



## BCA I Semester Syllabus

Course Code	Course Title	Type	Total Credit	EOSE Marks	Internal Assessment Marks	Total Marks
BCA-51T-101	Programming in C	Theory	4	80	20	100
BCA-51P-102	Programming in C Lab	Practical	2	40	10	50
BCA-51T-103	Web Application Development	Theory	4	80	20	100
BCA-51P-104	Web Application Development Lab	Practical	2	40	10	50
BCA-51T-105	Computer Fundamental & Office Management Tools	Theory	4	80	20	100
BCA-51P-106	Office Management Tools Lab	Practical	2	40	10	50
BCA-51T-107	General Hindi	AEC	2	40	10	50
BCA-51T-108	Foundation of English language	AEC	2	40	10	50
BCA-51T-109	Computer Fundamental	SEC	2	40	10	50
BCA-51T-110	Anandam	VAC	2			50
		Total Credit	26			

## **BCA-51T-101: Programming in C**

### **UNIT- I**

Basic concepts of Programming languages, Programming Domains, Language Evaluation criteria and language categories, Evolution of major programming languages. Describing syntax and semantics, formal methods of describing syntax, Pseudo code, Design of Algorithm & Flowchart

### **UNIT- II**

**Fundamentals of C:** History and importance of C, basic structure and execution of C programs, constants, variables, and data types, Various type of declarations, operators types and expressions, evaluation of expressions, operator precedence and associability. Managing input and output operations, decision making and branching.

**Iteration:** while, do...while, for loop, nested loops, break & continue, goto statements.

### **UNIT- III**

**Array and String:** One-dimensional array and their declaration and initialization, two dimensional arrays and their initializations, character arrays (One and Two dimensional), reading and writing strings, string - handling functions.

**Functions:** Need and elements for user –defined functions, definition of functions, return values and their types, function calls and declaration, recursion, parameter passing, passing arrays and strings to functions, the scope, visibility and life time of variables.

### **UNIT-IV**

**Understanding Pointers:** Accessing the address of a variable, declaration and initialization of pointer variables, accessing a variable through its pointer, pointers and arrays, pointers and function arguments, functions returning pointers.

**Structures and Unions:** Defining structure, declaring structure variable and accessing structure members, initialization of structure, operation on individual members, and array of structures, union, size of structure.

#### **Recommended Books:**

1. Balagurusamy E; Programming in ANSI C;Fifth Edn; Mc Graw Hill,2011.
2. Kanetkar Y.; LET US C; X Edition, BPB,2010.
3. Deitel HM & Deitel JP; C How to program; 5<sup>th</sup> Edn; Pearson Pub
4. Gottfried B; Programming with C: Schaum Outlines; Mc Graw Hill Edition.

## Programming in C Lab

Course Code: BCA-51P-102	Course Title: Programming in C Lab
Course Credit : 02	Hours/Week: 04

Content : **Recommended exercises**

Part A:

1. Program to read radius of a circle and to find area and circumference
2. Program to read three numbers and find the biggest of three
3. Program to demonstrate library functions in math.h
4. Program to check for prime
5. Program to generate n primes
6. Program to read a number, find the sum of the digits, reverse the number and check it for palindrome
7. Program to read numbers from keyboard continuously till the user presses 999 and to find the sum of only positive numbers
8. Program to read percentage of marks and to display appropriate message (Demonstration of else-if ladder)
9. Program to find the roots of quadratic equation (demonstration of switch Case statement)
10. Program to read marks scored by n students and find the average of marks (Demonstration of single dimensional array)
11. Program to remove Duplicate Element in a single dimensional Array
12. Program to perform addition and subtraction of Matrices

Part B:

1. Program to find the length of a string without using built in function
2. Program to demonstrate string functions.
3. Program to demonstrate pointers in C
4. Program to check a number for prime by defining isprime( ) function
5. Program to read, display and to find the trace of a square matrix
6. Program to read, display and add two m x n matrices using functions
7. Program to read, display and multiply two m x n matrices using functions
8. Program to read a string and to find the number of alphabets, digits, vowels, consonants, spaces and special characters.
9. Program to Reverse a String using Pointer
10. Program to Swap Two Numbers using Pointers
11. Program to demonstrate student structure to read & display records of n students.
12. Program to demonstrate the difference between structure & union.

