

**SINGHANIA UNIVERSITY**  
Detailed Syllabus BCA

**SYLLABUS & SCHEME**

| Subject Code | Subject Name                                | Year   | Scheme    |          |           | IA         | ESE        | Total Marks |
|--------------|---|--------|-----------|----------|-----------|------------|------------|-------------|
|              |   |        | L         | T        | P         |            |            |             |
| BCA-101      | Computer Fundamentals                       | Year 1 | 4         |          |           | 30         | 70         | 100         |
| BCA-102      | PC Package                                  | Year 1 | 3         | 1        |           | 30         | 70         | 100         |
| BCA-103      | Accounting with Tally                       | Year 1 | 4         |          |           | 30         | 70         | 100         |
| BCA-104      | Operating System                            | Year 1 | 4         |          |           | 30         | 70         | 100         |
| BCA-105      | Internet & Web Page Designing               | Year 1 | 3         | 1        |           | 30         | 70         | 100         |
| BCA-106      | Programming Methodology and C Programming   | Year 1 | 4         |          |           | 30         | 70         | 100         |
| BCA-107      | Relational Database Management System       | Year 1 | 3         | 1        |           | 30         | 70         | 100         |
| BCA-108      | Communicative English                       | Year 1 | 4         |          |           | 30         | 70         | 100         |
| BCA-109      | LAB-1: Coreldraw & Photoshop                | Year 1 |           |          | 4         | 30         | 70         | 100         |
| BCA-110      | LAB-2 (Based on 102,103,104)                | Year 1 |           |          | 4         | 30         | 70         | 100         |
| BCA-111      | LAB-3 (Based on 106,107,108)                | Year 1 |           |          | 4         | 30         | 70         | 100         |
|              | <b>TOTAL :</b>                              |        | <b>29</b> | <b>3</b> | <b>12</b> | <b>330</b> | <b>770</b> | <b>1100</b> |
| BCA-201      | OOP with C++                                | Year 2 | 4         |          |           | 30         | 70         | 100         |
| BCA-202      | Data Structures & Algorithm                 | Year 2 | 3         | 1        |           | 30         | 70         | 100         |
| BCA-203      | Digital Electronics                         | Year 2 | 3         | 1        |           | 30         | 70         | 100         |
| BCA-204      | Elementary Mathematics                      | Year 2 | 4         |          |           | 30         | 70         | 100         |
| BCA-205      | Programming with Java                       | Year 2 | 4         |          |           | 30         | 70         | 100         |
| BCA-206      | Data Communication & Network                | Year 2 | 4         |          |           | 30         | 70         | 100         |
| BCA-207      | System Analysis and Design                  | Year 2 | 4         |          |           | 30         | 70         | 100         |
| BCA-208      | VB.NET                                      | Year 2 | 3         | 1        |           | 30         | 70         | 100         |
| BCA-209      | Minor Project                               | Year 2 |           |          | 4         | 30         | 70         | 100         |
| BCA-210      | LAB-1 (Based on 201,202)                    | Year 2 |           |          | 4         | 30         | 70         | 100         |
| BCA-211      | LAB-2 (Based on 205,208)                    | Year 2 |           |          | 4         | 30         | 70         | 100         |
|              | <b>TOTAL :</b>                              |        | <b>29</b> | <b>3</b> | <b>12</b> | <b>330</b> | <b>770</b> | <b>1100</b> |
| BCA-301      | ASP.NET through C#                          | Year 3 | 4         |          |           | 30         | 70         | 100         |
| BCA-302      | Web Development using PHP                   | Year 3 | 3         | 1        |           | 30         | 70         | 100         |
| BCA-303      | System Software Engineering                 | Year 3 | 3         | 1        |           | 30         | 70         | 100         |
| BCA-304A     | E-Commerce                                  | Year 3 | 4         |          |           | 30         | 70         | 100         |
| BCA-304B     | Data Mining and Warehouse                   | Year 3 | 4         |          |           | 30         | 70         | 100         |
| BCA-304C     | Linux & Shell Programming                   | Year 3 | 4         |          |           | 30         | 70         | 100         |
| BCA-305      | LAB-1 (Based on 301)                        | Year 3 |           |          | 4         | 30         | 70         | 100         |
| BCA-306      | LAB-2 (Based on 302,303)                    | Year 3 |           |          | 4         | 30         | 70         | 100         |
| BCA-307      | Major Project/Seminar & Industrial Training | Year 3 |           |          | 12        | 90         | 210        | 300         |
|              | <b>TOTAL :</b>                              |        | <b>22</b> | <b>2</b> | <b>20</b> | <b>330</b> | <b>770</b> | <b>1100</b> |
|              | <b>GRAND TOTAL :</b>                        |        |           |          |           |            |            | <b>3300</b> |

## BCA – 1<sup>st</sup> Year

### BCA-101: COMPUTER FUNDAMENTALS

#### UNIT – 1

**Computer Overview :**

Computer Definition, Functionality of Computer, Advantage of Computer, Disadvantage of Computer.

