



**GOKUL  
GLOBAL  
UNIVERSITY**

Approved By Govt. of Gujarat  
(Recognized by UGC under Section 22 & 2(f) of 1956)  
(Gujarat Private State University Act 4 of 2018)

# BCA

## COURSE STRUCTURE

**Bachelor Of Computer Applications  
(BCA)  
Batch 2024-25**



**Faculty of Computer Science & Applications**  
**Gokul College of Computer Science & Applications**



University Campus, State Highway-41, Sidhpur - 384151, Dist. Patan, Gujarat, INDIA

**E:** dean.fac.compsci@gokuluniversity.ac.in **W:** www.gokuluniversity.ac.in **M:** +91 95124 00808



**BCA SEM 1 SUBJECTS**

Subject code	Course Type	Name of subject	Course Credit	Internal Marks	External Marks	Total Marks
CPMJDS AFC101	Discipline Specific Course(major)	Fundamentals of Programming Language 'C'	4	50	50	100
CPMJDS CADB101A	Discipline Specific Course(major)	Database Management System	4	50	50	100
CPMNDS AFC102	Discipline Specific Course(minor)	Practical - Fundamentals of Programming Language 'C'	2	25	25	50
CPMNDS CADB102A	Discipline Specific Course(minor)	Practical – DBMS & Office	2	25	25	50
CPMDCADC103	Multi Disciplinary Course	Digital Computer System Architecture	4	50	50	100
CPAECACS104	Ability Enhancement Course	Communication Skills - I	2	25	25	50
CPIKSAUI105	Indian Knowledge System	Understanding India	2	25	25	50
CPSECAMA106	Skill Enhancement Course	Mathematics	2	25	25	50
	<b>Total</b>		22	275	275	550



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<b>Program :</b>	BCA	<b>Subject / Branch :</b>	NA
<b>Year :</b>	2023/24	<b>Semester :</b>	I
<b>Course title :</b>	Fundamentals of Programming Language 'C'	<b>Course code :</b>	CPMJDSCAFC101
<b>Course type :</b>	Theory	<b>Course credit :</b>	04
<b>Pre-requisite :</b>	Basic Knowledge of Computer		
<b>Rationale :</b>	To introduce students the essentials of computer Programming and programming methodology using C language		

### Teaching Examination Scheme:

Teaching (Hours/week)			Examination Scheme			
Lecture	Tutorial	Practical	Internal		External	Total
			Mid	CE		
0	0	4	30	20	50	100

### Course Objective:

1. Students will understand to formulate a computing problem to executable computer program using C language.
2. Students will understand about compiler based programming languages
3. Students will learn concepts of variables, literals, data types, conversions of data types, input and output data and processing of data, inbuilt functions, arrays, header files, conditional and iterative statements.

### Course Outcome:

1. Design and implement C programs to solve complex problems.
2. Describe the purpose and usage of basic c concept, control flow statements, looping and branching statements, array.
3. Analyze and predict the output of more complex C programs and identify and correct logical errors in C code.
4. Recognize and recall C language syntax and keywords, data types and their characteristics, variables, control flow statements, looping, array to create logical program structures and their usage.
5. Assess the quality of code in terms of readability, maintainability, and adherence to coding standards.



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## Content

Unit	Description in detail	Credit	Weightage
I	<b>Introduction to Programming</b>  Concepts of Algorithm and Flowcharts, problem solving examples using algorithm and flowchart, Types of Programming languages, Characteristics of higher level language, Compiler and Interpreter <b>Overview of C Introduction</b>  Importance of C, Sample C programs, Basic structure of C programs, Programming style, executing of C program <b>Constants, Variables and data Types</b>  Introduction, Character Set, C tokens, Keywords and Identifiers, Constants, Variables, Data types, Declaration of Variables, Defining symbolic constants	1	25 %
II	<b>Operators and Expression</b> Introduction, Arithmetic of Operators, Relational Operators, Logical Operators, Assignment Operators, Increment and Decrement Operators, Conditional Operators, Bit-wise Operators, Special Operators, Arithmetic Expressions, Evaluation of expressions, Precedence of arithmetic operators, Type conversions in expressions, Operator precedence and associativity, Mathematical functions. <b>Input &amp; Output Operators</b>  Introduction, reading a character, writing a character, formatted input, formatted output.	1	25 %
III	<b>Branching and Looping</b>  Introduction Decision making with Simple IF statement, IF ELSE	1	25 %