Note: Student has to execute a minimum of 10 programs in each part to complete the Lab course.

## Web Application Development

Course Code: <b>BCA-51T-103</b>	Course Title: <b>Web Application Development</b>
Course Credit : <b>04</b>	Hours/Week: <b>04</b>

### Course Outcomes (COs):

On completion of the course, the student will be able to:

1. Understand best technologies for solving web client/server problems
2. Analyze and design real time web applications
3. Use Java script for dynamic effects and to validate form input entry
4. Analyze to Use appropriate client-side and Server-side application technology

## BCA-51T-103 : Web Application Development

### Unit – I

**The Internet** – Basic of internet, file transfer, telnet, usenet, gopher, wais, Archie and veronica. Introduction to Internet Protocols-, HTTP, FTP, SMTP protocols.

**World Wide Web** : Elements of the Web, Web browser and its architecture, The web server, the proxy server. Microsoft internet explorer, viewing pages with a browser, using a browser for Mail, News and chat, Security and Privacy issues (cookies, firewalls, Data Security, executable Applets and scripts, blocking system).

### Unit – II

**HTML Fundamentals:** Introduction to HTML, HTML Elements, HTML Semantics, HTML 5 Doc Types, New Structure Tags, Section, Nav, Article, Aside, Header, Footer, HTML Attributes, Headings, Paragraphs, Styles, Quotations, Blocks, Classes, Layout, Iframes, Creating HTML Pages, incorporating Horizontal Rules and Graphical Elements, Hyper-links, Creating HTML Tables, Creating HTML Forms, HTML and Image Techniques, HTML and Page, Development of Website and Webpage (Planning, Navigation and Themes, Elements of a Web page, steps of creating a site, publishing and publicizing site structuring web site).

### Unit-III

**Cascading Style Sheets:** Understanding Style Sheets, CSS Syntax and Applying Style Sheets to HTML document. Developing Style Sheets: inline, internal and external. CSS Selectors, <DIV> tag, Using class and ID, Styling Backgrounds, Styling borders, Styling Text, Styling Fonts, Styling Links, Styling Lists, Styling Tables, Margin, Flex and Grids. **Bootstrap & Web page design** : CMS, Banks of CMS, Joomla/wordpress-Installation. Design and development of websites.

### Unit-IV

**Java script:** Introduction to scripting language, Client Side Scripting, memory concepts, arithmetic decision making. Java script control structures, Java script functions, JS Popup Boxes, events, program modules in java script, function definitions duration of identifiers, scope rules, Controlling Programming Flow, recursion java script global functions. Arrays handling in Java script, The Java Script Object Model, Developing Interactive Forms. Validation of Forms, Cookies and Java Script Security Controlling Frames in Java Script. Client – Side Java Script Custom.

#### References :

1. The Colete eference: HTML & XHTML; Thomas A. Powel, 4<sup>th</sup> Edn.
2. Mastering HTML 4.0 by Deborah S.Ray an Eric J. Ray From BPB
3. Mastering Java Script, BPB publication.
4. Internet and web technology by Raj Kamal, TMH Publication 2. Steven Holzner.
5. The Complete Reference Java Scripts,, Tata McGraw – Hill,3<sup>rd</sup> Edn.
6. Java Script, Don Gosselin,Vikas publications

## **Web Application Development Lab**

Course Code: <b>BCA-51P-104</b>	Course Title: <b>Web Application Development Lab</b>
Course Credit : <b>02</b>	Hours/Week: <b>04</b>

### **Content : Recommended exercises**

#### **HTML:**

1. Basics Elements & Attributes, HTML Formatting tags, Links,
2. Images, Tables, Forms Elements
3. HTML5 Audio and Video, HTML5 Input Types & Attributes
4. CSS Syntax, CSS Attribute Selectors
5. CSS properties: Fonts, Background, Colors, Links, Lists,
6. CSS Box Model, Display, Opacity, Float, Clear
7. CSS Layout, CSS Navigation Bar,
8. CSS Rounded Corners, CSS Border Images, CSS Animations