**Computer Applications :**

Business, Banking, Insurance, Marketing, Healthcare, Engineering Design, Military, Communication, Government.

#### UNIT – 2

**Computer Generations :**

Generation & Description, Computer Types: PC, Workstation, Mini Computer, Mainframe & Super Copmputer.

**Computer Components :**

Input Unit, Output Unit, Memory & Storage Unit, Control Unit, Arithmetic logic Unit, Input Device- Keyboard, Mouse, Joystick, Light Pen, Track Ball, Scanner, Digitizer, Microphone, MICR, OCR, BCR, OMR & Output Devices- Monitors, Printers.

#### UNIT – 3

**Computer Memory :**

Cache Memory, Primary Memory, Second Memory, RAM & ROM, Computer Motherboard, Computer Memory Units, Computer Ports- Serial, Parallel, PS/2, USB, VGA, Ethernet Port etc. Computer Hardware.

**Computer Software :**

System Software, Application Software, Relationship between hardware & Software.

#### UNIT – 4

**Number System :**

Decimal Number System, Binary Number System, Octal Number System, Hexadecimal Number System, Decimal to Other Base System, Other Base System to Decimal System, Other Base to Non Decimal System, Shortcut Methods.

**Data Communication, Information & Network:**

What is Information, Data processing Cycle. Data Communication & Network.

#### UNIT – 5

**Computer Networking :**

Characteristics of Computer Network.

**Operating System :**

Objectives of OS, Characteristics of OS.

**Computer Internet & Intranet**

Internet, Similarities of Internet & Intranet, Differences of Internet & Intranet, How to Buy A Computer.

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REFERENCE BOOK

- 1 *COMPUTER FUNDAMENTAL (PYAGYA PUBLICATION, MATHURA).*
- 2 *COMPUTER FUNDAMENTAL AND ORGANIZATION(B.RAM),NEW AGE INTERNATONAL PUBLISHER LTD.*
- 3 *RAJARAMAN V, "FUNDAMENTALS OF COMPUTERS", PHI*

## BCA-102: PC PACKAGE

☞ **UNIT-I:**

Introduction to MS-Word, Parts of MS-Word Windows (Title Bar, Menu Bar, Tool Bar, Ruler, Status Area) Creating New Documents, Opening an existing Documents, Find and Replacing, Moving and Copying Text, Page Set-up, Margins and Gutters, Creating a document using Templates and Wizards.

Text Formatting-Changing Fonts and Font size, Make Text Bold, Italic and Under line, Spacing, Centre, Right and Left alignment, Page Breaks, Headers and Footers, Saving Documents.

☞ **UNIT-II:**

Spell Checking, Printing, Creating a table using table Menu-Entering and Editing text, Selecting, Adding and Deleting Rows and Columns, Changing and Shading Template and Wizard, Working with Graphics, Drawing objects, Using frames to position objects, Mail Merge.

☞ **UNIT-III:**

Introduction to MS-Excel, Creating a simple worksheet, Entering data into worksheet, Computations in Worksheets, Printing the Worksheet, Creating Graphs and Charts, What if analysis (Data Sort, Fill, Query, Filter), Copying, Renaming, Moving, Adding and Deleting, Worksheet.

Using Formulas and Functions-Formula, Characteristics of formula, Entering formula, Copying formulas, Types of functions (date, Mathematical, Logical, Statistical ), Function Wizard, Formatting of using Auto format.

☞ **UNIT-IV:**

Introduction to MS-PowerPoint, PowerPoint elements, Templates, Wizards, Views and Color Schemes, Exploring PowerPoint menu, Adding text, Adding title, Adding text area, Resizing text boxes, Adding art, Starting a New Slide, Slide Transition Effects and other Animation Effects, Starting a Slide Show, Saving Presentation, Printing Slide, Display of Slide Show.

