

**KADI SARVA VISHWA VIDYALAY
GNADHINAGR**

PROPOSED SYLLABUS

for

B C A

(Bachelor of Computer Applications)

in

Choice Based Credit System

**W. E. F.
JUNE - 2017**

Kadi Sarva Vishwavidhyalaya, Gandhinagar

BCA Semester I BCA101 – Part 1 – Environment Environmental Studies

Rationale :Environmental Science is an interdisciplinary subject which draws on the content of several disciplines to offer a balanced scientific and holistic perspective of environmental issues. It provides knowledge, skills and attitudes to identify, prevent and solve environmental problems and thereby prepares students for ultimate careers in diverse fields of relevance to environmental management and to sustainable development of the nation.

Learning Outcomes:

1. Stimulate interest in the environment
2. Understand the interdisciplinary and holistic nature of environment.
3. Develop knowledge and understanding of environmental issues and principles and the ability to apply this environmental management.
4. Provide and understand of interactions between people and the environment
5. Increase an awareness of the importance of living in harmony with the environment.
6. Develop and understanding of how natural resources and the environment affect the quality of life and the quest for sustainable development of nation.

Teaching and Evaluation Scheme:

Sub. Code	Sub. Type	Subject Title	Teaching Scheme		Exam Scheme				
			Cr.	Hrs. / Week	Theory		Practical		Total Marks
					Internal	External	Internal	External	
BCA 101	Environment	Environmental Studies	2	2	15	35	-	-	50

COURSE CONTENT

Unit I

(50%)

- Definition, scope and basic principles of ecology and environment -2 Hrs.
- Natural Resources –Renewable and Non-renewable resources - 2 Hrs.
- Current environmental issues – climate change, Global warming, Acid rain, Ozone layer depletion – 4 Hrs.
- Pollution- Air, Water ,Soil , Marine , Thermal, Noise pollution- causes and effects – 4 Hrs.

No. of lectures: 12

(50%)

Unit II

- Ecosystem : Basic concepts, components of ecosystem. – 1 Hr.
- Trophic levels, food chains and food web – 1 Hr
- Ecological pyramids, ecosystem functions. – 2 Hrs.
- Energy flow in ecological systems, energy efficiencies – 2 Hrs.
- Biogeochemical Cycles: Importance, gaseous and sedimentary cycles. Carbon, Nitrogen, Phosphorus, hydrogen and Sulphur Cycles. – 6 Hrs.

No. of lectures: 12

References:

1. Modi C D & others (2006) Paryavaran and Aapatti Vyavasthapan [Gujarati], Swami prakashan, Patan-384265
2. Patel J C (2006) Paryavaran and disaster management [Gujarati], Parshwa publication, Ahmedabad-380001
3. Erachs Bharucha (2008, first edition) Paryavaran Adhyayan [Gujarati], Orient Longman Pvt. Ltd., Hyderabad.
4. Distributor: M/S Himanshu book company, 06-07 Shri Jayendrapuri Bhavan, Ellisbridge, New Sanyas Ashram, Ahmedabad – 380 006.
5. K Ramana Murthi, 2004 Disaster Management, Dominant Publishers and Di stributors, New Delhi -110002

Question Paper Scheme:

University Examination	Duration: 1.5 Hours.	Total marks: 35
Q.1-Unit-I & II		(11 Marks)
Objective / Short Questions		
Q.2-Unit-I		(12 Marks)
Descriptive / Long questions		
Q.3-Unit-II		(12 Marks)
Descriptive / Long questions		

Note: Q.2 and Q.3 must have at least 40% Internal Options (i.e. Attempt Any 3 out of 5)

Kadi Sarva Vishwavidhyalaya, Gandhinagar
BCA Semester I
BCA102 – Part 1 – Language: English
Communication Skills

Rationale:

Communication is a dynamic human activity and must keep pace with people's life style, business and occupations. As English is considered as a window to the world, it has become an essential part of communication.

The course has been devised which can help the students to develop their linguistic skills- listening, speaking, reading and writing. It also makes them communicate well in English that includes oral as well as written communication. It proves to be an effective and useful tool as it motivates the student to participate in presentation, group discussions, debates etc...

Learning Outcomes: The student will be able to ...

- Make them communicate effectively in all the areas of life.
- Consolidate the command of basic words.
- Learn new words as well as the meaning of the new words.
- Get into some of processes of word-formation in English.
- Acquaint students with all the important idiomatic expressions.
- Enrich their vocabulary skills.
- Give them opportunity of creative and imaginative thinking by giving them group tasks and activities.

