Basic English

Applicable for BA/BBA/BCA/BSc First Year students

B.A., BCA, BBA, B.com. BSc. I Year Semester **L T P C**

1 0 2 2

Course Code: 25ECS020

Course Description:

This paper is especially designed for vernacular medium background learners. The syllabus is structured to build foundational English skills in Grammar, Vocabulary, Reading, Writing, Listening, and Speaking considering NEP guidelines under Aility Enhancement Course.

Course Objectives:

1. To develop basic proficiency in English language skills: listening, speaking, reading, and writing.

2. To strengthen grammar and vocabulary knowledge for academic and everyday use.

3. To help students communicate confidently in social and academic settings.

Course Outcomes:

By the end of the course, students will be able to:

1. Understand and use basic grammar structures accurately.

2. Communicate simple ideas effectively in spoken and written English.

3. Participate in basic conversations and listening tasks with improved confidence.

Articulation Matrix

(Program Articulation Matrix is formed by the strength of correlation of COs with POs and PSOs. The strength of correlation is indicated as 3 for substantial (high), 2 for moderate (medium) correlation, and 1 for slight (low) correlation

CO / PO / PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 10	PSO 1	PSO 2	PSO 3
CO1	-	3	-	-	-	-	-	1	2	-	-	-	-
CO2	-	3	-	-	-	-	-	1	2	-	-	-	-
CO3	-	3	-	-	-	-	-	1	2	-	-	-	-
CO4	-	3	-	-	-	-	-	1	2	-	-	-	-
CO5	-	3	-	-	-	-	-	1	2	-	-	-	-

SYLLABUS

UNIT 1: (15 Hours)

My Boyhood Days by Rabindranath Tagore

Grammar:

Parts of Speech (Noun, Pronoun, Verb, Adjective, Adverb, Preposition, Conjunction, Interjection)

Articles (A, an, The)

Vocabulary:

Everyday vocabulary: Days, months, colors, numbers, common objects Synonyms & Antonyms (basic)
Word formation (prefixes/suffixes)

Reading:

Reading short stories, newspaper snippets, and messages

Writing:

Sentence construction: Simple and compound sentences

Activities:

Fill-in-the-blanks, sentence making

Vocabulary crossword / flashcards

Listening Skills

Listening Practice:

Listening to short conversations and announcements

Speaking Skills

Speaking Practice:

Introducing oneself and others

Activities:

True/False based on audio clips

Fill in the blanks while listening

Story-based comprehension exercises

Tools: Use of recorded dialogues, YouTube education channels, English audio stories

UNIT 2: (15 Hours)

Wings of Fire (chapter-1) by APJ Abdul Kalam

Grammar:

Sentence structure: Subject + Verb + Object

Types of Sentences: Affirmative, Negative, Interrogative

Vocabulary:

Words from texts (context-based learning)

Homophones and commonly confused words

Reading:

Skimming and scanning techniques

Understanding main ideas and details

Comprehension Practice

Writing

Paragraph writing: Descriptive and narrative

Activities:

Jumbled sentences/paragraphs for reordering

Listen and answer questions

Listening Skills

Listening for specific information (names, dates, directions)

Speaking Skills

Introducing oneself and others

Asking and answering simple questions

Expressing likes, dislikes, opinions

Tools: conversation videos, peer dialogues, speaking module

UNIT 3: (15 Hours)

The Last Leaf by O' Henry

Grammar:

Tenses: Present Simple, Past Simple

Subject-Verb Agreement

Vocabulary:

Descriptive adjectives

Action verbs

Reading:

Answering WH-questions (who, what, where, etc.)

Sentence completion and paragraph sequencing

Writing

Informal writing: Email, message, diary entry

Activities:

Guided writing tasks

Picture-based paragraph writing

Functional English:

Greetings, apologies, thanks, requests

Daily conversation starters

Activities:

Role-play (at shop, college, bus stop, etc.) **Total: 45 Hours**

Tools: conversation videos, peer dialogues, speaking modules

Text Books

Students' Handbook, Basic English (Prescribed Text, Exercises & Worksheets)

References:

1. Board of Editors. Using English a Course book for Undergraduate Engineers and Technologists. Orient Black Swan Limited, Hyderabad: 2015

