ADIKAVI NANNAYA UNIVERSITY: RAJMAHENDRAVARAM

BCA Computer Applications

Single Major
From 2023-24 (Syllabus-Curriculum)
Course Structure

Semester	Course Number	Course Name	No. of Hrs/Week	No. of Credits
Semester-I	1	Fundamental of Commerce	4	4
	2	Business Organisation	4	4

SEMESTER-I

COURSE 1: FUNDAMENTALS OF COMMERCE

Theory	Credits: 4	4 hrs/week

Learning Objectives:
The objective of this paper is to help students to acquire conceptual knowledge of the Commerce, Economy and Role of Commerce in Economic Development. To acquire Knowledge on Accounting and Taxation.

Learning Outcomes:
At the end of the course, the student will able to
Identify the role commerce in Economic Development and Societal Development. Equip with the knowledge of imports and exports and Balance of Payments. Develop the skill of accounting and accounting principles. They acquire knowledge on micro and micro economics and factors determine demand and supply. An idea of Indian Tax system and various taxes levied on in India. They will acquire skills on web design and digital marketing.

Unit 1: Introduction: Definition of Commerce – Role of Commerce in Economic Development - Role Commerce in Societal Development. Imports and Exports, Balance of Payments. World Trade Organization.

Unit 2: Economic Theory: Macro Economics – Meaning, Definition, Measurements of National Income, Concepts of National Income. Micro Economics – Demand and Supply. Elasticity of Demand and Supply. Classification of Markets -Perfect Competition – Characteristics – Equilibrium Price, Marginal Utility.
.
Unit 3: Accounting Principles: Meaning and Objectives Accounting, Accounting Cycle - Branches of Accounting - Financial Accounting, Cost Accounting, Management Accounting. Concepts and Conventions of Accounting – GAAP.

Unit 4: Taxation: Meaning of Tax, Taxation - Types of Tax- Income Tax, Corporate Taxation, GST, Customs & Exercise. Differences between Direct and Indirect Tax – Objectives of Tax-Concerned authorities – Central Board of Direct Taxes (CBDT) and Central Board of Excise and Customs (CBIC).

Unit 5: Computer Essentials: Web Design - Word Press Basics, Developing a Simple Website. Digital Marketing - Social Media Marketing, Content Marketing, Search Engine Optimization (SEO), E-mail Marketing. Data Analytics- Prediction of customer behavior, customized suggestions.

Lab Exercise:

- Build a sample website to display product information.
- Provide wide publicity for your product over social media and e-mail
- Estimate the customer behavior and provide necessary suggestions regarding the products of his interest.

Activities:

- Assignment on GAAP.
- Group Activates on Problem solving.
- Collect date and report the role of Commerce in Economic Development.
- Analyze the demand and supply of a product and make a scheduled based on your analysis, problems on elasticity of demand.
- Identify the Tax and distinguish between Direct Tax and Indirect Tax.
- Assignments and students seminars on Demand function and demand curves
- Quiz Programs
- Assignment on different types of taxes which generate revenue to the Government of India.
- Invited lectures on GST and Taxation system
- Problem Solving Exercises on current economy situation.
- Co-operative learning on Accounting Principles.
- Group Discussions on problems relating to topics covered by syllabus
- Examinations (Scheduled and surprise tests)
- Any similar activities with imaginative thinking beyond the prescribed syllabus

Reference Books:

1. S.P. Jain & K.L Narang, Accountancy - I Kalyani Publishers.
2. R.L. Gupta & V.K. Gupta, Principles and Practice of Accounting, Sultan Chand
3. Business Economics -S.Sankaran, Margham Publications, Chennai.
4. Business Economics - Kalyani Publications.
5. Dr. Vinod K. Singhania: Direct Taxes – Law and Practice, Taxmann Publications.
6. Dr. Mehrotra and Dr. Goyal: Direct Taxes – Law and Practice, SahityaBhavan Publications
.

ADIKAVI NANNAYA UNIVERSITY: RAJMAHENDRAVARAM

SEMESTER-I

COURSE 2: BUSINESS ORGANIZATION

Theory	Credits: 4	4 hrs/week

Learning Objectives:

The course aims to acquire conceptual knowledge of business, formation various business organizations. To provide the knowledge on deciding plant location, plan layout and business combinations.