Teaching and Evaluation Scheme:

Sub. Code	Sub. Type	Subject Title	Teaching Scheme		Exam Scheme				
			Cr.	Hrs. / Week	Theory		Practical		Total Marks
					Internal	External	Internal	External	
BCA 102	Language: English	Communication Skills	2	2	15	35	-	-	50

Course Content:

Unit: 1 - Fundamentals of Communication:

(50%)

- Meaning of communication (Book 3: Pg no.1)
- Process of Communication/Communication Cycle (Book 3: Pg no.9,10)
- 7 C's of Communication (Book 3: Pg no.9,10)
- Barriers to Effective Communication: Semantic barrier and Psychological Barrier (Book 3: Pg no.29)
- Listening: Difference between Hearing and listening, Steps of Listening (Book 3: Pg no.51, 59, 60)

No. of Lectures: 10

Unit: 2 - Types of Communication:

(50%)

- Verbal Communication–Oral and written communication, its advantages and disadvantages (Book 4: Points to be covered 2.1.1.1- 2.1.2, 2.1.3)
- Forms of Non-verbal Communication: Kinesics, proxemics, Chronemics and paralanguage (Book 3: Pg no.37,39,40)
- Speaking skills: Telephonic Skills, Do's and Don'ts of Telephonic skills
- (Book 3: Pg no.61-64)
- Situational Dialogues: Making inquiries at the bank, post-office, hospital and college
- (Book 3: Pg no. 70-72)
- Reading Comprehension

No. of Lectures: 10

Reference Books:

- Book 1. Business Communication, Meenakshi Raman & Sangeeta Sharma, Oxford.
Book 2. Basic Communication Skills for Technology, Andrea Rutherford, Person
Book 3. Rosily Victor, Communication Skills, Synergy Knowledgeware (Mumbai)
Book 4. Communication Skills, D.K Chakradev

Sources Required:

Projector and speakers in class

Activities:

- Speaking Activities: Role Play and communicative activities
- Listening audio
- Giving Self-Introduction & Introducing friends
- Reading paragraph and news

Question Paper Scheme:

University Examination	Duration: 1.5 Hours.	Total marks: 35
Q.1-Unit-I & II	Objective / Short Questions	(11 Marks)
Q.2-Unit-I	Descriptive / Long questions	(12 Marks)
Q.3-Unit-II	Descriptive / Long questions	(12 Marks)

Note: Q.2 and Q.3 must have at least 40% Internal Options (i.e. Attempt Any 3 out of 5)

X-----X

Kadi Sarva Vishwavidhyalaya, Gandhinagar
BCA Semester I
BCA103 – Part 2: Core 1
Programming Paradigm with ‘C’

Rationale:

To develop the basic concepts of programming using world’s most popular Middle Level Language through “C”

Learning outcomes: The Students will be able to . . .

- Create fundamentals of structure programming with basic structure
- Develop program. In such a way that machine can take decision by programming
- Know importance of an array by real life example as well as technical problem solving.
- Develop functions and enrich their skill to library function and user define side.

Teaching Methodology:

- Application and Real life examples
- Theory Method with illustration and presentation
- Models
- Charts
- Practical Implementation Simulators
- Animated video

Teaching and Evaluation Scheme:

Sub. Code	Sub. Type	Subject Title	Teaching Scheme		Exam Scheme				
			Cr.	Hrs. / Week	Theory		Practical		Total Marks
					Internal	External	Internal	External	
BCA 103	Core	Programming Paradigm with ‘C’	4	4	30	70	-	-	100

Course Content:

Unit-I (25%)

Objective: This reference has been prepared for the beginners to help them understand Logic Development, execution of program.

Introduction to Programming and Tools of Problem Analysis: Concept and need of programming language, Concepts of Algorithm and Flowchart (with example), Translator- Compiler, Interpreter, linker, loader and assembler.

Overview of C: Introduction, History of C, Basic structure of C program, Sample of C program, executing of C program. Character Set, Usage of C tokens, Types of Tokens- Constants, Keywords, Identifiers, Variables (Declaration and Rules), Defining symbolic constants, Back Slash Character.

Text Book Reference Page No: 1 to 30

Unit-II

(25%)

Objective: Get brief idea of operators, data type, formatted and non-formatted input output functions for building block of Programming in C.

Basics Of C Language: Introduction, Need of Operators-Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Increment and Decrement Operators, Conditional Operators, Bit-wise Operators, Special Operators, importance of Data Types, Types of Data Types, Arithmetic Expressions, Evaluation of expressions, Precedence of arithmetic operators, implicit and explicit Type conversions in built-in data type, Operator precedence and associativity, Mathematical functions (pow(), sqrt(), ceil(), floor())

Input Output Functions: Formatted and Non-formatted- Printf(), Scanf(), getchar(), putchar(), clrscr(), getch(), gets(), puts().