2. Richards, C. Jack. Interchange Students' Book-2 New Delhi: CUP, 2015.

3. Bailey, Stephen. Academic Writing: A practical guide for students. New York: Rutledge, 2011.

4. Means,L. Thomas and Elaine Lang Lois. English & Communication for Colleges. Cengage Learning, USA: 2007

5. Redston, Chris &Gillies Cunningham Face2Face (Pre-intermediate Student's Book& Workbook) Cambridge University Press, New Delhi: 2005

6. Comfort, Jeremy, et al. Speaking Effectively: Developing Speaking Skills for Business English. Cambridge University Press, Cambridge: Reprint 2011

7. Dutt P. Kiranmai and Rajeevan Geeta. Basic Communication Skills, Foundation Books: 2013

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Mandsaur University
Department Of Allied Science

Syllabus for BCA (Computer Applications : BCA- CC & SACS)
Semester-I

L-4,T-0,P-0,C-4

25ALS060T : Mathematics and Statistics

Course Objective:

- To give understanding of the theoretical and practical aspects of the use of trigonometric function and Matrices.
- To develop analytical ability to solve real-world problems using system of linear equations.
- To study the basics of logic set theory concepts with their application.
- To study the basics of set theory concepts with their application.
- To apply statistical concepts to real-world problems in computer application.

Course Outcomes (COs)

1. Understand the concept of sequence and series.
2. Apply quadratic formula to solve quadratic equation.
3. Analyze mean, median and mode for finding central value of a given data set.
4. Evaluate logical Connectives and truth table for solving computer models.
5. Evaluate some set inclusion and exclusion problem using computational method.

Articulation Matrix

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CO1	3	2	1	1	1	1	-	-	-	1	1	1
CO2	3	2	1	-	1	-	-	-	-	1	1	1
CO3	1	2	2	1	2	-	-	-	-	1	1	1
CO4	1	3	2	1	2	1	-	-	-	1	2	1
CO5	1	2	2	1	1	-	-	-	-	1	2	2

High-3 Medium-2 Low-1

Unit- I: Sequence and series **12 Hours**

Sequences, Arithmetic progression, Arithmetic means, Geometric Progression, Sum to infinity of a G.P., Arithmetico–geometric sequence, Sum to n terms of special Sequences. The Binomial Theorem, Some applications of Binomial theorem, Binomial theorem for any index. Exponential Series, Logarithmic Series.

Unit- II: Trigonometry , Matrices and Quadratic Equations **12 Hours**

Angles & their Measurement, Values of Trigonometric Ratios, Height and Distances. Elementary Matrices and types of matrices. Solution of quadratic equations, Symmetric functions of roots, Graph of a quadratic polynomial,Applications.

Unit- III: Statistics **12 Hours**

Frequency Distribution, Measure of Central Tendency: Mean, Mode, Median, Measures of variation: Mean deviation, Standard Deviation.

15/5/25 15/05/25 15/05/25 15/05/25

Mandsaur University
Department Of Allied Science

Unit- IV: Mathematical Logic **12 Hours**

Statements and notations, Connectives: Negation, Conjunction, And Disjunction. Statement formulas and truth tables. Tautologies, Tautological implications, contradiction contingency.

Unit- V: Set Theory **12 Hours**

Basic concepts of set theory, notation, inclusion and equality of sets, the power set, types of sets, operations on set, Venn diagrams.

Total: 60 Hours

Reference Books:

1. Sarkar, S. K. (2008). *A Textbook of Discrete Mathematics*. S. Chand Publishing.
2. Rangachari, M. S. (1993). Mathematics education—some remedies. *Current Science*, *64*(4), 218-220.
3. Kolman, B., Busby, R. C., & Ross, S. (1995). *Discrete mathematical structures*. Prentice-Hall, Inc..
4. Gupta, S. C., & Kapoor, V. K. (2020). *Fundamentals of mathematical statistics*. Sultan Chand & Sons.
5. *Mathematics by M. S. Rangachari.*

List of e-Learning Resources:

1. https://nptel.ac.in/
2. https://www.coursera.org/
3. https://www.edx.org/course/advanced-algorithmics-and-graph-theory-with-python?index=product&queryID=106bd43f975a7c909005bc27e62f3c98&position=3&v=1&linked_from=autocomplete&c=autocomplete

15/05/25 15/05/25 15/5/25

HOD
Department of Mathematics
Mandsaur University, Mandsaur (458001)

15/05/25 15/05/25 15/05/25

BCA (Cloud Computing)
Semester- I

L-3 T-1 P-0 C-4

25BCC010T: Computer fundamental

Course Objectives

- To know about the basics of computers including their characteristics and generations.
- To learn about input and output devices and understand their functions.
- To know about the software development life cycle (SDLC).
- To know about the role of program language translators such as assemblers, compilers, and interpreters.
- To learn about the history and features of DOS including files, directories, and commands.