	statement, Nesting of IF ELSE statements, The ELSE IF ladder, The switch statement, the ternary (? :) Operator, the GOTO statement. <b>Iterative Statement</b>  Introduction WHILE statement, the DO statement, The FOR statement, Jumps in loops Break and continue		
IV	<b>Array &amp; String</b>  Introduction, One-dimensional, arrays, Two-dimensional arrays, Initialization of two- dimensional arrays, Concept of Multidimensional arrays  <b>Handling of Character strings</b>  Introduction, Declaring and initializing string variables, Reading strings from terminal, Writing strings to screen, Arithmetic operations on characters, Putting string together, String Operations: String Copy, String Compare, String Concatenation And String Length, String Handling functions, Table of strings	1	25 %

#### Reference Books:

1. Programming in C, Balaguruswami – TMH
2. C: How to Program, Deitel & Deitel - PHI
3. C Programming Language, Kernigham & Ritchie - TMH

#### Suggested Readings:

1. Mastering Turbo C, Kelly & Bootle - BPB
2. C Language Programming – Byron Gottfried - TMH
3. Let us C, Yashwant Kanetkar - BPB Publication

#### Online Resources:

1. <https://www.w3schools.com/>
2. <https://www.tutorialspoint.com/>
3. <https://www.programiz.com/>
4. <https://www.cprogramming.com/>





Course Outcome  Fundamentals of Programming Language 'C', CPMJDSCAPC101	Expected Mapping with Programme Outcomes  (1- Weak Correlation; 2- Medium correlation; 3- Strong Correlation)													
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO-1	2	1				3	3							2
CO-2	3					3	3							
CO-3		3	3			2	3							
CO-4	2					3	3						3	
CO-5	1												3	





<b>Program :</b>	BCA	<b>Subject / Branch :</b>	NA
<b>Year :</b>	2023/24	<b>Semester :</b>	I
<b>Course title :</b>	Practical - Fundamentals of Programming Language 'C'	<b>Course code :</b>	CPMNDSCAFC102
<b>Course type :</b>	Practical	<b>Course credit :</b>	02
<b>Pre-requisite :</b>	Basic Knowledge of Computer		
<b>Rationale :</b>	To introduce students the essentials of computer Programming and programming methodology using C language		

### Teaching Examination Scheme:

Teaching (Hours/week)			Examination Scheme			
Lecture	Tutorial	Practical	Internal		External	Total
4	0	0	Mid	CE	25	50
			15	10		

### Course Objective:

1. Students will understand to formulate a computing problem to executable computer program using C language.
2. Students will understand about compiler based programming languages
3. Students will learn concepts of variables, literals, data types, conversions of data types, input and output data and processing of data, inbuilt functions, arrays, header files, conditional and iterative statements.

### Course Outcome:

1. Design and implement C programs to solve complex problems.
2. Describe the purpose and usage of basic c concept, control flow statements, looping and branching statements, array.
3. Analyze and predict the output of more complex C programs and identify and correct logical errors in C code.
4. Recognize and recall C language syntax and keywords, data types and their characteristics, variables, control flow statements, looping, array to create logical program structures and their usage.
5. Assess the quality of code in terms of readability, maintainability, and adherence to coding standards.