Learning outcomes:

After completing this course a student will have:

Ability to understand the concept of Business Organization along with the basic laws and norms of Business Organization. The ability to understand the terminologies associated with the field of Business Organization along with their relevance and to identify the appropriate types and functioning of Business Organization for solving different problems. The application of Business Organization principles to solve business and industry related problems and to understand the concept of Sole Proprietorship, Partnership and Joint Stock Company etc.

Unit 1: Business: Concept, Meaning, Features, Stages of development of business and importance of business. Classification of Business Activities. Meaning, Characteristics, Importance and Objectives of Business Organization.. Difference between Industry & Commerce and Business & Profession, Modern Business and their Characteristics.

Unit 2: Promotion of Business: Considerations in Establishing New Business. Qualities of a Successful Businessman. Forms of Business Organization - Sole Proprietorship, Partnership, Joint Stock Companies & Co-operatives and their Characteristics, relative merits and demerits, Difference between Private and Public Company, Concept of One Person Company.

Unit 3: Plant Location and Layout: Meaning, Importance, Factors affecting Plant Location. Plant Layout - Meaning, Objectives, Importance, Types of Layout. Factors affecting Layout. Size of Business Unit - Criteria for Measuring the Size and Factors affecting the Size. Optimum Size and factors determining the Optimum Size.

Unit 4: Business Combination: Meaning, Characteristics, Objectives, Causes, Forms and Kinds of Business Combination. Rationalization: Meaning, Characteristics, Objectives, Principles, Merits and demerits, Difference between Rationalization and Nationalization.

Unit 5: Computer Essentials: Milestones of Computer Evolution – Computer, Block diagram, generations of computer . Internet Basics - Internet, history, Internet Service Providers,

Types of Networks, IP, Domain Name Services, applications. Ethical and Social Implications - Network and security concepts- Information Assurance Fundamentals, Cryptography - Symmetric and Asymmetric, Malware, Firewalls, Fraud Techniques, privacy and data protection

Activities:
- Assignment on business organizations and modern business.
- Group Discussion on factors that influence plan location
- Seminars on different topics related to Business organization
- Case study could be given to present business plan of students choice.
- Identifying the attributes of network (Topology, service provider, IP address and bandwidth of your college network) and prepare a report covering network architecture.
- Identify the types of malwares and required firewalls to provide security.
- Latest Fraud techniques used by hackers.

Reference Books:
1. Gupta, C.B., "Business Organisation", Mayur Publiction, (2014).
2. Singh, B.P., Chhabra, T.N., "An Introduction to Business Organisation & Management", Kitab Mahal, (2014).
3. Sherlekar, S.A. &Sherlekar, V.S, "Modern Business Organization & Management Systems Approach Mumbai", Himalaya Publishing House, (2000).
4. Bhusan Y. K., "Business Organization", Sultan Chand & Sons.
5. Prakash, Jagdish, "Business Organistaton and Management", Kitab Mahal Publishers (Hindi and English)
6. Fundamentals of Computers by V. Raja Raman
7. Cyber Security Essentials by James Graham, Richard Howard, Ryan Olson

Course – I & II Model Paper (70 Marks)

SECTION A (Multiple Choice Questions)   **30 x 1 = 30 M**

30 Multiple Choice Questions (Each Unit 6 Questions)

SECTION B (Fill in the blanks)   **10 x 1 = 10 M**

10 Fill in the Blanks (Each Unit 2 Questions)

SECTION C (Very short answer questions)   **10 x 1 = 10 M**

10 Very short answer questions (Each Unit 2 Questions)

SECTION D (Matching) (From 5 Units)   **2 x 5 = 10 M**

1 A
   B
   C
   D
   E

2 A
   B
   C
   D
   E

SECTION E (True or False)   **10 x 1 = 10 M**

10 True or False (Each Unit 2 Questions)

Programme: B.C.A. Computer Applications (Major)
SEMESTER – II
COURSE STRUCTURE

Semester	Course	Title of the Course	No. of Hrs /Week	No. of Credits
II	3	Office Automation Tools	3	3
		Office Automation Tools Lab	2	1
	4	Programming in C	3	3
		Programming in C Lab	2	1

SEMESTER-II
COURSE 3: OFFICE AUTOMATION TOOLS

<u>Theory</u>   <u>Credits: 3</u>   <u>3 hrs/week</u>

Course Objectives:
- ✓ To introduce theenvironment of GUI in Ms-Word and its features..
- ✓ To introduce the fundamental concepts using Ms-Word and its features to make it more useful.
- ✓ To provide hands-on use of Word, Excel and PowerPoint.