Course Outcomes (COs)

1. Understand the characteristics and generations of computers.
2. Apply knowledge of input and output devices to classify and describe their functions.
3. Analyze programming logic building techniques using flowcharts and algorithms.
4. Evaluate different computer languages and their suitability for specific tasks.
5. Create basic network configurations using knowledge of networking basics like topologies and client-server concepts.

Articulation Matrix

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CO1	1	3	-	-		-	-	2	-	-	-	-
CO2	-	-	3	-	-	1	-	-	2	**1**	-	-
CO3	-	-	2	3	-	-	1	-	-	-	-	-
CO4	1	2	-	1	3	-	-	-	-	-	**1**	-
CO5	3	-	1	-	2	3	-	-	-	-	-	**1**

High-3 Medium-2 Low-1

Unit I Introduction to Computers, Computer Software & Number System 12 Hours

Introduction to Computers: Introduction, Characteristics of Computers, Block diagram of computer, Generation of Computers, Types of computers, Mini Computers, Micro Computers, Mainframe Computers, Super Computers etc., Applications of Computers. **Computer Software:** Introduction, Software: Definition, Relationship between Software and Hardware, Software Categories, System Software, Application Software**. Number System:** Decimal, Binary, Octal, Hexadecimal, Conversions of number systems.

Unit II Basic computer organization, I/O Device, CPU, Memory 12 Hours

Basic computer organization: Block diagram of computer, **Input devices**: classification of input devices, **Output devices**: classification of output devices, Printer, types of printers, **Central Processing Unit (CPU)**, Introduction, Elements of CPU: Control Unit (CU), Arithmetic Logical Unit (ALU), Registers, Instruction format Instruction set, Processor Speed, **Memory**:

Introduction, memory measuring units, main memory, types of primary memory chips, Secondary storage: Introduction, types of secondary storage devices.

Unit III SDLC & Programming Logic Buildings **12 Hours**

SDLC: Software development life cycle, Algorithm: Definition, Characteristics, Advantages and disadvantages, Flowchart: Definition, Define symbols of flowchart, Advantages and disadvantages. **Programming Logic Buildings:** Introduction, Logic Buildings using flowchart and algorithms.

Unit IV Computer Languages & Programming Languages **12 Hours**

Computer Languages: Machine language, Assembly language, High level language, Program Language Translators: Assembler, Compiler, Interpreter. **Programming Languages**: Introduction, Evolution of Programming Languages, Classification of Programming Languages, Generations of Programming Languages, Features of a Good Programming Language, What are the characteristics of a good program, Top-down design, Bottom-up design.

Unit V Operating System, DOS & Networking Basics **12 Hours**

Operating System: Introduction, Operating System, Evolution of Operating System, Types of Operating System, Functions of an Operating System, **DOS :**History, Files and Directories, Internal and External Commands, Batch Files, etc. **Networking Basics:** Introduction, Types of Networks, Topology, Client-Server Concepts.

Total: 60 Hours

Reference Books:

1. Computer Fundamental Organization, B. Ram
2. Computer Fundamentals, Anita Goel, Pearson, 2010.
3. Fundamental of Computers – By V.Rajaraman B.P.B. Publications
4. Fundamental of Computers – By P.K. Sinha
5. Computer Today- By Suresh Basandra
6. Computer Networks- By Andrew S. Tanenbaum

List of e-Learning Resources:

1. https://www.coursera.org/courses?query=computer%20fundamentals
2. https://www.udemy.com/course/computer-fundamentals-k/
3. https://onlinecourses.swayam2.ac.in/cec19_cs06/preview

Prepared By	Academic Coordinator	HOD	Senior Faculty nominated by DOAA

BCA(Cloud Computing)

Semester-I

L-3 T-1 P-0 C-4

25BCC240T: Programming in C

Course Objectives

- To know about the fundamentals of algorithms and flowcharts.
- To learn about different input/output techniques in C programs.
- To know the concepts of functions, arguments, and return values.
- To learn about dynamic memory allocation functions like malloc(), calloc(), and free() for memory management.
- To know about membership operators, pointers to structures, and arrays within structures.