Text Book Reference Page No: 31 to 98

Unit-III

(25%)

Objective: Learn about Decision type Control, Looping type control and special control constructs in C and the technique of putting them to use in certain condition or repeat a group of statements.

Control and Iterative Statement: Concept and Application of Decision making Statement - Simple IF statement, IF ELSE statement, Nesting of IF ... ELSE statements, ELSE IF ladder, Switch statement, ternary (? :) Operator, GOTO statement.

Decision Making Looping: Concept and Application of Looping - WHILE statement, DO- WHILE statement, FOR statement, Break and continue, Nested Looping.

Text Book Reference Page No: 114 to 174

Unit-IV

(25%)

Objective: Get brief idea about how to handle large volume of data in terms of reading, processing and printing. Understand what a string function is and how its use benefits in program.

Array and Strings: Concept and Application of Array, Declaration and initialization of One-dimensional arrays, Declaration and initialization of Two-dimensional arrays, Concept of Multidimensional arrays.

Handling of Character strings: Declaring and initializing string variables, Reading strings from terminal, writing strings to screen.

String Operations: Importance of String Handling functions - String Copy, String Compare, String Concatenation and String Length, Table of strings

Text Book Reference Page No: 190 to 252

Text Book: Programming in ANSI C, Balagurusamy, Tata McGraw-Hill 5th Edition

Reference Books:

1. Programming in C, by Pradip Dey & Manas Ghosh, Publisher-Oxford
2. The Complete Reference, Herbert schildt Fourth Edition
3. Let Us C , Yashwant Kanetkar, BPB Publications
4. Programming in C, by Reenathareja Publisher-Oxford

Reference Link:

- www.carrerskill.com www.mcqsets.com
- www.indiabix.com www.sanfoundry.com

Question Paper Scheme:

University Examination	Duration: 3 Hours.	Total marks: 70
Q.1-Unit-I & II		(11 Marks)
Objective / Short Questions		
Q.2-Unit-I		(12 Marks)
Descriptive / Long questions		
Q.3-Unit-II		(12 Marks)
Descriptive / Long questions		
Q.4-Unit-III & IV		(11 Marks)
Objective / Short Questions		
Q.5-Unit-III		(12 Marks)
Descriptive / Long questions		
Q.6-Unit-IV		(12 Marks)
Descriptive / Long questions		

Note: Q.2,3,5 and Q.6 must have at least 40% Internal Options (i.e. Attempt Any 3 out of 5)

X ----- X

Kadi Sarva Vishwavidhyalaya, Gandhinagar

BCA Semester I

BCA104 – Part 2: Core 2

Internet Technology

Rationale:

The aim of this course is to provide the conceptual and technological developments in the field of internet and web designing with the emphasis knowledge of internet. The internet Web with its wide spread usefulness has become an integral part of the internet. Therefore, this course also puts emphasis on basic knowledge of internet, concepts of web designing and tools to design web pages.

Learning Outcomes:

- Review the current topics in web and internet technologies
- Describes the basic concepts for email and social networking
- Learn the basic working scheme of the internet and WWW
- Understand fundamental tools and technologies for web designing
- Comprehend the technologies for HTML (Hyper Text Markup Language)
- Specify design rules in constructing web pages and sites
- Effectively deal with designing issues and techniques with CSS

Resource Utilization:

Projector, Computer Lab, Internet, CSS Templates for Expansion of work, Reference Webpage Designs.

Teaching and Evaluation Scheme:

Sub. Code	Sub. Type	Subject Title	Teaching Scheme		Exam Scheme				
			Cr.	Hrs. / Week	Theory		Practical		Total Marks
					Internal	External	Internal	External	
BCA 104	Core	Internet Technology	4	4	30	70	-	-	100

Course content:

Unit: 1 Internet, Internet Technology and web applications:

(25%)

Objective: Student will be able to work on internet and its related applications. They can search their interest using internet services. Student will get awareness about the appropriate use of search engines and surfing.

Content:

Introduction to Internet, Extranet, Intranet: Advantages of internet, Access of internet - Dial Up, Cable Modem Connection and WIFI. WWW. Web page, Web site, Hyperlink, URL, Introduction to Internet Domain Name System, FTP, Web Browsers and Web Servers. Uploading and Downloading files, Search Engines, Do's and Dont's for Search Engine, Email Communication and Social Networking (Uses, advantages and disadvantages)

Text book 1: Page nos: 1 to 39

No of Lectures: 07

Unit: 2 HTML - Basics and Advance

(25%)

Objective: Student will be able to learn the language of the web: HTML. Understands HTML tags to develop the static web pages. Understand the importance of the web as a medium of communication. Understand the principles of creating an effective web page, including an in-depth consideration of information architecture. Develop skills in analyzing the usability of a web site.