☞ **UNIT-V:**

Introduction to Databases, Starting Access 2007 Getting Started Page and Opening a Database, Understanding the Access Program Screen, Understanding the Ribbon, Using the Office Button and Quick Access Toolbar, Creating a New Database, Creating a Table, Modifying a Table, Creating a Query, Sorting a Query, Using AND and OR Operators in a Query

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*REFERENCE BOOK*

- 1 *RAVINDRA SHARMA ( ASIAN PUBLICATION)*
- 2 *PRYAGYA PUBLICATION ( MATHURA)*
- 3 *MICROSOFT OFFICE (VISHNU PRIYA SINGH)*

## **BCA-103: FINANCIAL ACCOUNTING WITH TALLY**

### **UNIT-I TALLY FUNDAMENTALS**

Basic Concepts of Accounting, Financial Statements, Financial Statement Analysis, Cost Centre, Basic concepts of Inventory. 2. Tally Configuration & INI setup, Data Directory & Folders configuration, Single & Multiple User, Tally Screen Components, Mouse / Keyboard Conventions & Key, Combinations, Switching between screen areas, Quitting Tally. Maintaining Company Data, Basic Company Details, Create/Alter/Select/Load/Close a Company, Chart of Accounts, Company Features, and Configuration.

### **UNIT-II BASIC ACCOUNTING:**

Create, Alter & Display Groups and Ledgers, All accounting voucher types, Accounting Voucher transactions, Account Invoice transactions, Excise Invoice, Export Invoice, Transactions using Bill-wise details, Bank Reconciliation, Interest calculations using simple & advance parameters, Interest calculations on outstanding balances & on invoices, Use of voucher class, adjustment of interest, Creation of voucher class, Invoice entry in a class situation, Create, Alter & Delete Budgets for groups, ledgers & cost centre, Defining credit limit & credit period, Display Budgets & variances, Create, Alter & Delete a scenario. Journal Transactions, payment voucher, Godown summary .

### **UNIT - III ACCOUNTING REPORTS AND BOOKS OF ACCOUNTS**

Reports like balance sheet, Profit & Loss account, Ratio analysis Trial Balance.

Accounts books like cash / bank book, All Ledgers Group summary & vouchers, Sales, purchase & journal registers, Cost centre & category summary, Cost centre breakup ledger & group breakup, outstanding receivables & payables, interest receivable & payable, Statistics, Cash & Fund flow, Day book List of Accounts, Reversing journals, optional vouchers, post-dated vouchers .

### **UNIT - IV INVENTORY ACCOUNTING AND INVENTORY REPORTS**

Create, Alter & Display Stock Groups and Stock Items, All inventory voucher types and transactions Inventory details in accounting vouchers, Reports like Stock summary, Inventory books like Stock item, Group summary, Stock transfers, Physical stock register, Movement analysis, Stock group & item analysis, stock category analysis Ageing analysis, Sales order & Purchase order book, Statement of inventory related to Godowns, categories, stock query, Reorder status, Purchase & Sales order summary, Purchase & Sales bill pending, Exception reports like negative stock & ledger, overdue receivables & payables, memorandum vouchers, optional vouchers, post-dated vouchers, reversing journals.

### **UNIT – V PRINTING, HOUSEKEEPING AND ADMINISTRATION**

Cheque Printing, Common printing options, Different printing formats, Multi-Account printing, Dynamic- Report specific options, Creating Group Company, Use of Tally vault, Using Security control & defining different security levels, Use of Tally Audi., Back-up & Restore, Splitting company data, Export & import of Data, ODBC compliance, use of E-mail, Internet publishing, Upload, web browser & online help, Re-write data.

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#### *REFERENCE BOOK*

- 1      *PRYAGYA PUBLICATION (MATHURA)*
- 2      *Computerised Accounting Using Tally.ERP 9*  
By : Tally Education Private Limited
- 3      *Computerised Accounting tally ( BY : Vikas Gupta)*

**BCA-104: INTERNET AND WEB PAGE DESIGN**

**UNIT – 1**

**Overview of Internet :**

What is Internet, Internet Evolution, Advantage & Disadvantage of Internet, Extra Net, Reference Models, Layers, TCP/ IP Model, Domain name system Architecture, DNS Working.

**UNIT – 2**

**Internet Services & Protocols :**

Communication Services, Web Services, World Wide Web, Video Conferencing, Internet Protocols, TCP, IP, UDP, FTP, HTTP, Email, IMAP, POP, Email Working, E-mail Security.

**UNIT – 3**

**Web Designing Concepts & Hosting :**

Wireframe, Web Designing Tools, Web Development Process, Websites Hosting, Types of Hosting, Web sites Security, World Wide Web Evolution & Architecture, Web Browsers, Web Server, Proxy Server, Search Engines, Usenet, Digital Signature, Firewall Security.