Course Outcomes

Students will be able to

1. Understand algorithms and flowcharts for problem-solving.
2. Apply formatted and unformatted I/O operations in C programs.
3. Analyze the scope, visibility, and lifetime rules for variables in C.
4. Evaluate dynamic memory allocation functions like malloc(), calloc(), and free().
5. Create and implement complex data structures using structures and unions in C programs.

Articulation Matrix

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CO/PO/PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	2	3	-	1	-	-		-		-	-	-
CO2	-	2	1	-	-	-	-	-	3	-	-	-
CO3	-	-	-	2	-	-	-	-	3	-	-	-
CO4	-	-	3	-	-	-	-	-	-	2	-	-
CO5	-	-	-	1	2	3	-	-	-	-	-	-

High-3 Medium-2 Low-1

Unit I Algorithms to Control Constructs 12 Hours

Algorithms & flowcharts; Rules/conventions of coding, documentation, naming variables; History of C; Structure of a C program, Data types; Constant & Variable; Operators & expressions; Control Constructs – if-else, for, while, do-while; Case statement.

Unit II Arrays, I/O, and Operators 12 Hours

Arrays; Formatted & unformatted I/O; Type modifiers & Storage classes; Ternary operator; Type conversion & type casting; Priority & associativity of operators.

Unit III Parameters, Return Values, and Recursion 12 Hours

Functions; Arguments; Return value; Parameter passing – call by value, call by reference; Return statement; Scope, visibility and life time rules for various types of variables, static variable; Calling a function; Recursion – basics, comparison with iteration, tail recursion, when to avoid recursion examples.

Unit IV Pointers, Dynamic Memory & Special Constructs **12 Hours**

Special constructs – Break, continue, exit (), goto& labels; Pointers - &and * operators, pointer expression, pointer arithmetic, dynamic memory management functions like malloc (), calloc(), free(), String;

Unit V Structures & Unions **12 Hours**

Structure – basic, declaration, membership operator, pointer to structure, referential operator, self-referential structures, structure within structure, array in structure, array of structures; Union – basic, declaration; Type of defn

Total Hours: 60

Reference Books:

1. Kerninghan& Richie: The C Programming language, PHI
2. Cooper Mullish: The Spirit of C, Jaico Publishing House, Delhi
3. Kanetkar Y: Let us C
4. Kanetkar Y: Pointers in C.

List of e-Learning Resources:

1. https://www.coursera.org/courses?query=c%20programming
2. https://www.udemy.com/topic/c-programming/
3. https://nptel.ac.in/courses/106104128
4. https://www.codecademy.com/catalog/language/c

Prepared By	Academic Coordinator	HOD	Senior Faculty nominated by DOAA

BCA (Cloud Computing)

Semester-I

L-3 T-1 P-0 C-4

25BCC030T: Cloud Computing Concepts-1

Course Objectives

- To learn about the basics of Cloud Computing.
- To learn about Cloud Computing Service Models.
- To learn and practice Grid Computing.
- To know about Cloud Computing Architecture.
- To get the overview of Cloud Applications.

Course Outcomes

1. Understand the fundamentals of cloud computing.
2. Apply knowledge of cloud computing service models.
3. Analyze grid computing and its relation to cloud computing.
4. Evaluate cloud computing architecture, and cloud solutions.
5. Create Virtual servers and storage.

Articulation Matrix

(Program Articulation Matrix is formed by the strength of the correlation of COs with POs and PSOs. The strength of correlation is indicated as 3 for substantial (high), 2 for moderate (medium) correlation, and 1 for slight (low) correlation)

CO/PO/PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	2	3	1	-	-	-	-	-	-	1	-	-
CO2	-	2	3	1	-	-	-	-	2	-	-	-
CO3	-	1	2	3	-	-	1	-	-	-	-	-
CO4	1	-	2	-	3	-	-	1	-	-	2	1
CO5	-	1	-	2	-	3	-	-	-	-	1	2

High-3 Medium-2 Low-1

Unit I: Introduction to Cloud Computing 12 Hours

Internet Vs Intranet, Growth of Internet, ISP, ISP in India, WORLD WIDE WEB (WWW) - Web server, Introduction: Historical development, Characteristics of cloud computing as per NIST, Cloud Stakeholders, Advantages & Disadvantages of Cloud Computing.