Content:

Basics of HTML: Introduction to HTML, HTML Documents Structure tags, text formatting tags (Block Formatting, Character Formatting), Link (Anchor) Tag, List Tag, Image, Audio-Video Tags, Marquee Tag,

Advance HTML: HTML Tables – Operations, Spanning on rows and columns, HTML Frames – HORIZONTAL AND VERTICAL FRAMESET, Inline frame and no frame, HTML Forms – Input, textarea, Selection list, fields.

Text book 1: page nos: 46 to 149

No of Lectures: 10

Unit: 3 Introduction Cascading Style Sheet

(25%)

Objective: The purpose of CSS is to provide Web developers with a standard way to define, apply, and manage sets of style characteristics.

Content:

Why CSS, what is CSS, CSS Syntax, CSS Inclusion, CSS Measurement units, CSS Colors, CSS Background, CSS Font and Text, CSS – working with images , CSS Links, CSS Tables and Borders, CSS Margins, CSS List, CSS Padding, CSS Scrollbar, ID and Class Selector, Inline, Internal and External stylesheet.

Textbook 1: page nos: 154 to 177

No of Lectures: 09

Unit:4 Advance CSS and CSS3

(25%)

Objective: Advance CSS and CSS3 introduces new client-side web designs. Student learns the CSS skills needed to create professional looking web pages.

Content:

CSS – Visibility, Positioning, layers, Pseudo Classes, Text effects, Media Type, Aural Media, Layouts, Printing, CSS – Rounded corner, Border Image, Multibackground, CSS3 – color, gradients, shadows, text, 2D and 3D Transform, Multicolumn, User Interface and Box sizing.

No of Lectures: 10

Web Reference:

www.W3Schools.com,

www.tutorialspoint.com

Textbook: Introduction to Internet and HTML Scripting by Bhaumik Shroff –

Books India PVT LTD References: Web Technology and design – C Xavier

Question Paper Scheme:

University Examination	Duration: 3 Hours.	Total marks: 70
Q.1-Unit-I & II	Objective / Short Questions	(11 Marks)
Q.2-Unit-I	Descriptive / Long questions	(12 Marks)
Q.3-Unit-II	Descriptive / Long questions	(12 Marks)
Q.4-Unit-III & IV	Objective / Short Questions	(11 Marks)
Q.5-Unit-III	Descriptive / Long questions	(12 Marks)
Q.6-Unit-IV	Descriptive / Long questions	(12 Marks)

Note: Q.2,3,5 and Q.6 must have at least 40% Internal Options (i.e. Attempt Any 3 out of 5)

X-----X

Kadi Sarva Vishwavidhyalaya, Gandhinagar
BCA Semester I
BCA105 – Part 2: Core 3
Digital Electronics

Rationale:

The objective of this course is to familiarize students with concepts of fundamentals of Information Technology and detailed working of computer and its application.

Prerequisite:

DIGITAL ELECTRONICS is to enable students to have an understanding of computer organization and architecture of digital computer. The student will be able to assemble the computer and have a better understanding of the internal working of the circuits. The knowledge component to compute a program and to understand the basic working of a digital computer by accepting binary digits as inputs, process these signals and give the required output as acquired.

Learning Outcomes: The student will be able to understand:

- Basic attributes of computer and the hardware configuration.
- Numbering systems and their conversion into different systems like binary, Hex-decimal, Octal.
- Techniques of designing logical circuits using logical GATES.

Resource Utilization:

Lecture based on Activity Oriented Classroom Teaching by availing Projector, simulator, physical bread board, jumpers, switches, etc.

Teaching and Evaluation Scheme:

Sub. Code	Sub. Type	Subject Title	Teaching Scheme		Exam Scheme				
			Cr.	Hrs. / Week	Theory		Practical		Total Marks
					Internal	External	Internal	External	
BCA 105	Core	Digital Electronics	4	4	30	70	-	-	100

UNIT-1 – Components of a Computer (25%)

Objective: To have a thorough understanding of the basic structure and operation of a digital computer. The detail operation of the arithmetic unit, control unit, memory unit including the algorithms & implementation of fixed-point and floating-point addition, subtraction, multiplication

and division is explained.