Course Outcomes:

The students will be able:

- ✓ To understand concept of Word Processor and use its features.
- ✓ To use the advanced features of Ms-Word to make day to day usage easier.
- ✓ To work comfortably with Ms-Excel Environment.
- ✓ To Create worksheets and use advanced features of Excel.
- ✓ To create presentations and inserting multimedia items in them.

<u>Syllabus</u>

UNIT–I : Introduction to Ms-Office &Ms-Word

MS-Word: Features of MS-Word, MS-Word Window components, working with formatted text, Shortcut keys, Formatting documents: Selecting text, Copying &moving data, Formatting characters, changing cases, Paragraph formatting, Indents, Drop Caps, Using format painter, Page formatting, Header &footer, Bullets & numbering, Tabs, Forming tables. Finding & replacing text, go to(F5) command, proofingtext (Spellcheck, Auto correct),

Case Study:
1. Create a document to write a letter to the DM&HO of the district complaining about Hygienic conditions in your area.
2. Create a document to share your experience of your recent vacation with family.

UNIT–II :Ms-Word Advanced Features

Difference between Wizard and Template - Customize the Quick Access Tool Bar – Macros: Purpose – Creating Macro – Using Macro – Storing Macro - Inserting pictures: From Computer, Online Pictures – Insert 3d Models - Insert Shapes – Insert Text Box – Insert Equation, Hyperlinks- Tables : Insert tables - Mail merge ,Printing documents, Tables : Insert tables, Mathematical calculations on tables data. Insert Text Box etc.

Case Study:
1. Create a document to send a holiday intimation to all the parents at time about Dasara Vacation.
2. Create a document to create Time Table of you class using tables.

UNIT–III: Introduction to Ms-Excel & Its Features

MS-Excel: Excel Features, Spread sheets, workbooks, creating, saving &editing a workbook, Renaming sheet, cell entries(numbers, labels, and formulas),spell check, find and replace, Adding and deleting rows and columns Filling series, fill with drag, data sort, Formatting worksheet, Functions and its types, Some useful Functions in excel(SUM,AVERAGE,COUNT, MAX,MIN, IF),

Case Study:
1. Create a worksheet with you class marks displaying total, average, top marks in the class and least marks in the class.
2. Create a Worksheet with employee no, name, job, salaries of 10 employees, calculate DA, TA,HRA ,Gross Salary and Net Salary.
   i. Find the sum of HRA's of Total employees.
   ii. Find the average DA
   iii. Display the Maximum salary of the employee.

UNIT-IV: Ms-Excel Advanced Features

Cell referencing (Relative, Absolute, Mixed), What-if analysis, Introduction to charts: types of charts, creation of charts, printing a chart, printing worksheet – Sort – Filters – View Menu- Goal Seek –Scenarios.
Case Study:
1. Prepare a chart with height and weights of you class mates in at least 3 types of charts.
2. Demonstrate the use of Filter with the attendance data of your class.

UNIT-V: Ms-PowerPoint and its Applications

MS-PowerPoint: Features of Power Point, Uses, components of slide, templates and wizards, using template, choosing an auto layout, using outlines, adding subheadings, editing text, formatting text, using master slide, adding slides, changing color scheme, changing background and shading, adding header and footer, adding clip arts and auto shapes. Various presentation, Working with slide sorter view (deleting, duplicating, rearranging slides), adding transition and animations to slide show, inserting music or sound on a slide, viewing slideshow, Printing slides.