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## Practical List

### Practical:

1. Write a C program to display "Gokul University" on the screen.
2. Write a C program to find the area of circle using the formula  $\text{Area} = \pi * r * r$ .
3. Write a C program to find the area of rectangle, cube and triangle. (Formula are: Rectangle= $l * b * h$ , triangle =  $(I * b) * 0.5$ , cube =  $L * L * L$ )
4. Write a C program to evaluate simple interest  $I = P * R * N / 100$ .
5. Write a C program to enter a distance into K.M and convert it in to meter, feet, inches and Centimeter
6. Write a C program to interchange two numbers.
7. Write a C program to convert Fahrenheit into centigrade
8. Write a C program for summation, subtraction, multiplication, division of two number using Arithmetic operator
9. Write a C program to find out the largest value from given three numbers using conditional Operator
10. Write a C program to find the maximum number from given three numbers.
11. Write a C program to find that the enter number is Negative, or Positive or Zero.
12. Write a C program to Checked whether entered char is capital, small, digit or any special Character
13. Write a C program to find out the max. and min. number from given 10 numbers.
14. Write a C program to find the sum of digit of accepted number.
15. Write a C program to find the sum of first 100 odd numbers. And even numbers.
16. Write a C program to display first 25 Fibonacci nos.
17. Write a C program to check the accepted number is prime number or not.







18. Write a C program to display first 100 prime numbers.
19. Write a C program to find factorial of accepted numbers.
20. Write a C program to print accepted no and its reverse number.
21. Write a C program to convert decimal numbers into equivalent hexadecimal number.
22. Write a C program to display first 5 Armstrong number.
23. Write a C program to arrange the accepted numbers in ascending order and descending order.
24. Write a C program to find whether the accepted string is palindrome or not.
25. Write a C program to convert given line into upper case or lower case.
26. Write a C program to count no of word, character, line and space from given text.
27. Write a C program to display following output on the screen.  
1  
12  
123  
1234
28. Write a C program to display following output on the screen.  
0  
1 1  
1 0 1  
0 1 0 1  
1 0 1 0 1
29. Write a C program to display following output on the screen.  
1  
22  
3 3 3  
4 4 4 4
30. Write a C program to find maximum & minimum value from the given array





### Reference Books:

1. Programming in C, Balaguruswami – TMH
2. C: How to Program, Deitel & Deitel - PHI
3. C Programming Language, Kernigham & Ritchie - TMH

### Suggested Readings:

1. Mastering Turbo C, Kelly & Bootle - BPB
2. C Language Programming – Byron Gottfried - TMH
3. Let us C, Yashwant Kanetkar - BPB Publication

### Online Resources:

1. <https://www.w3schools.com/>
2. <https://www.tutorialspoint.com/>
3. <https://www.programiz.com/>
4. <https://www.cprogramming.com/>

Course Outcome Practical - Fundamentals of Programming Language 'C' CPMNDSCAFC102	Expected Mapping with Programme Outcomes (1- Weak Correlation; 2- Medium correlation; 3- Strong Correlation)													
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO-1	2	1				3	3							2
CO-2	3					3	3							
CO-3		3	3			2	3							
CO-4	2					3	3						3	
CO-5	1												3	





<b>Program :</b>	BCA	<b>Subject / Branch :</b>	NA
<b>Year :</b>	2023/24	<b>Semester :</b>	I
<b>Course title :</b>	Database Management System	<b>Course code :</b>	CPMJDSADB101A
<b>Course type :</b>	Theory	<b>Course credit :</b>	04
<b>Pre-requisite :</b>	Knowledge about Database Management System		
<b>Rationale :</b>	DBMS helps to share the data Quickly, effectively and securely and also access the data vary fast with the accurate result. It gives to knowledge to the student how the data can be stored and accessed.		

### Teaching Examination Scheme:

Teaching (Hours/week)			Examination Scheme			
Lecture	Tutorial	Practical	Internal		External	Total
			Mid	CE		
4	0	0	30	20	50	100

### Course Objective :

1. Make access to the data easy for the user.
2. Protect Data From Physical harm and unauthorized systems.
3. Allow for growth in the data base system.