**UNIT – 4**

**HTML – Overview :**

HTML Document Structure, Basic Tags- Heading Paragraph, Line Break, Center Etc, HTML Elements, HTML Attributes.

**UNIT – 5**

**HTML Formatting :**

Type Style, Meta Tags, Comments, Images, Tables, Text Links, HTML Fonts etc.

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*REFERENCE BOOK*

- 1      *PRYAGYA PUBLICATION : MATHURA*
- 2

**BCA-105: RDBMS (SQL)**

**UNIT – 1**

Overview of Database, Components of database, Functions & advantage of DBMS, Database Architecture, Database Model, Codd's Rule, RDBMS Concepts, Database Keys.

**UNIT – 2**

Normalisation of Database, E-R Diagram, Components of E-R Diagram, Entity, Attribute, Relationship, Binary Relationship, Recursive Relationship, Generalization, Specialization, Aggregation.

**UNIT – 3**

Introduction to SQL, SQL Commands, DDL commands: create, alter, truncate, drop, rename, DML commands: insert, update, delete, merge,

**UNIT – 4**

TCL commands: commit, rollback, savepoint, DCL commands: grant, revoke, DQL commands: select

**UNIT – 5**

Division Operator in SQL

**UNIT – 6**

Advance SQL

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*REFERENCE BOOK*

- 1 *Database Design and Implementation*  
Author(s) Howard Gould  
Publisher: bookboon.com (2015)
- 2 *RDBMS (PRYAGYA PUBLICATON , MATHURA)*
- 3 *ORACLE DATABSE, THE COMPLETE REFERENCE (KEVIN LONEY )*

**BCA-106: Programming Language in C Language**

**UNIT - 1**

**Basic of C Language:**

Overview of C, Features of C , My First C Program, Compile and Run C program, C syntax Rules, Keyword and identifier.

**operator and Data type in C:**

Operator in C Language: arithmetic, R elational, Logical & Bitwise operator, Data type in C.

**UNIT - 2**

**Variables in C :**

Variable in C,Data type of Variable, Declaring,Defining and Initializing a variable, Difference between Variable and identifier, C input & output, Decision making in C.

**Switch Statement & Looping in C :**

Switch Statement in C,How to use Loops in C, Types of Loops.

**UNIT - 3**

**Arrays & Storage Classes :**

Arrays in C, Two dimensional Arrays, String & Character Arrays, String Handling Functions, Storage Classes in C, External & Global Variable, Static Variables, Register Variable.

**Functions in C :**

Functions in C, Use of Functions,Passin g Arguments to a Functions, Type of user defined Functions, Nesting of Functions, Recursion, Call of Function, Pass Array to a Function.

**UNIT - 4**

**Structures & Unions in C :**

Structure, Declaring Structure Variables, Arrays of Structure, Nested Structures, typedef in C, Union in C language.

**Pointers in C :**

Introductions to Pointers, Concept, Ben efit of Pointers, Declaring & Initializing and using a pointer of Variable.

**UNIT - 5**

**File Input/Output in C :**

File Input/Output in C,Creating or Opening a file, Closing a file, Difference between Append & Write Mode.

**Dynamic Memory Allocation i n C :**

Memory allocation process, Allocating block of Memory, Command Line Argument in C.

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*REFERENCE BOOK*

- 1 *THE COMPLETE REFERENCE WITH C ( HERBERT SCHILDT )*
- 2 *LET US C by Yashwant Kanetkar*
- 3 *PROGRAMMING IN C ( E. BALAGURUSWAMY )*
- 4 *PRYAGYA PUBLICATION ( MATHURA )*

**BCA-107: OPERATING SYSTEM**

**UNIT – 1**

**Operating System Concepts:**

Feature of OS, Objectives & Characteristics of OS, History , Type of OS, Booting , Cold Reboot, Input/ Output System, Dos & Disks, Important Terms- Dos Prompt, Command, Compiler, FAT, Interface, Logged Disk, Error Message, Bios, Sectors, Chache, Conventional Memory, Cluster.

**UNIT – 2**

**Internal Commands in MS-DOS:**

Internal Commands- Date, Time, Ver, Vol, Cls, Prompt, Dir, CD, MD, RD, Path, Copy, Copy Con, Del, REN.