Case Study:
1. Prepare a presentation with your achievements and experiences in College.
2. Create a Presentation of your organization with pictures, clip arts and animations

Text Books:
1. Computer Fundamentals–Pradeep. K.Sinha: BPB Publications.
2. Fundamentals of Computers –Reema Thareja, Oxford University Press India

SEMESTER-II
COURSE 3: OFFICE AUTOMATION TOOLS

Practical   Credits: 1   2 hrs/week

List of Experiments

1. Design a visiting card for managing director of a company as per the following specification.
   o Sizeofvisitingcardis3½×2
   o Name of the company with big font
   o Phone number, Fax number and E-mail address with appropriate symbols.
   o Office and Residence addresses separated by new line

2. Create a table with following columns and display the result in separate cells for the following
   o Emp Name, Basic pay, DA, HRA, Total salary.
   o Sort all the employees in ascending order with the name as the key
   o Calculate the total salary of the employee
   o Calculate the Grand total salary of the employee
   o Find highest salary and
   o Find lowest salary

3) Prepare an advertisement to company requiring software professional with the following
   o Attractive page border
   o Design the name of the company using WordArt
   o Use at least one clipart.
   o Give details of the company(use bullets etc.)
   o Give details of the Vacancies in each category of employee's(Business manager, Software engineers, System administrators, Programmers, Data entry operators) qualification required.

4) Create a letter head of a company with the following specifications
   o Name of the company on the top of the page 2 with big font and good style
   o Phone no, Faxno and E-mail address with symbols.
   o Main products manufactured by the company
   o Slogans if any should be specified in bold at the bottom

5) Create two pages of curriculum vitae of a graduate with the following specifications
   o Table to show qualifications with proper headings
   o Appropriate left and right margins
   o Format ½pageusingtwo-columnapproachabout yourself
   o Name on each page at the top right side
   o Page no. in the footer on the right side.

6) Write a macro format document as below
   o Line spacing"2"(double)
   • Paragraphindentof0.1
   • Justification formatting style
   • Arial font andBoldof14pt-size

7) Create a letter as the main document and create 10 records for the 10 persons Use mail merge to create letter for selected persons among 10.

8) Create an electronic spread sheet in which you enter the following decimal numbers and convert the number to octal, Hexadecimal and binary numbers and vice-versa.

DecimalNumbers:35,68,95,78,165,225,355,375,465
BinaryNumbers:101,1101,11101,11111,10001,11101111

9) Calculate the net pay of the employees following the conditions below.

	A	B	C	D	E	F	G	H	I
1	Employee Number	Employee Name	Basic pay	DA	HRA	GPF	Gross Pay	Income tax	Net pay
2									

  ➢ DA:- 16% of the basic pay if Basic pay is greater than 20000 or else 44%.
  ➢ HRA:- 15 % of the Basic pay subject to maximum of Rs.4000.
  ➢ GPF: -10% of the basic pay.
  ➢ INCOMETAX:-10% of basic If Basic pay is greater than20000.
  ➢ Find who is getting highest salary & who is get lowest salary?

10) The ABC Company shows the sales of different product For5years.CreateBARGraph, 3D and Pie chart for the following.

A	B	C	D	E	F
S.No.	Year	Pro1	Pro2	Pro3	Pro4
1	1989	1000	800	900	1000
2	1990	800	80	500	900
3	1991	1200	190	400	800
4	1992	400	200	300	1000
5	1993	1800	400	400	1200

11) Create a suitable examination database and find the sum of the marks(total) of each student and respective, class secured by the student.
   ✓ Pass – if marks in each subject >= 35
   ✓ Distinction- if average >= 75
   ✓ First class - if average >=60 but <75
   ✓ Second class – if average >=50 but l<60
   ✓ Third class – if average >=35 but <50
   ✓ Fail: if marks in any subject <35

12) Enter the following data in to the sheet.

Name	Department	Salary
Anusha	Accounts	12000
Rani	Engineering	24000
Lakshmi	Accounts	9000
Purnima	Marketing	20000
Bindu	Accounts	4500
Tejaswi	Accounts	11000

Swetha	Engineering	15000
Saroja	Marketing	45000
Sunitha	Accounts	5600
Sandhya	Engineering	24000
Harika	Marketing	8000

➤ Extract records for department in Accounts and Salary>10000
➤ Sort the data by salary with the department using "sort commands".
➤ Calculate total salary for each department using Subtotals

13) Enter the following data into the sheet.