#### **JavaScript:**

1. Displaying Output, Declaring Variables, Operators, Arithmetic, Data Types, Assignment,
2. JavaScript Functions, Booleans, Comparisons, Conditional ,
3. JavaScript Switch, Loops, Break, Type,
4. JavaScript Objects, Scope,
5. Strings and String Methods
6. Numbers and Number Methods, Math, JavaScript Dates: Formats and Methods
7. JavaScript Events, JavaScript, JavaScript Forms (API and Validation), Objects,
8. JavaScript Functions, JavaScript DOM, JavaScript Validation, Browser BOM

# Computer Fundamental & Office Management Tools

Course Code: <b>BCA-51T-105</b>	Course Title: <b>Computer Fundamentals &amp; Office Management Tools</b>
Course Credit : 04	Hours/Week: 04

## Course Outcomes (COs):

- Introduction to computers, classification of computers, anatomy of computer, constituents and architecture, microcontrollers
- Internet basics, features, applications, services, internet service providers, domain name system, browsing, email, searching
- Introduction to Internet basic, e-mail, Web basics, introduction of HTML and CSS programming .
- Introduction of computers, classification of computers, anatomy of computer, constituents and architecture, microcontrollers.
- Office Activities using Word Processor Software
- Office Activities using Spreadsheets Software
- Office Activities using Presentation Software
- Office Activities using Database Software
- Office Activities involving Multimedia Editing (Images, Video, Audio ...)
- Operating System Configuration, MS Configuration.

## BCA-51T-105: Computer Fundamentals & Office Management Tools

### UNIT- I

**Introduction to Computers:** Characteristics of computers, Evolution of computers, generation of computers, Block diagram of computer & role of each block, classification of computers. Input and Output Devices

**Primary and Secondary Memory:** Memory hierarchy, Random access memory (RAM), types of RAM, Read only memory (ROM), types of ROM. Classification of secondary storage devices, magnetic tape, magnetic disk, optical disk.

**Number Systems:** Introduction to number system, Binary, Octal, Hexadecimal, conversion between number bases. Arithmetic operations on binary numbers, Alphanumeric- BCD, EBCDIC, ASCII, Unicode.

### UNIT- II

**Computer Software:** software categories, system software, application software, utility software. Classification of system software, **Computer Languages:** Introduction, classification of programming languages, generations of programming languages, features of a good programming language.

**Internet Basics:** Introduction,, Features of Internet, Internet applications, Services of Internet, Logical and Physical addresses, Internet Service Providers, Domain Name System. **Web Basics :** Introduction to Web, Web browsers, http/https,URL.



### UNIT- III

**MS Word:** Word processing, MS-Word features, creating saving and opening documents in Word, interface, toolbars, ruler, menus, keyboard shortcut, editing, previewing, printing & formatting a document, advance features of MS Word, find & replace, using thesaurus, mail merge, handling graphics, tables, converting a Word document into various formats like-text, rich text format, Word perfect, etc.

**MS Excel:** Worksheet basics, creating worksheet, entering data into worksheet, data, text, dates, alphanumeric values saving & quitting worksheet, opening and moving around in an existing worksheet, Toolbars and menus, Keyboard shortcuts, working with single and multiple workbook, working with formula & cell referencing, Auto sum, coping formulas, absolute and relative addressing, formatting of worksheet, previewing & printing worksheet. Graphs and Charts, Database, macros, multiple worksheets-concepts.

### UNIT- IV

**Power Point:** Creating and viewing a presentation, managing Slide Shows, navigating through a presentation, using hyperlinks, advanced navigation with action setting and action buttons, organizing formats with Master Slides, applying and modifying designs, adding graphics, multimedia and special effects.

**Microsoft Access:** Planning a database (tables, queries, forms, reports), creating and editing database, customizing tables, linking tables, designing and using forms, modifying database structure, Sorting and Indexing database, querying a database and generating reports.