Unit II: Cloud Computing Service Models 12 Hours

Cloud Computing Service Models: IaaS, SaaS, PaaS, Types of Cloud Computing, Cloud computing environments, Cloud services requirements, Cloud and dynamic infrastructure, Cloud Adoption and rudiments, Vision of Cloud Computing, Cloud Service Providers.

Unit III: Grid Computing 12 Hours

Cloud Deployment Models ,Grid computing, Grid- The Way to cloud, Grid Computing Vs Cloud Computing, Grid Computing and Utility Computing, Types of utility cloud services.

Unit IV: Cloud Computing Architecture 12 Hours

Cloud Computing Architecture: Cloud Reference Model, Cloud Interoperability & Standards, Scalability, High Availability and Fault Tolerance, Cloud Solutions: Cloud Ecosystem, Cloud Business Process Management, Cloud Service Management, Cloud Offerings: Cloud Analytics, Testing Under Control.

Unit V: Overview of Cloud Applications **12 Hours**

Overview of cloud applications: ECG Analysis in the cloud, Protein structure prediction, Gene Expression Data Analysis ,Satellite Image Processing ,CRM and ERP ,Social networking.

Total: 60 Hours

Reference Books:

1. Cloud Computing for Dummies" (Wiley India Edition), 2010, Bloor R., Kanfman M., Halper F. Judith Hurwitz.
2. "Cloud Computing: Principles and Paradigms", Rajkumar Buyya, James Broberg, Andrzej M. Goscinski, John Wiley and Sons Publications, 2011.
3. "Cloud Computing: Insights into New-Era Infrastructure", Dr Kumar Sourabh, John Wiley and Sons Publications, 2011.
4. "Cloud Computing: Black Book", Kailash Jayaswal, Jagannath Kallakurchi, Donald J. Houde Deven Shah, Kogent Learning Solutions, Dreamtech Press.
5. Krutz , Vines, "Cloud Security " , Wiley Pub.
6. "Mastering Cloud Computing", Rajkumar Buyya, C. Vecchiola & S. Thamarai
7. Selvi, McGRAW Hill Publication.

List of e-Learning Resources:

1. https://nptel.ac.in/
2. https://www.coursera.org/
3. https://www.edx.org/

Prepared By	**Academic Coordinator**	**HOD**	**Senior Faculty nominated by DOAA**

BCA(Cloud Computing)

Semester-I

L-0 T-0 P-4 C-2

25BCC240P: Programming in C

Course Objectives

- To know about the fundamentals of algorithms and flowcharts.
- To learn about different input/output techniques in C programs.
- To know the concepts of functions, arguments, and return values.
- To learn about dynamic memory allocation functions like malloc(), calloc(), and free() for memory management.
- To know about membership operators, pointers to structures, and arrays within structures.

Course Outcomes

- Students will be able to implement basic arithmetic operations and fundamental programming constructs in C.
- Students will be able to utilize conditional statements and loops for problem-solving.
- Students will be able to create and manipulate data structures and understand recursion.
- Students will be able to handle files for input and output operations.
- Students will be able to use functions and macros to modularize code and perform specific tasks.

Articulation Matrix

(Program Articulation Matrix is formed by the strength of correlation of COs with POs and PSOs. The strength of correlation is indicated as 3 for substantial (high), 2 for moderate (medium) correlation, and 1 for slight (low) correlation)

CO/PO/PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO1	2	3	-	1	-	-		-		-	-	-
CO2	-	2	1	-	-	-	-	-	3	-	1	-
CO3	-	-	-	2	-	-	1	-	3	-	-	-
CO4	-	-	3	-	-	-	-	-	-	2	-	1
CO5	-	-	-	1	2	3	-	1	-	-	-	-

High-3 Medium-2 Low-1

Unit I Implement basic fundamental programming. 12 Hours

Programs for simple arithmetic operations, finding the greatest number among two or three numbers, and determining if a number is even or odd. Also, create programs to print a user-specified multiplication table, a pyramid pattern with asterisks, and a pyramid pattern with binary numbers (0, 1).