**UNIT – 3**

**External Commands in MS-DOS:**

FORMAT, LABEL, CHKDSK, DISKCOPY, UNFORMAT, UNDELETE, SYS, TREE, DELTREE, MOVE, MORE, BACKUP, RESTORE, ATTRIB, XCOPY, MODE, DEFRAG, Batch File.

**UNIT – 4**

**Introduction to Window 7:**

Windows Features- Desktop, Icon, Dialogue Box, Start Menu, Taskbar, Start Up & Shut Down, Manipulating Windows- Maximize, Minimize, Resize, Close, Saving, Deleting File, Create Folder, Help, Setting, Search, Windows Keyboard Shortcuts, Right Click Menu.

**UNIT – 5**

**Linux Operating System :**

What is Linux, Kernal, Shell, File System Hierarchy Standard, Linux Basic Commands- pwd, ls, cd, mkdir, rm, touch, man, cp, mv, locate, echo, cat, vi, sudo, df, du, tar, zip, uname, apt-get, chmod, ping Etc.

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**TEXT & REFERENCE BOOKS:**

- 1 *DOS QUICK REFERENCE BY RAJEEV MATHUR, GALGOTIA PUBLICATIONS LINUX*
- 2 *COMPLETE BY BPB PUBLICATIONS*
- 3 *PETER NORTON COMPLETE GUIDE TO LINUX BY PETER NORTON, TECHMEDIA PUBLICATIONS*
- 4 *LEVEL MODULE M 1.1 INFORMATION TECHNOLOGY BY KHANNA BOOK PUBLICATIONS, NEW DELHI*
- 5 *WINDOWS XP COMPLETE REFERENCE, BPB PUBLICATION*

**BCA-108: COMMUNICATIVE ENGLISH**

**UNIT-I**

Sentences : Simple, Compound, Complex, Assertive, Interrogative, Imperative, Exclamatory. Clauses : Co-ordinate, Sub-ordinate, Relative, Adverb, Comparative (Adverb + Adjective)

Articles : usage of 'A', 'An', 'The' Preposition : Position of Prepositions, Place Relations Time Relations and other relations.

**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, Active and Passive. Determiners

**UNIT-III**

Translate 5 sentences from Hindi to English. Translate 5 sentences from English to Hindi.

**UNIT-IV**

Essay writing, letter writing, application writing, Sentences reordering or Sentence Transformation

**UNIT-V**

Job Application, Curriculum vitae, Resume & Biodata

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**TEXT & REFERENCE BOOKS:**

- *A PRACTICAL ENGLISH GRAMMAR BY THOMSON AND MARTINET*
- *ENGLISH GRAMMAR BY W.S.ALLEN*
- *INTERMEDIATE ENGLISH GRAMMAR BY RAYMOND WILLIAMS*
- *VOCABULARY BY MICHAEL MC CARTHU AND FELICITY O'DELL*
- *ENGLISH GRAMMER BY JAYANTHI DAKSHINA MURTH*

**BCA-109: LAB-1: Coreldraw & Photoshop**

**UNIT - I**

D.T.P For Publications: Introductions to Printing, Types of Printing, Offset Printing, Working of offset Printing, Transparent Printout, Negative & Positives for Plate were making, Use of Desk Top Publishing in Publications, Importance of D.T.P in Publication, Advantage of D.T.P in Publication, Mixing of graphics & Image in a single page production, Laser printers - Use, Types, Advantage of lager printer in publication.

**UNIT - II**

Introduction to Tools of CorelDraw, Managing Palettes ,Working with Images, Patterns and Textures, ,Working with Shapes, Colours and Fills ,Image Rasterisation and Editing, Transformation Menu.

**UNIT - III**

Coreldraw Page Setup and Designing, Using Styles and Templates, Working with Text, Formatting Text, Text Attributes. Designing Different Page Layouts, Column Layout, Working with Layers., Special Effect to Objects and Texts, Contour Tool, Layout for News Paper and Magazines. Preparation of Visiting Cards & Invitation Cards, & Logo Design,

**UNIT - IV**

Introduction to Adobe Photoshop & Documents ,Various Graphic Files and Extensions Vector Image and Raster Images, Various Colour Modes and Models.

**UNIT - V**

Introduction to Screen and Work Area, Photoshop Tools & Palettes ,Use of Layers & Filters Working with Images.

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**REFERENCE BOOK**

- 1 **BPB DTP COURSE (SATIS JAIN)**
- 2 **PRYAGA PBUBLICATION (MATHURA)**
- 3 **SMART DTP COURSE ( SAUMYA RAJAN BEHRA)**
- 4 **CORELDRAW X4 FOR SIMPLE STEPS**