### Course Outcome:

1. Evaluate the security and integrity of a database system
2. Analyze different types of database models (relational, hierarchical, network)
3. Apply normalization techniques to design and optimize database schemas
4. Explain the principles of database management systems in organizing and retrieving information.
5. Recognize fundamental concepts of databases, such as tables, records, fields, and keys and Memorize and list common terms used in database management.



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## Content

Unit	Description in detail	Credit	Weightage
I	Database and DBMS, Comparison between traditional file V/s DBMS, Characteristics of data in database, Components of database system environment, Functions of DBMS, Advantages and disadvantages of the DBMS, DBMS users, Database administrator, Role of DBA	1	25 %
II	Essentials of Database Design, Three level Architecture of Database- external, conceptual and internal, Data Models concepts: Hierarchical, Network and Relational, Operators, relations, domains and attributes, keys, traditional set operations, special relational operations.	1	25 %
III	<b>The E/R model :</b> Entity, E-R Diagram, Attributes, Relationship & Types, Development stages of E-R diagram & Examples  <b>Normalization:</b> Normalization Process, 1 stNF , 2 nd NF, 3 rd NF, demoralization.	1	25 %
IV	Introduction of Database Data type - Text, Number, Auto number, Currency, Boolean, Date/Time, Memo Object – Table, Query, Forms, Reports Controls use in form and report	1	25 %





### Reference Books:

1. Database System Concepts: – Henry F. Korth & Abraham Silberschatz – McGraw Hill Education
2. Introduction to database Management – Navin Prakash -TMH
3. Introduction to Database System C. J. Date (7 Edition) Low Price Edition
4. MS Office Fundamental & Internet

### Suggested Readings:

1. Introduction to database Management – Navin Prakash -TMH

### Online Resources:

1. <https://www.geeksforgeeks.org/dbms>
2. <https://www.javatpoint.com/dbms-tutorial>
3. <https://www.tutorialspoint.com/dbms/index.htm>

Course Outcome	Expected Mapping with Programme Outcomes													
	(1- Weak Correlation; 2- Medium correlation; 3- Strong Correlation)													
Database Management System, CPMJDSCADB101A	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO-1	1					3	3							
CO-2		3	2		2			2						
CO-3								3				1		
CO-4	3		2			1	3						2	
CO-5						2	3						3	





<b>Program :</b>	BCA	<b>Subject / Branch :</b>	NA
<b>Year :</b>	2023/24	<b>Semester :</b>	I
<b>Course title :</b>	Practical – DBMS & Office	<b>Course code :</b>	CPMNDSCADB102A
<b>Course type :</b>	Practical	<b>Course credit :</b>	02
<b>Pre-requisite :</b>	Knowledge about Database Management System		
<b>Rationale :</b>	DBMS helps to share the data Quickly, effectively and securely and also access the data vary fast with the accurate result. It gives to knowledge to the student how the data can be stored and accessed.		

### Teaching Examination Scheme:

Teaching (Hours/week)			Examination Scheme			
Lecture	Tutorial	Practical	Internal		External	Total
0	0	4	Mid	CE	25	50
			15	10		

### Course Objective :

1. Make access to the data easy for the user.
2. Protect Data From Physical harm and unauthorized systems.
3. Allow for growth in the data base system.

### Course Outcome:

1. Evaluate the security and integrity of a database system
2. Analyze different types of database models (relational, hierarchical, network)
3. Apply normalization techniques to design and optimize database schemas
4. Explain the principles of database management systems in organizing and retrieving information.
5. Recognize fundamental concepts of databases, such as tables, records, fields, and keys and Memorize and list common terms used in database management.