Content

Generation of Computer (1st, 2nd, 3rd, 4th & 5th), Classification of Computer System (Super – Mainframe – Personal Computer) , Computer block diagram , input device (Key Board, Mouse, Joystick, Track Ball, Light Pen, Scanner , OMR –Bar Code Reader, MICR-OCR, Processing Device (CPU, ALU, CONTROL UNIT) , Output device (Printer , Monitor , Plotter) , storage unit (RAM, ROM, PROMS, EPROM, secondary storage device (Floppy Disk, Optical Disk, Magnetic Disk, Magnetic Tape , Hard Disk).

Topic: - 2-1, 2-3, 2-4, 2-2, 2-5 TEX BOOK – 2

No. of Lectures: 10

UNIT-2 – Number systems and Codes (25%)

Objective: Digital Computer has two signals that is either ON or OFF, ON signifies the passage of current, symbolised by “1” and OFF signifies the absence of current, symbolised by “0”. All computer data is composed of 1s and 0s, which is the binary data, called as “BIT”. Four bits is a “Nibble”. Eight bits is a “Byte”. From there we have kilobytes, megabytes, etc. Since everything is a series of 1s and 0s, the CPU has to perform every calculation in binary. But before any operations are done, numbers have to first be converted into base 2. So conversions will give an idea to students the actual working of computations

Content

Decimal odometer, Binary odometer, Number code, binary to decimal conversion, decimal to binary conversion, hexadecimal numbers, hexadecimal to binary conversion, hexadecimal to decimal conversion, decimal to hexadecimal conversion, BCD numbers.

Topic :- 1-1,1-2,1-3,1-5,1-7,1-8,1-9,1-10,1-11,1-12.TEX BOOK – 1.

No. of Lectures: 10

UNIT-3 – LOGIC GATES and ARITHMETIC LOGIC UNIT (25%)

Objective: Digital systems are said to be constructed by using logic gates. The logic gates are the building blocks for all computers, smart phones and the whole internet.

Content

Basic Gates like OR gate, AND gate, Boolean algebra, NOR gate, De Morgan’s first theorem, NAND gate, De Morgan’s second theorem, EXCLUSIVE-OR gate, EXCLUSIVE-NOR gate, Multiplexers, inverter.

Topic: - 2-1. 2-2, 2-3, 2-4, 3-1, 3.2, 3-3, 3-4, 3-5, 3-7, 4-7, TEX BOOK – 1. **No. of Lectures: 12**

UNIT-4 – BOOLEAN ALGEBRA (25%)

Objective: It formalizes the rules of logic. Boolean algebra is used to

simplify Boolean expressions which represent combinational logic circuits.

Content

Instruction Set Design (Accumulator, Stack Based, Register Based), Instruction Cycle/CPU Operation, Binary addition binary subtraction, half adders, full adders, binary adders, 2's complement adder subtracted. Flip-Flops (RS Latch , D , JK Master-Slave)

Topic: - 3.3.1,3.3.2,3.3.3,1.6.1,1.6.2-**Text Book-3, 5-1, 5-2, 5-3, 5-4, 5-5, 5-6, 5-7 , 6-1, 6-2, 6-3, 6-4, 6-5, 6-8 ,7-1 , 7-3 ,7-6 TEX BOOK – 1.** **No. of Lectures: 10**

Continuous Evaluation:

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Teaching and Evaluation Scheme: The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis of internal examinations which consist of Term Work such as class test, quizzes, class participation, home assignments, presentation, Bread Board, Android Apps. , Regular Attendance (i.e. Minimum 85%).

Text Books:

1. DIGITAL COMPUTER ELECTRONICS BY- MALVINO AND BROWN.(TATA McGRAW-HILL EDITION) = UNIT-1,2,3
2. "O" LEVEL, MADE SIMPLE IT TOOLS AND APPLICATION BY SATIESH JAIN(BPB PUBLICATION).
3. COMPUTER ARCHITECTURE AND ORGANIZATION BY B GOVINDARAJALU

Reference Books

1. DIGITAL PRINCIPAL AND APPLICATION BY ALBERT PAUL MALVINO AND DONALD P. LEACH(TATA McGRAW-HILL EDITION)
2. FUNDAMENTAL OF DIGITAL CIRCUITS BY A.ANAND KUMAR(PRENTICE-HALL OF INDIA)

Online MCQs Learning Resource

1. <http://www.indiabix.com/digital-electronics/boolean-algebra-and-logic-simplification/>
2. <http://www.indiabix.com/digital-electronics/integrated-circuit-technologies/>

Question Paper Scheme:

University Examination Duration: 3 Hours. Total marks: 70

Q.1-Unit-I & II (11 Marks)

Objective / Short Questions

Q.2-Unit-I (12 Marks)

