed simply, tastefully, and tactfully.

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BIBLIOGRAPHY :(EXAMPLE)

1. D.L. Carney, J.I. Cochrane, "The 5ESS Switching System: Architectural Overview," *AT&T Technical Journal*, vol. **64 ,** no. **6** , July-August 1985, pp. 1339-1356.
2. A. Stevens, *C++ Database Development*, MIS Press, New York, 1992, p. 34.
3. J. Martin, *Computer Data-base Organization*, Prentice-Hall, Englewood Cliffs, NJ,1977, p. 53.