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## Content

### Practical:

1. Essential Skills, Starting Microsoft Excel, Managing Workbook Files, Working in Workbooks, Selecting Cells and Choosing Commands, entering Data, Using Formulas to Calculate Values, Editing a Worksheet, formatting a Worksheet, Printing, Consolidating Data, Creating Charts (graphs), Chart Types, Auto formats, Changing Data in a Chart, Formatting a Chart, Organizing and Analyzing Data in a List Using a List to Organize, data sorting and filtering Data in a List Summarizing Data in a List, Presenting, Reviewing, and Sharing Workbooks, Creating Graphic Objects on Worksheets and Charts, Auditing and Adding Comments to Documents, Protecting a Workbook, Exchanging Data with Other Applications, Sharing Data and Graphics with Other Applications, Importing and Exporting Documents, Switching from Other Applications.
2. Practical may be given to create
  - Pivot table
  - Macro facility
  - Student mark sheet using formula & chart
  - Salary sheet using formula & chart

### Database Tools

3. Create a database with different data types using wizard.
4. Create relationship between two tables using keys (Primary key & Foreign Key)
5. Create report using wizard
6. Create student information system with insert, update, delete and view







### Reference Books:

1. Database System Concepts: – Henry F. Korth & Abraham Silberschatz – McGraw Hill Education
2. Introduction to database Management – Navin Prakash -TMH
3. Introduction to Database System C. J. Date (7 Edition) Low Price Edition
4. MS Office Fundamental & Internet

### Suggested Readings:

2. Introduction to database Management – Navin Prakash -TMH

### Online Resources:

4. <https://www.geeksforgeeks.org/dbms>
5. <https://www.javatpoint.com/dbms-tutorial>
6. <https://www.tutorialspoint.com/dbms/index.htm>

Course Outcome	Expected Mapping with Programme Outcomes													
	(1- Weak Correlation; 2- Medium correlation; 3- Strong Correlation)													
Practical – DBMS & Office, CPMNDSCADB102A	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO-1	1					3	3							
CO-2		3	2		2			2						
CO-3								3				1		
CO-4	3		2			1	3						2	
CO-5						2	3						3	





<b>Program :</b>	BCA	<b>Subject / Branch :</b>	NA
<b>Year :</b>	2023/24	<b>Semester :</b>	I
<b>Course title :</b>	Digital Computer System Architecture	<b>Course code :</b>	CPMDCADC103
<b>Course type :</b>	Theory	<b>Course credit :</b>	04
<b>Pre-requisite :</b>	The students should have a basic Understanding of Digital computer Organization and Architecture or Micro Processors		
<b>Rationale :</b>	It gives information to students which gives the means of interconnectivity for a computer's hardware components as well as the mode of data transfer and processing exhibited.		

### Teaching Examination Scheme:

Teaching (Hours/week)			Examination Scheme			
Lecture	Tutorial	Practical	Internal		External	Total
			Mid	CE		
4	0	0	30	20	50	100

### Course Objective :

1. To understand the structure, function and characteristics of computer system.
2. To identify and compare different method for computer I/O.
3. Identify and understand the Number system.

### Course Outcome:

1. Recall fundamental concepts and terminology related to computer system architecture.
2. Interpret the purpose and functionality of different components in a computer system.
3. Apply knowledge of computer system architecture to solve problems or design simple systems.
4. Combine knowledge of computer system architecture to design innovative solutions.



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## Content

Unit	Description in detail	Credit	Weightage
I	Digital & Analog systems, Logic levels and pulse wave forms, digital computer, Major parts of computer, Hardware, Software - Application and System Software Computer generations First generation, Second generation, Third generation, Forth generation, Fifth generation  Super Computers, Mainframes, Mini Computers, Palmtop PC, Laptop PC, Personal Computer, Workstations, Mainframe, Supercomputer.  Dos, Windows, Linux	1	25 %
II	Communication devices -Modem, NIC, Switch, Hub Keyboard, Mouse, Light pen, Joystick, Scanner, Voice input system, Touch Monitor - CRT terminals (Monitor / VDU) Non – CRT terminals, LCD, Plasma display, LED Printer - Dot matrix printer, Ink jet printer, Laser printer, Line printer, Plotter Magnetic memory - Magnetic disk, Hard disk, Floppy disk, Semiconductor memory - RAM, ROM, Flash memory Optical memory - CD, CD-ROM, CD-RAM, DVD, DVD-ROM, DVD-RAM Cache memory, Physical & Virtual memory	1	25 %