Descriptive / Long questions

Q.3-Unit-II (12 Marks)

Descriptive / Long questions

Q.4-Unit-III & IV (11 Marks)

Objective / Short Questions

Q.5-Unit-III (12 Marks)

Descriptive / Long questions

Q.6-Unit-IV (12 Marks)

Descriptive / Long questions

Note: Q.2,3,5 and Q.6 must have at least 40% Internal Options (i.e. Attempt Any 3 out of 5)

X-----X

Kadi Sarva Vishwavidhyalaya, Gandhinagar
BCA Semester I
BCA106 – Part 2: Core 1 (Practical)
Office Automation and ‘C’

University Examination Duration: 3 Hours (Per Batch)

Teaching and Evaluation Scheme:

Sub. Code	Sub. Type	Subject Title	Teaching Scheme		Exam Scheme				
			Cr.	Hrs. / Week	Theory		Practical		Total Marks
					Internal	External	Internal	External	
BCA 106	Core	Office Automation and ‘C’	2	4	-	-	15	35	50

(Practical List)

Office Automation:

Open Office writer

Creating a new document, Opening an existing file and saving it in a new location, Editing your work, Understanding the clipboard, Working with fonts, Working with size, emphasis, and colour, Formatting paragraphs, Understanding styles, Checking your spelling, Automated correction tools, Customising your OpenOffice.org Writer work space, Understanding the macro and mail merge, Understanding the menus

Open Office Spreadsheet

Introduction to Spreadsheets, Open, Save and Close Spreadsheet, Enter Data in Spreadsheet,
 Basic Calculations – Addition, Subtraction, Multiplication, Division, Insert Column and Row, Format Cell and its Contents, Stock Register, Customizing the Interface, Use Currency Symbols, Format Cell Contents – Font Style and size, Delete – Columns and Rows, Spell check, Border and Colour the cells, Managing Worksheets in a Workbook, Print a Worksheet, OpenOffice Impress, Creating An Impress Presentation, Creating A Presentation, Enhancing the Presentation, Animating Objects and Adding Sound Effects

‘C’:

Write an Algorithm, flowchart and a program in C language for the following:

1. Understand the concept of input output function:
 - To enter name and age and print it.
2. Understand the concept of arithmetic operations:
 - To get addition of two nos.
 - To perform Arithmetic Calculation (Addition, Subtraction, Multiplication & Division)
 - To find area of circle.
 - To calculate simple interest.
 - To compute and display value of x . $x = a/b - c$. Given the values of three variables

a, b, c, a=250, b=85, c=25

- To convert the currency i.e. RS to Dolor and Dolor to RS.
 - To convert the measurement i.e. feet to inch. And inch to feet.
 - To find cube of given no.
3. Understand the concept of assignment operator:
- To interchange (swapping) two values with using third variable
 - To interchange (swapping) two values without using third variable
4. Understand the concept of control statement:
- To find given no. is odd or even.
 - To find given no is positive, negative or zero.
 - To find maximum no from 2 nos.
 - To find minimum no from 2 nos.
 - To find maximum no from 3 nos.
 - To find minimum no from 3 nos.
 - To enter salary of an employee. if salary is greater than 10000 then add 2000 extra in salary otherwise 1000 and print it
 - To enter age of any person. If age is greater than 18 then print message he/she is eligible for vote otherwise he/she is not eligible for vote.
 - To enter subject marks, make total, find percentage and print class grade according to following criteria.
If per \geq 70 then print "Distinction"
If per \geq 60 then print "First"
If per \geq 50 then print "Second"
If per \geq 40 then print "Pass"
Otherwise print "fail"
5. Understand the concept of branching statements:
- Write a C program to Check entered char is capital, small, digit or any special Character.
 - Write a C program to read number 1 to 7 and print relatively day Sunday to Saturday (Using switch Statement).
6. Understand the concept of looping statements:
- Write a algorithm ,flowchart and program to find out the max. And min. number from given 10 numbers.
 - Write a algorithm ,flowchart and program to find the sum of digit of accepted number.
 - Write a algorithm ,flowchart and program to find the sum of first 10 odd numbers and even numbers.
 - Write a C program to find factorial of accepted numbers.
 - Write a C program to find whether the accepted string is palindrome or not.
 - Write a C program to find out even and odd numbers from 1 to 50 numbers.
 - Write a C program to check the accepted number is prime or not.
 - Write a C program to check the accepted number is Armstrong or not.
 - Write a C program to print first 10 Fibonacci nos.
 - Write a C program which will generate following series: 10, 9, 8, 7, ..., 1. or N, n-1, n-2, ..., 1
 - Write a C program, which will generate following series: 1, 4, 9 ... N².
 - Write a C program, which will find out sum of following series: $1 + \frac{1}{2^2} + \frac{1}{3^2} + \dots + \frac{1}{N^2}$
 - Write a C program to print first 20 prime numbers.