#### Reference Books:

1. Sanjay Saxena; A First Course in Computers 2003 Edition; Vikas Pub.
2. Computer Fundamentals by P.K. Sinha, BPB Publication.
3. Computer Fundamentals and Programming in C,Reema Thareja,OXFORD University Press.
4. Microsoft; 2007/2010 Microsoft Office System; PHI.
5. Microsoft; Microsoft Office 2007/2010: Plain & Simple; PHI.
6. MS-Office , Dr. S.S. Shrivastava, Published by Laxmi Publication.
7. Office 2019:In Easy Steps,Michal Price ,BPB Publication.

### **Office Management Tools Lab**

Corse Code: <b>BCA-51P-106</b>	Course Title: <b>Office Management Tools Lab</b>
Course Credit : 02	Hours/Week: 04

#### **Content:** Content : Recommended exercises

Exercises based on Word, Excel, Power Point and Access.

# Ability Enhancement Course **AEC**

## **AEC (General Hindi)**

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Total 50 Marks(40+10)

40 marks (EOSE)

Part A- 8 Questions of 2 Marks each (16 Marks)

Part B – 2 Questions of 4 Marks each (8 Marks)

Part C – 2 Questions of 4 Marks & 1 question of 8 Marks (16 Marks)

10 Marks (Internal Assessment)



बी.ए./बी.एससी./बी. कॉम – प्रथम सेमेस्टर

सामान्य हिन्दी (व्याकरण)

2 क्रेडिट– 50 अंक  
प्रश्न पत्र– 40 अंक  
आंतरिक मूल्यांकन– 10 अंक

उद्देश्य (Objectives)	<ol style="list-style-type: none"><li>1. विद्यार्थियों में अभिव्यक्ति कौशल विकसित करना।</li><li>2. हिन्दी भाषा को अधिक सशक्त और व्यापक बनाना तथा विद्यार्थियों में भाषा प्रयोग की क्षमता को विकसित करना।</li><li>3. शोध के लिए नवीन शैक्षिक दृष्टि की पृष्ठभूमि तैयार करना।</li><li>4. सृजनात्मक लेखन तथा आलोचनात्मक दृष्टि का विकास करना।</li></ol>
अधिगम प्रतिफल (Learning Outcomes)	<ol style="list-style-type: none"><li>1. भाषायी ज्ञान से अभिव्यक्ति और सम्प्रेषण कौशल का परिमार्जन हो सकेगा।</li><li>2. हिन्दी व्याकरण का ज्ञान सृजनात्मकता में उपयोगी सिद्ध हो सकेगा।</li><li>3. भाषायी क्षमता से वैश्विक परिदृश्य में हिन्दी का उन्नयन कर सकेंगे।</li><li>4. हिन्दी भाषा का व्यावहारिक ज्ञान प्राप्त कर सकेंगे।</li></ol>

प्रश्नपत्र का अंक विभाजन

यह प्रश्नपत्र तीन खण्डों (अ, ब, स) में विभक्त है।

खण्ड– अ के अंतर्गत प्रश्न संख्या 1 में इकाई 1 के भाग (क) एवं (ख) तथा इकाई 2 के भाग (क) एवं (ख) प्रत्येक से दो-दो प्रश्न कुल आठ प्रश्न पूछे जाएंगे। प्रत्येक प्रश्न 02 अंक का होगा।

खण्ड– ब के अंतर्गत प्रश्न संख्या 2, 3 में इकाई 3 के भाग (क) एवं भाग (ख) से एक-एक प्रश्न पूछा जाएगा। प्रत्येक प्रश्न 04 अंक का होगा।

खण्ड– स के अंतर्गत प्रश्न संख्या 4, 5, 6 दीर्घ उत्तरीय प्रश्न हैं जिसमें इकाई 4 के भाग (क) से दो प्रश्न (प्रत्येक 04 अंक) तथा भाग (ख) से एक प्रश्न (आंतरिक विकल्प सहित) 8 अंक का होगा।

इकाई-1

(क) शब्द निर्माण– उपसर्ग एवं प्रत्यय, संधि एवं समास।

(ख) शब्द के प्रकार– संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया-विशेषण।

## इकाई-2

(क) शब्द एवं वाक्यगत अशुद्धि संशोधन।

(ख) मुहावरे एवं लोकोक्तियाँ अर्थ एवं वाक्य प्रयोग।

## इकाई-3

(क) संक्षेपण।

(ख) पल्लवन।

## इकाई-4

(क) पत्र लेखन शासकीय एवं अर्द्धशासकीय पत्र, कार्यालय आदेश, अधिसूचना, ज्ञापन, अनुस्मारक निविदा का प्रारूप।