III	Number system - Binary, decimal, octal, hexadecimal Conversion - Binary to decimal, decimal to binary, octal to decimal, decimal to octal, octal to binary, binary to octal, hexadecimal to binary, binary to hexadecimal, hexadecimal to decimal, decimal to hexadecimal, hexadecimal to octal, octal to hexadecimal Binary arithmetic – Addition, subtraction (simple method)	1	25 %
IV	Logic gates - AND, OR, NOT, NAND, NOR, Exclusive-OR, Exclusive-NOR Data Processing circuit - Decoder, Encoder	1	25 %

#### Reference Books:

1. Fundamentals of computers – By. V. Rajaraman PHI Publication
2. How computer work: Ron White – Tech media
3. O-Level (Information Technology) - By V.K.Jain (Module- M1.1)
4. Computer Fundamentals: Pradeep K. Sinha & Priti Sinha (BPB)
5. Fundamentals of computers – By. Anand Kumar PHI Publication

#### Suggested Books:

1. Fundamentals of computers – By. Anand Kumar PHI Publication

#### Online Resources:

1. <https://edu.gcfglobal.org/en/computerbasics/what-is-a-computer/1/>
2. [https://www.tutorialspoint.com/digital\\_circuits/digital\\_circuits\\_logic\\_gates.htm](https://www.tutorialspoint.com/digital_circuits/digital_circuits_logic_gates.htm)
3. [https://www.tutorialspoint.com/computer\\_fundamentals/computer\\_number\\_system.htm](https://www.tutorialspoint.com/computer_fundamentals/computer_number_system.htm)



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Course Outcomes  Digital Computer System Architecture, CPMDCADC103	Expected Mapping with Programme Outcomes (1- Weak Correlation; 2- Medium correlation; 3- Strong Correlation)													
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO-1	3				3	1	3						3	
CO-2	3				1	3				2				
CO-3	2		1	1									3	
CO-4	2		2											



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<b>Program :</b>	BCA	<b>Subject / Branch :</b>	NA
<b>Year :</b>	2023/24	<b>Semester :</b>	I
<b>Course title :</b>	Communication Skills - 1	<b>Course code :</b>	CPAECACS104
<b>Course type :</b>	Theory	<b>Course credit :</b>	02
<b>Pre-requisite :</b>	Basic Knowledge of English Language		
<b>Rationale :</b>	To make the students confident and make them aware about their personality development.		

### Teaching Examination Scheme:

Teaching (Hours/week)			Examination Scheme			
Lecture	Tutorial	Practical	Internal		External	Total
			Mid	CE		
2	0	0	15	10	25	50

### Course Objective :

1. Students will develop their confidence.
2. Students will understand the importance of personality development and self awareness.
3. Students understand the importance of language and learn different techniques of interview, presentation etc.

### Course Outcome:

1. Demonstrate the ability to articulate ideas clearly and confidently in spoken form.
2. Develop active listening skills, enabling them to comprehend and respond appropriately to various communication cues.
3. Enhance their written communication skills, producing clear, concise, and organized written documents.
4. Evaluate the effectiveness of different communication methods.
5. Implement learned communication techniques in real-world scenarios
6. Apply effective communication strategies in digital environments, including email, video conferencing, and social media.



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## Content

Unit	Theory of Communication	Credit	Weightage
I	<b>Communication</b> → Meaning and Objectives → Process and Importance, → Barriers <b>Methods of Communication</b> → Verbal and Non-Verbal → Horizontal, → Grapevine <b>Steps of Effective Communication</b>	1	25 %
II	<b>Grammar</b> → Parts of Speech → Subject Verb Agreement → Indirect speech → Auxiliaries and Modals → Questions and Negatives	1	25 %

### Reference Books:

1. Communication Skills – Vithal Patel
2. English Grammar Composition and Effective Business Communication- Pink and Thomas – S. Chand