Unit II Utilize conditional statements and loops. 12 Hours

Programs to determine leap years, check if a number is prime, generate the Fibonacci series, and find even or odd numbers using functions. Additionally, create programs using special constructs like continue and break, find the largest number using a ternary operator, and print the Fibonacci series using GOTO.

Unit III Manipulates data structures and understands recursion. 12 Hours

Programs to compute the sum and average of array elements, find the largest and smallest elements in an array, and calculate the sum of two matrices. Additionally, create programs to find factorials and powers using recursion, and store student information using structures.

Unit IV Handle files. 12 Hours

Programs to read, write, and append single characters, as well as numbers and characters, to a file using file functions. These programs handle file operations for basic text manipulation and data storage.

Unit V Use functions and macros 12 Hours

Programs to swap two numbers with and without a third variable, calculate areas of various shapes using switch case statements, and perform basic string manipulations such as concatenation, comparison, length calculation, and copying. Additionally, include programs for variable address retrieval using pointers, power calculation, macro function usage, and checking defined macros in a user-defined header file.

List of Experiments

1. Write a program for simple arithmetic operations?
2. Write a program for finding the greatest number among two numbers?
3. Write a program for the greatest number among the three numbers?
4. Write a program for finding an even or odd number?
5. Write a program for finding leap year?
6. Write a program to swap two numbers using a third variable?
7. Write a program to swap two numbers without a third variable?
8. Write a program for printing a table which is given by the user?
9. Write a program for printing tables with valid conditions?
10. Write a program to print in * in the pattern pyramid?
11. Write a program to print binary numbers (0, 1) in pyramid pattern?
12. Write a program to find the largest number among two numbers using a ternary operator?
13. Write a program to check given number is prime or not?
14. Write a program to generate the Fibonacci series?
15. Write a program for finding sum & average of array elements?
16. Write a program to calculate the area of giving the shapes: 1. Circle 2. Triangle 3. Rectangle 4. Square using switch case statements?
17. Write a program to swap two numbers using a third variable to function?
18. Write a program to swap two numbers without using a third variable to function?
19. Write a program for triangle to the given pattern

*

* *

* * *

* * * *

* * * * *

20. Write a program for pyramid to the given pattern

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* *

* * *

* * * *

21. Write a program for finding the reverse number which is given by the user?
22. Write a program for finding the sum of the given number?
23. Write a program to find even or odd numbers using functions?
24. Write a program to find the largest and smallest element from an array?
25. Write a program for finding the sum of two matrices?
26. Write a program for finding the factorial number?
27. Write a program finding factorial using recursion?
28. Write a program finding the power of a given number using recursion?
29. Write a program to print Fibonacci series using GOTO?
30. Write a program of special constructs using continue?
31. Write a program of special constructs using break?
32. Write a program to store information of student using structure?
33. Write a program to find the address of a variable using a pointer variable?
34. Write a program finding the power of a given number?
35. Write a program to connect two strings using string function?
36. Write a program to compare one string to another string using string function?
37. Write a program to calculate the length of string using string function?
38. Write a program to copy one string to another string using string function?
39. Write a program to copy one string to another string without string function?
40. Write a program to calculate the area of a circle using the macro function?
41. Write a program to include user defined header file in C Program.?
42. Write a program to check macros which are defined or not in the program?
43. Write a program to read one character from the file using the file function?

44. Write a program to write one character to the file using the file function?
45. Write a program to append one character to the file using the file function?
46. Write a program to read numbers and characters from the file using the file function?
47. Write a program to write numbers and characters to the file using the file function?
48. Write a program to append numbers and characters to the file using the file function?

Total Hours: 60

Reference Books:

1. Kerninghan& Richie: The C Programming language, PHI
2. Cooper Mullish: The Spirit of C, Jaico Publishing House, Delhi
3. Kanetkar Y: Let us C
4. Kanetkar Y: Pointers in C.