	Raju	Rani	Mark	Rosy	Ismail	Reshma
English	76	89	43	51	76	87
2ndLang	55	85	78	61	47	33
Maths	65	82	34	58	52	65
Computers	45	91	56	72	49	56
Human Values	51	84	54	64	32	64

Apply the conditional formatting for marks

- 35 below   Red
- 35 to 50   Blue
- 51 to 70   Green
- 71 to 100   Yellow

14) Create a presentation using templates.
15) Create a Custom layout or Slide Master for professional presentation.
16) Create a presentation with slide transitions and animation effects.
17) Create a table in PPT and apply graphical representation

SEMESTER-II
COURSE 4: PROGRAMMING IN C

Theory   Credits: 3   3 hrs/week

Course Objectives:

➢ Provides knowledge on Algorithms, Flow chart and basic programming language.
➢ Provides complete knowledge of C language.
➢ Helps to develop logics which will help them to create program and applications in C.
➢ Learning the basic programming constructs, they can easily switch over to any other language in future.

Course Outcomes:

Upon successful completion of this course, students will be able to-
➢ Understand the basic terminology used in computer programming.
➢ Write, compile and debug programs in C language.
➢ Use different data types in a computer program.
➢ Design programs involving decision structures, loops and functions.
➢ Understand the dynamics of memory by the use of pointers and Structures.
➢ Apply different operations in File handling.

Syllabus

UNIT - I:
Introduction to Algorithms and Programming Languages: Algorithm - Key features of Algorithms - examples of Algorithms, Flow Charts– Pseudo code, Programming Languages – Generation of Programming Languages – Structured Programming Language.
Introduction to C: Introduction – Structure of C Program, Writing the first C Program, File used in C Program – Compiling and Executing C Programs, Using Comments – Keywords – Identifiers, Basic Data Types in C, Variables – Constants, I/O Statements in C, Operators in C, Programming Examples, Type Conversion and Type Casting.
Case Study:
Enter any alphabet and display whether it is vowel or a consonant.

UNIT - II:
Control Structures and Functions: Decision Control and Looping Statements: Introduction to Decision Control Statements, Conditional Branching Statements, Iterative Statements, Nested Loops, Break and Continue Statement – Go to Statement. Functions: Introduction, Using functions – Function declaration/ prototype – Function definition, Function call – Return statement – Passing parameters, Scope of variables, Storage Classes, Recursive functions.

Case Study:
Print first 10 natural numbers. (using while, do-wile, for loop, break, continue.)

UNIT - III:
Arrays: Introduction, Declaration of Arrays, accessing elements of the Array – Storing Values in Array, Calculating the length of the Array, Operations that can be performed on Array, Passing one dimensional array to function.
Two dimensional Arrays, accessing two dimensional arrays, Passing two dimensional arrays to functions.
Strings: Introduction, String Operations using String functions.
Case Study:
Searching an element in an array.
Disadvantages of an array.

UNIT - IV:
Pointers, Structures and Unions: Pointers: Understanding Computer Memory – Introduction to Pointers, Declaring Pointer Variable, Pointer Expressions and Pointer Arithmetic – Null Pointers, Passing Arguments to Functions using Pointer, Pointer and Arrays – Passing Array to Function, Memory Allocation in C Programs, Memory Usage – Dynamic Memory Allocation, Drawbacks of Pointers. Structures: Introduction to structures, Nested Structures. Union, and Enumerated Data Types: Introduction to Union – accessing union elements, Enumerated Data Types.

Case Study:
Difference between Arrays, structures & unions

UNIT – V:
File Handling: Files: Introduction to Files, Using Files in C, Reading Data from Files, Writing Data from Files, Detecting the End-of-file, Error Handling during File Operations.

Case Study:
Write a program to read a text file, convert all the lowercase characters into upper case and rewrite the uppercase characters in the file.