(ख) निबंध लेखन (शब्द सीमा-400)

## आंतरिक मूल्यांकन

राजस्थान के किसी ऐतिहासिक अथवा सांस्कृतिक स्थल की यात्रा पर विवरणात्मक लेख।

### अनुशंसित ग्रंथ-

1. हिन्दी व्याकरण- कामताप्रसाद गुरु
2. हिन्दी की वर्तनी और शब्द विश्लेषण- किशोरी दास वाजपेयी
3. हिन्दी भाषा की संरचना- भोलानाथ तिवारी
4. अच्छी हिन्दी- रामचन्द्र वर्मा
5. आधुनिक हिन्दी व्याकरण और रचना- डॉ. वासुदेवनन्दन प्रसाद, भारती भवन पब्लिशर्स एण्ड डिस्ट्रीब्यूटर्स
6. हिन्दी का मानक स्वरूप - देवर्षि कलानाथ शास्त्री, साहित्यागार, जयपुर
7. अनुप्रायोगिक हिन्दी- डॉ. कृष्ण कुमार गोरखामी, अरुणोदय प्रकाशन, नई दिल्ली

# AEC (General English)

Total 50 Marks(40+10)

EOSE- 40 Marks

Unit I- 5 Marks

Unit II- 5 Marks

Unit III- 10 Marks

Unit IV – 20 Marks

Internal Assessment 10 Marks

## Foundations of English Language: A Comprehensive Introduction 2023-24 Semester I

General English

Credit: 2

Duration: 3 hrs

Max. Marks: 50

(40+10)

The syllabus aims at achieving the following objectives:

1. Enhancing vocabulary with different types of words
2. Translation from Hindi to English and vice versa
3. Reinforcing selected components of grammar and usage
4. Strengthening comprehension of poetry, prose and short-stories
5. Strengthening compositional skills in English for paragraph writing, CVs and job applications.

The Pattern of the Question Paper will be as follows:

### Unit I: Vocabulary and Translation

1. Homophones and Homonyms
2. Translation of 05 Words from Hindi to English  
from English to Hindi

(20 marks) (5)

(06)

(07)

(07)

### Unit II: Grammar and Usage

3. Elements of a Sentence
4. Tense
5. Punctuation of a Short Passage with 10 Punctuation Marks  
(As discussed in Quirk and Greenbaum)

(15 marks) (5)

(05)

(05)

(05)

### Unit III: Comprehension

Following Essays and Stories in *Essential Language Skills* revised edition compiled by Macmillan for University of Rajasthan General English B. A. /B. Com./B. Sc.

Candidates will be required to answer 5 questions out of ten questions from the prescribed texts. Each question will be of two (5) marks. (25)

(45 marks) (10)

6. Bernard Shaw
7. Ruskin Bond
8. M.K. Gandhi

*Spoken English and Broken English*  
*Night Train at Deoli*  
*The Birth of Khadi*

9. The candidates will be required to answer 5 questions from an unseen passage.

(15)

10. One vocabulary question of 5 words from the given passage.

(5)

#### Unit IV: Compositional Skills

11. Formal Letter and Writing Emails

(20 marks)

(10)

12. Paragraph Writing

(10)

20

#### Recommended Reading:

Sasikumar, V., Dutta and Rajeevan, A Course in Listening and Speaking-I Foundation Books. 2005.

Sawhney, Panja and Verma eds. English At the Workplace, Macmillan 2003.

Singh, R.P. Professional Communication. OUP. 2004

Judith Leigh. CVs and Job Applications. OUP. 2004

Arthur Waldhorn and Arthur Zeiger, English Made Simple. Upa and Co.

Gunashekar ed. A Foundation English Course for Undergraduates. Book I, CIEFL, Hyderabad.