### Suggested Readings:

1. Story books to increase vocabulary.
2. Listen Motivational videos.
3. Read interested area in English News Papers.

### Online Resources:

1. <https://learnenglish.britishcouncil.org/grammar-reference>
2. <https://en.m.wikipedia.org/communication>



— Faculty of Computer Science & Applications —  
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Course Outcomes Communication Skills - 1 CPAECACS104	Expected Mapping with Programme Outcomes (1- Weak Correlation; 2- Medium correlation; 3- Strong Correlation)													
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO-1						2	3		3		3			
CO-2									3	1				
CO-3		2										2		
CO-4									3					
CO-5									3	2				





<b>Program:</b>	BCA	<b>Subject / Branch:</b>	NA
<b>Year:</b>	2023/24	<b>Semester:</b>	I
<b>Course title:</b>	Understanding India	<b>Course code:</b>	CPIKSAUI105
<b>Course type:</b>	Theory	<b>Course credit:</b>	02
<b>Pre-requisite :</b>	knowledge of its diverse history, cultural richness, and socio-economic dynamics.		
<b>Rationale :</b>	Acquiring knowledge about India is key for fostering cross-cultural understanding and participating in a globally interconnected world.		

### Teaching Examination Scheme:

Teaching (Hours/week)			Examination Scheme			
Lecture	Tutorial	Practical	Internal		External	Total
			Mid	CE		
2	0	0	15	10	25	50

### Course Objective:

1. The course aims at enabling the students to acquire and demonstrate the knowledge and understanding of contemporary India.
2. The course would also focus on developing an understanding among student-teachers of the Indian knowledge systems, the Indian education system, Indian tradition, art and culture and the roles

### Course Outcome:

1. Demonstrate the ability to list key historical events, dates, and facts about India.
2. Identify and memorize important geographical features and landmarks of India.
3. Apply knowledge of India's political system to analyze current events.
4. Analyze the cultural influences on art, literature, and architecture in India.



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## Content

Unit		Credit	Weightage
I	<b>Concept of Bharatvarsh:</b> <ul style="list-style-type: none"><li>– Understanding Of Bharatvarsh.</li><li>– The Land of India: Landscape, Mountains and Rivers.</li><li>– The Glory of Indian Literature: Ved, Vedanga, Upanishads, Smriti, Puranas.</li><li>– Jain And Buddhist Literature.</li><li>– The Name of Our Country: Jambudvipa, Sindhu (Indus), Inde, Hind, Hindustan, Bharat India</li></ul>	1	25 %
II	<b>Indian tradition, art and culture.</b> <ul style="list-style-type: none"><li>– <b>Architecture and Sculpture:</b> Indus Valley town planning, rock cut architecture, major styles of temples, Mughal architecture, modern and contemporary architecture, stone and metal sculpture</li><li>– <b>Painting:</b> Ajanta murals, Mughal paintings, Madhubani paintings, paintings of Jharkhand (Kohbar, Sohrai, Jadopatia, etc.).</li><li>– <b>Music and Dance:</b> Overview of various forms of music and dances in India; Chau dance of Jharkhand and Odisha</li><li>– <b>Science, Technology and Medicine:</b> A general survey of the progress of science, technology and medicine in ancient India</li></ul>	1	25 %





### Reference Books:

1. A.S. Altekar, Education in Ancient India, Nand Kishor's & Bros. Varasani, 1944.
2. Bhagvdatt: Brahad Bharat Ka Itihas, Pranav Prakashan, New Delhi
3. Narendra Mohan: Bharatiya Sanskruti, Prabhat Prakashan, Delhi 2005
4. Satish Chandra Mittal: Bharatiya Sanskruti ke char adhyay, akhilbharatiyaitihassankalan yojana, Delhi 2018
5. R.K. Shrivastava: Prachin Bharat ka Itihastatha Sanskruti.