List of e-Learning Resources:

1. https://www.coursera.org/courses?query=c%20programming
2. https://www.udemy.com/topic/c-programming/
3. https://nptel.ac.in/courses/106104128
4. https://www.codecademy.com/catalog/language/c

Prepared By	Academic Coordinator	HOD	Senior Faculty nominated by DOAA

BCA (Cloud Computing)

Semester-I

L-0 T-0 P-4 C-2

25BCC030P: Cloud Computing Concepts-1

Course Objectives

- To learn about the basics of Cloud Computing.
- To learn about Cloud Computing Service Models.
- To learn and practice Grid Computing.
- To know about Cloud Computing Architecture.
- To get the overview of Cloud Applications.

Course Outcomes

1. Students will be able to understand the fundamental concepts and models of cloud computing.
2. Students will be able to implement and manage Infrastructure as a Service (IaaS) and Storage as a Service (SaaS).
3. Students will be able to configure and utilize basic networking devices and commands effectively.
4. Students will be able to create, manage, and configure virtual machines using VMware Workstation and VirtualBox.
5. Students will be able to analyze and apply cloud platform case studies to manage cloud services and accounts.

Articulation Matrix

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CO3	-	1	2	3	-	-	1	-	-	-	-	-
CO4	1	-	2	-	3	-	-	1	-	-	2	1
CO5	-	1	-	2	-	3	-	-	-	1	1	2

High-3 Medium-2 Low-1

Unit I: Cloud Storage and Operating Systems 12 Hours

Using cloud storage and installing different operating systems, creating image of system

Unit II: Virtual Machine 12 Hours

Downloading and installing different hypervisor software like VMware, virtual box etc and configuring and installing different operating systems using hypervisors.

Unit III: Networking and Remote Access Skills 12 Hours

Practical skills in networking, including the use of basic networking devices, IP addressing, and essential networking commands. Accessing remote machine using RDP and ssh protocols.

Unit IV: Virtual Server **12 Hours**

Creating virtual server: windows on EC2, Linux on EC2, accessing virtual Server: RDP, SS H.

Unit V: Web Server and Cloud Storage **12 Hours**

Website hosting: hosting website on EC2, creating S3 bucket, Hosting static website on S3 bucket, exploring Google Cloud Platform (GCP)

Total: 60 Hours

List of Experiments

1. Experiment with Cloud Storage (e.g., Google Drive, Dropbox)
2. Creating a Simple Document on a Cloud-Based Application (e.g., Google Docs)
3. Installation of Windows Operating System
4. Installation of Linux Operating System.
5. Creating Image of System using Acronis.
6. Download and Install Virtual Machine(Virtual Box, VMware and KDM) and other software
7. Install different operating system using virtualization software
8. Find a procedure to transfer the files from one virtual machine to another virtual machine.
9. Remote login using ssh on Linux system
10. Remote login using and RDP on windows computer
11. Study of networking commands
12. Create local area network using packet tracer
13. Install a web server (like Apache or Nginx) on your local machine and host a simple HTML page to test local network access: Local web server setup.
14. Exploring AWS management console.
15. Create windows EC2 Server in AWS and Access EC2 Using RDP.
16. Create Linux EC2 Server in AWS and access using SSh.
17. Creating Web server on EC2 and deploying simple website
18. Creating an S3 Bucket.
19. Hosting Static website in S3 Bucket
20. Exploring Google cloud platform.

Total: 60 Hours

Reference Books:

1. Cloud Computing for Dummies" (Wiley India Edition), 2010, Bloor R., Kanfman M., Halper F. Judith Hurwitz.
2. "Cloud Computing: Principles and Paradigms", Rajkumar Buyya, James Broberg, Andrzej M. Goscinski, John Wiley and Sons Publications, 2011.
3. "Cloud Computing: Insights into New-Era Infrastructure", Dr Kumar Sourabh, John Wiley and Sons Publications, 2011.
4. "Cloud Computing: Black Book", Kailash Jayaswal, Jagannath Kallakurchi, Donald J. Houde Deven Shah, Kogent Learning Solutions, Dreamtech Press.

5. Krutz , Vines, “Cloud Security “ , Wiley Pub.
6. “Mastering Cloud Computing”, Rajkumar Buyya, C. Vecchiola & S. Thamarai
7. Selvi, McGRAW Hill Publication.

List of e-Learning Resources:

1. https://nptel.ac.in/
2. https://www.coursera.org/
3. https://www.edx.org/

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