PRESCRIBED TEXT BOOKS:
Computer Fundamentals and Programming in C by REEMA THAREJA from OXFORD UNIVERSITY PRESS

REFERENCE BOOKS:
1. E Balagurusamy, COMPUTING FUNDAMENTALS & C PROGRAMMING – Tata McGraw-Hill, Second Reprint 2008, ISBN 978-0-07-066909-3.
2. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publ, 2002.
3. Henry Mullish&HuubertL.Cooper: The   Sprit of C, Jaico Pub, House,1996.
4. Teach your C Skills-Kanithker

SEMESTER-II
COURSE 4: PROGRAMMING IN C

Practical   Credits: 1   2 hrs/week

List of Experiments

1. Write a C program to calculate the expression: ((a*b)/c)+(a+b-c) .
2. Write a C program to calculate (a+b+c)3.
3. Write a C program to check whether the given number is Prime or Not.
4. Write a C program to find the sum of individual digits of a given number .
5. Program to convert Hours into seconds.
6. Write a C program to generate all the prime numbers between 1 and n, where n is a value supplied by the user.
7. Write a program to check whether the given number is Palindrome or Not.
8. Write a C program to check whether a given 3-digit number is an Armstrong number or not.
9. Write a C program to print the numbers in triangular form.

                     1
                     1 2
                     1 2 3
                     1 2 3 4

10. Program to display the number of daysa in given month using Switch – Case.
11. Write a C program to perform the following:
     I. Addition of two matrices.
     II. Multiplication of two matrices.
12. Write a C program to determine if the given string is a palindrome or not.
13. Write C program to find the factorial of a given integer using a recursive function.
14. Write a C program to concatenate two strings using pointers.
15. Write a C program to find the length of a string using pointers.
16. Program to display Student Details using Structures.
17. Write a C program to
     I. Write data into a File.   II. Read data from a File.

Single Major
Model Question Paper
SEMESTER-II
B.C.A. Computer Applications

Paper: IV OFFICE AUTOMATION TOOLS

Time:3hrs   *MAX MARKS: 70 M*

SECTION – A

Answer any 5 questions. Each question carries 4 marks   **(5 X 4 = 20M)**

1. Explain Finding & replacing text in MS-Word.

2. Explain how to insert pictures from Computer in MS-Word.

3. Explain how to insert and delete rows in Excel.

4. Explain about sorting and filtering in MS-Excel.

5. Explain various features of Power Point.

6. Explain how to insert header and footer in MS-Word.

7. Explain how to insert tables in MS-Word.

8. Explain various features of MS-Excel.

SECTION – B

Answer all the questions. Each question carries 10 marks.   **(5 X 10 = 50M)**

9. Explain MS-Word window components with neat diagram.
                                (OR)
    Explain about formatting document in MS-Word.

10. Explain how to insert text box, hyperlinks and shapes in MS-Word.
                                (OR)
    Explain about Mail Merge in MS-Word.

11. Explain various statistical functions used in MS-Excel.
                                (OR)
    Explain how to Create, Save, and Edit a workbook in MS-Excel.

12. What is chart? Explain different types of charts available in Excel.
                                (OR)
     Explain Relative, Absolute and Mixed Cell referencing MS-Excel.

13. Explain Components of slide.
                                (OR)
    Explain adding transition and animations to slide show.

Single Major
Model Question Paper
SEMESTER-II
B.C.A. Computer Applications

Paper: IV PROGRAMMING IN C

Time:3hrs   *MAX MARKS: 70 M*

SECTION – A

Answer any 5 questions. Each question carries 4 marks   **(5 X 4 = 20M)**

1. Define Algorithm and List out various features of algorithm.

2. Demonstrate break and continue statements.

3. Write a program to calculate length of an array.

4. Explain differences between Structure and Union.

5. Explain how to detect end of the file in C programming.

6. What is variable? What are the rules to construct variable?

7. What is Recursion? Demonstrate with an example.

8. Define string. How string is declared and initialized?

SECTION – B

Answer all the questions. Each question carries 10 marks.   **(5 X 10 = 50M)**

9. What is an operator? List and explain various types of operators

(OR)

What are basic data types available in 'C'? Write the significance of each data
Type with example.

10. Explain various Decision making statements supported by 'C' language with example.

(OR)

Explain different loops used in 'C' with syntax.

11. Define array. Explain with suitable example how to declare and initialize 1D array**.**

(OR)

Define a string. Explain String Operations using String functions.

12. Explain dynamic memory allocation functions with example.

(OR)

What is structure? Write a C program to store and print name, USN, subject and
IA marks of students using structure

13. Explain Error Handling during File Operations.

(OR)

Explain reading and writing data into file in C programming.