- Write a C program to print reverse number of accepted no.
7. Obtain a preliminary idea of desired pattern using looping statements:
- Write a C program to display following output on the screen.

(a)	(b)	(c)	(d)
1	54321	C CO	COMPUTER
12	4321	COM	COMPUTE
123	321	COMP	COMPUT
1234	21	-----	COMPU
12345	1	COMPUTER	-----
			C

8. Understand and learn the concept of multiple data storage using array concept:
- Write a C program to find sum of value of array.
 - Write a C program to arrange the accepted numbers in ascending and descending order.
 - Write a C program to find maximum & minimum value from the given array.
 - Write a C program to display the two matrices and perform the addition of the two matrices.
9. To get a brief idea of string functions:
- Write a C program to convert given line into upper case or lower case.
 - Write a C program to count no of word, character, line and space from given text.
 - Write a C program to sort given string in ascending order.
 - Write a C Program to copy one string to another string.
 - Write a C Program to concatenation of two strings.
 - Write a C Program to compare two strings.
 - Write a C Program to find length of string.

Evaluation Scheme:

Practical	Viva	Journal	Total
21	7	7	35

X ----- X

Kadi Sarva Vishwavidhyalaya, Gandhinagar
BCA Semester I
BCA107 – Part 2: Core 2 (Practical)
Internet Technology

Rationale:

The aim of this course is to provide the conceptual and technological developments in the field of internet and web designing with the emphasis knowledge of internet. The internet Web with its wide spread usefulness has become an integral part of the internet. Therefore, this course also puts emphasis on basic knowledge of internet, concepts of web designing and tools to design web pages.

Learning Outcomes:

- Review the current topics in web and internet technologies.
- Describes the basic concepts for network implementation.
- Learn the basic working scheme of the internet and WWW
- Understand fundamental tools and technologies for web designing.
- Comprehend the technologies for HTML (Hyper Text Markup Language)
- Specify design rules in constructing web pages and sites.
- Effectively deal with designing issues and techniques with CSS.

Teaching and Evaluation Scheme:

Sub. Code	Sub. Type	Subject Title	Teaching Scheme		Exam Scheme				
			Cr.	Hrs. / Week	Theory		Practical		Total Marks
					Internal	External	Internal	External	
BCA 107	Core	Internet Technology & Web Designing	2	4	-	-	15	35	50

Course Content:

Unit: 1

Internet , Internet Technology and web applications : (25%)

- Understanding the concept of Internet and its different types of connection.
- Understanding of different browsers and websites.
- Creating email, file uploading and downloading
- Surfing different social networking sites.

Unit: 2

Basics of HTML (25%)

- Practical on HTML Structure
- Practical on different basic tags and formatting tags
- Practical based in link, list tag, images, audio-video tag and marquee tag
- Create the table using TD, TR, TH, Colspan and Rowspan
- Create inline frame, frame set, horizontal and vertical frameset.

- Create HTML forms

Unit: 3

Introduction Cascading Style Sheet (25%)

- working with Cascading Style Sheet : Syntex, measurement Units, colors, Background font and Text
- Working with CSS – images, links , tables and borders
- Set the margins with CSS, CSS – List, Padding and Scrollbar
- ID and Class Selector, Inline,internal and External Stylesheet

Unit : 4

Advance CSS and CSS3 (25%)

- Working with CSS – Visibility, Positioning, layers, Pseudo Classes, Text effects, Media Type, Aural Media, Layouts and printing
- CSS – Rounded corner , Border Image, Multibackground
- CSS3 – color, gradients, shadows, text, 2D and 3D Transform
- CSS3 - Multicolumns, User Interface and Box sizing

Textbook: Introduction to Internet and HTML Scripting by Bhaumik Shroff – Books India PVT LTD

References: Web Technology and design – C Xavier

www.W3Schools.com

www.tutorialspoint.com

Evaluation Scheme:

Practical	Viva	Journal	Total
21	7	7	35

x ----- x

Kadi Sarva Vishwavidhyalaya, Gandhinagar
BCA Semester I
BCA108 – Part 3: Foundation Course
Mathematics for Computer Science

Rationale:

To enhance logic by using basic concepts of mathematics such as Set-Theory, Matrix Operation

Prerequisites:

- No formal prerequisites but students are expected to be comfortable with mathematics.
- Fundamental knowledge of Mathematical operations
- Sound knowledge of BODMAS rule

Learning Outcomes:

- Develop analytical and problem solving skills.
- Compare the relevance between the introduced terminology and abstract ideas.
- Understanding the practical applications of mathematics in solving problems of commerce, management, engineering & economics.