Quirk and Greenbaum: A University Grammar of English Longman, 1973

## VAC (Anandam) 50 Marks

### Examination Scheme:

#### Programme Evaluation Methods:

S.No.	Parameters	Max. Marks
1	Entries in Daily Diary	05
2	Synopsis of Project	10
3	Participation in Anandam Day ( Last working day of every month)	10
4	Report of Group Project	25
	Total	50

## SEC (Computer Fundamental)

EOSE- 40 Marks

40 Multiple choice questions of 1 marks each

Duration -1 Hour

Internal assessment – 10 Marks

## SEC-001 – Computer Fundamentals

Semester	Code of the Course	Title of the Course/Paper		NHEQF Level	Credits
I/II	SEC-001	Computer Fundamentals		5	2
Level of Course	Type of the Course	Credit Distribution		Offered to NC Student	Delivery Type of the Course
		Theory	Practical		
Introductory	Skill Enhancement	2	-	Yes	30 Hours Theory

### Examination Scheme-

#### Regular Students –

Type	Paper code and Nomenclature	Duration of Examination	Maximum Marks (Midterm + EoSE)	Minimum Marks (Midterm + EoSE)
Theory	SEC-001 –Computer Fundamentals	1 Hrs-MT	10 Marks-MT	4 Marks-MT
		1 Hrs-EoSE	40 Marks-EoSE	16 Marks-EoSE

Question paper for Computer Fundamentals will be so set that it has 40 multiple choice questions (Bilingual) of one mark each. The Question paper will be of duration of 1 hours. The examinees will have to give their answers on OMR sheet only to be provided by the University whose evaluation will be done based on OMR Scanning Technology.

## SEC-001- Computer Fundamentals

### Unit – I

**Introduction to Information Technology:** Evolution and generation of computers, Type of computers, Micro, mini, mainframe and Super computer. Architecture of a computer system: CPU, ALU, Memory (RAM, ROM families, Cache Memory, Input/Output Devices, Pointing Devices, Hardware and Software

**Operating System and Programming Languages:** Concept of Operating System, Need, Types of Operating Systems, Batch, Single User, Multi-Processing, Distributed and Timeshared operating systems, Introduction to UNIX, Linux, Windows, Window NT, Virtual Machine, Programming Languages, Low Level and High Level, Generation of Languages, 3 GL and 4 GL languages, Procedural Programming Languages, Object Oriented Programming languages, Functional Programming Languages, Scripting Languages, Logic Programming Languages, Command Line Interface and Graphical User Interface

(8 Lectures)

### Unit -II

**The Internet:** History and Functions of the Internet, Working with Internet, Web Browsers, World Wide Web, Uniform Resource Locator and Domain Names, Uses of Internet, Search for Information, Email, Chatting, Instant Messenger Services, News Group, Teleconferencing, Video Conferencing, E-Commerce and M-Commerce, E-services -Online Banking, Online Payment Modes, Mobile Wallets, Social Networking Sites, E-Learning/ Online Educations, Cloud-Based Storage, Digital Signature

Manage an E-Mail Account, E-Mail Address, Configure E-Mail Account, Login to an Email, Receive Email, Sending Email, Sending Files as Attachments, Adress Book, Downloading files

(8 Lectures)

### Unit -III

**Social, Legal, Ethical Matters and Network Security:** Types of Cyber Threats, how to identify Safe Websites/ Portals, Secure Seals (Verisign/Trust pay etc.), Secure Browsing Habits and Mailing Etiquettes, Social, Legal and ethical aspect of IT, Effects on the way we work Socialise, Operational Areas, Cyber Crime, Prevention of Cyber Crime, Cyber Law, Indian IT Act, Intellectual Property Right, Software Piracy, Copy right and Patent, Software Licencing, Proprietary Software, Free and Open-Source Software, GPL Licence,

(7 Lectures)

### Unit-IV

**Cyber Security Threats:** Security Threats and Attacks (Passive, Active). Types and Effects. Computer Virus, Malware, Adware, Ransomware, Spyware, Emotet, Identity Theft, Denial of Service, Man in Middle, Phishing, MySQL/SQL Injection, Password Attacks

**Network Security:** Risk Assessment and Security Measures, Assets and Type (Data, Applications System and Network). Security issues and Security Measure (Firewall, Encryption/Decryption), Prevention

*Raj Jay*

(7 Lectures)