### Suggested Books:

1. "India: A History" by John Keay
2. "The Argumentative Indian" by Amartya Sen

### Online Resources:

1. [www.indiatoday.in](http://www.indiatoday.in)
2. [www.understandingindia.in](http://www.understandingindia.in)

Course Outcome Understanding India CPIKSAUI105	Expected Mapping with Programme Outcomes (1- Weak Correlation; 2- Medium correlation; 3- Strong Correlation)													
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO-1				2						1			1	
CO-2		3	2							2				
CO-3										3				
CO-4		3								3		2		





<b>Program:</b>	BCA	<b>Subject / Branch:</b>	NA
<b>Year:</b>	2023/24	<b>Semester:</b>	I
<b>Course title:</b>	Mathematics	<b>Course code:</b>	CPSECAMA106
<b>Course type:</b>	Theory	<b>Course credit:</b>	02
<b>Pre-requisite :</b>	Have basic knowledge of mathematics		
<b>Rationale :</b>	Math allows students to very quickly explore non-trivial "real world" problems that are challenging and interesting.		

### Teaching Examination Scheme:

Teaching (Hours/week)			Examination Scheme			
Lecture	Tutorial	Practical	Internal		External	Total
			Mid	CE		
2	0	0	15	10	25	50

### Course Objective:

Introduce concept of mathematical logic for analyzing proposition and proving theorem. Use sets for solving applied problems, and use the properties of set operations algebraically.

### Course Outcome:

1. Determine whether or not a given matrix is invertible and if is, find its inverse.
2. Perform the matrix operations of addition, multiplication and express a system of simultaneous linear equation in matrix form.
3. Determine if an infinite sequence is bounded, monotonic or oscillating
4. Recall basic set theory, Function, Matrices and Determinants, Sequence and Series



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## Content

Unit	Set Theory	Credit	Weightage
I	<p>Definition and notation of Set, Methods of representation of set (Property and List Method), set of numbers (Natural, Integers, Rational, Irrational, Real),</p> <p>Definition: Finite set, Infinite set, Empty set, Singleton set, Subset, Proper subset of a set, Power set, Universal set, Complement of a set, Cardinality of set, Venn Diagrams,</p> <p>Set Operations: Union of two sets, Intersection of two sets, Disjoint sets, Equality of sets, Equivalent sets, Difference set, Symmetric Difference set, Cartesian product of sets,</p> <p>Properties of set operations (Commutative, Associative, Distributive, De Morgan's laws)</p>	1	25 %
II	<b>Function</b>		
	<p>Introduction of Function, Definition of function, Domain, Co-domain, Image and Range of function, Types of function(with example): Linear, Quadratic, Polynomials, Rational, Irrational, Single value and Many value, Even and Odd, Explicit and Implicit</p> <p>The Classification of functions: one-one, many-one, onto, into function, Evaluation of function, Composition of functions,</p> <p>Mathematical functions (Definition with example): Floor and Ceiling function, Integer and Absolute value function, Remainder</p>	1	25 %





	function, Exponential function, logarithm function and its properties, Recursive function.		
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### Reference Books:

1. Discrete Mathematics -Revised 3<sup>rd</sup> Edition Authors: **Seymour Lipschutz** and **Marc Lars Lipson**, Publication: McGraw-Hill Education (India) Pvt Limited
2. Elements of Discrete Mathematics -3<sup>rd</sup> Edition Authors: Chung Laung Liu and Durga Prasad Mohapatra Publication: McGraw-Hill Education (India) Pvt Limited
3. Discrete Mathematics -3<sup>rd</sup> Edition Author: J. K. Sharma

### Suggested Books:

1. Elements of Discrete Mathematics -3<sup>rd</sup> Edition Authors: Chung Laung Liu and Durga Prasad Mohapatra Publication: McGraw-Hill Education (India) Pvt Limited

### Online Resources:

1. <https://www.weareteachers.com/best-math-websites/>

Course Outcomes	Expected Mapping with Programme Outcomes													
	(1- Weak Correlation; 2- Medium correlation; 3- Strong Correlation)													
Mathematics, CPSECAMA106	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO-1	3	2												
CO-2						3	2							
CO-3	2	1												
CO-4		2				3	3			1			2	