Teaching and Evaluation Scheme:

Sub. Code	Sub. Type	Subject Title	Teaching Scheme		Exam Scheme				
			Cr.	Hrs. / Week	Theory		Practical		Total Marks
					Internal	External	Internal	External	
BCA 108	Foundation Course	Foundation in Mathematics	2	2	15	35	-	-	50

Course Content:

Unit 1 (50%)

Objective:

To provide detailed idea of collection of similar types objects. To empower beginners logic through Predefined Sets, Arithmetic Operations on Sets (Graphically and Theoretically), and mathematical algebra using theorems of number of elements in a set. To facilitate learners ability to think conceptually

Set Theory:

Introduction, Definition and Concepts, Representation of Sets, Different types of Sets (Null Set, Singleton set, Finite set, Infinite set, Power set, Subset, Universal set, Equal set), Set Operations using Venn diagram and examples : Union, Intersection, Difference, Symmetric Difference, Complement of Set, Laws of algebra of Set(Distributive, D' Morgan's) , Cartesian Product of Set, Cardinality of Set

Coverage of topics in Books:

Book 1: Chapter – 1 --- Page no. 1-36

Book 2: Chapter – 1 --- Page no. 1-28

Application:

One of the primary applications is database query design and processing. All queries onto RDBMS are in set notation and returned as sets. Data structures organize data in well-defined ways, (lists, trees, graph) is well defined sets. Higher languages uses and provides predefined sets liken (Tokens, Identifiers, Collections, Dataset, Hashset, List). Google search engine works based on sets of provided words.

Unit 2:

(50%)

Objective:

- To enhance idea of rectangular presentation of numbers;
- To study different arrangements in two dimensional array;
- To perform arithmetic operations using Matrices;
- To get solution of linear equations using Matrix

Matrices:

Introduction, Types of Matrices(Null matrix, Equal matrix, Row matrix, Column matrix, Square matrix, Transpose of matrix, Diagonal matrix, Scalar matrix, Unit matrix, Symmetric matrix, Skew Symmetric matrix, Orthogonal matrix), Operations on Matrices (Addition, Subtraction, Scalar, Multiplication), Computations of: Determinant, Adjoint and Inverse of a Matrix.

Solution of System of Linear Equations: Cramer's Rule, Gauss Elimination Method (2x2), Matrix Inverse Method.

Coverage of topics in Books:

Book 1: Chapter – 3 --- Page no. 84-124

Book 2: Chapter – 9 --- Page no. 292-306 and Chapter – 10 --- Page no. 324-385

Applications:

One of the primary applications is Computer Graphics; widely used in development of Computer Games; In Robotics and Kinematics matrices allow rotations, translations through planes to be easily calculated. Matrices are used in engineering, physics, computer science, and other applications of mathematics.

Text Book:

1. Advanced Mathematics:

Author(s): Heena Timani Publication:

Publication: Books India

2. Business Mathematics:

Author(s): Prof. H. R. Vyas, Dr. C. J. Trivedi, Prof. A. B. Savjani

Publication: B. S. Shah Prakashan

Reference Books:

1. Discrete Mathematical Structure [3rd Ed.]:
Author(s): Bernard kolman, Robert C. Busby, Sharon Roass
Publication: Prentice Hall Of India
2. The Essence Of Mathematics For Business :
Author(s): H.A.Spooner, D.A.L.Wilson
Publication: Prentice Hall Of India.
3. Business Mathematics:
Author(s): J.K Singh
Publication: Himalaya Publications
4. Financial Mathemetics: Auther(s): A.
Lenin Jothi Publication: Himalaya
Publications

Instructional Strategies:

- Bridge course to sharpen the existing knowledge.
- Classroom teaching with variants to make mathematics easy to learn.
- Integrate topics and concepts.
- Independent Practice to develop the art of self learning.
- Demonstration using technology tools.
- Provide examples to transfer learning.
- Problem solving of relevant real time data.

Question Paper Scheme:

University Examination	Duration: 1.5 Hours.	Total marks: 35
Q.1-Unit-I & II		(11 Marks)
Objective / Short Questions		
Q.2-Unit-I		(12 Marks)
Descriptive / Long questions		
Q.3-Unit-II		(12 Marks)
Descriptive / Long questions		

Note: Q.2 and Q.3 must have at least 40% Internal Options (i.e. Attempt Any 3 out of 5)

X-----X

