



**SHREE H. N. SHUKLA COLLEGE OF I.T. & MGT.
(AFFILIATED TO SAURASHTRA UNIVERSITY)**

**Diwanpara Main Road
Nr. Shaligram App.
Opp. Diwanpara Police Station
Rajkot – 360001
Ph. No–2224362,2235030**

**2 – Vaishalinagar
Nr. Amrapali Railway Fatak
Raiya Road
Rajkot - 360001
Ph.No–2440478, 2472590**

SYLLABUS BSC.IT – SEM-I

Sr. No.	Subject	No. of Theory Lect. Per Week	No. of Practical/Week
1	CS-1 Communication Skills	4 + 1	
2	CS-2 Problem Solving Methodologies & Programming in C	4 + 1	6
3	CS-3 Foundation of Information Technology	4 + 1	6
4	CS-4 Foundation of Mathematics & Statistics	4 + 1	
5	CS-5 Practical on CS-2		
6	CS-6 Practical on CS-3		

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SYLLABUS BSC.IT – SEM-I

CS – 1 Communication Skills				
No	Topics	Details	Marks	Min. Lct.
1	Grammar	Tenses	05	05
2	Communication Skills	Introduction Communication as a two way process Purpose or objectives of Communication Verbal and non verbal communication Barriers of communication Essential of communication	20	15
3	Practical letter Writing	Official letters Business letters Applications or Resume	15	10
4	Report Writing	Business Report Press report	20	10
5	Essay Writing	Current Topics	10	4
6	Testing Vocabulary	Confusing Words One word substitution Antonyms Synonyms	10	5
7	Translation	English into Gujarati or Hindi Gujarati or Hindi into English	10	6
8	Comprehension		10	5
			100	60

Reference Books:

1. Follow Me by Barry Tomalin, BBC English By Redio and TV, London
2. How to Listen by Marion Geddes
3. Ebook – Improve you writing skills
4. English Grammar & Compositiottn by Rajendra Pal & Premalata Suri



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CS – 2 Problem Solving Methodologies & Programming in C				
No.	Topics	Details	Marks	Min. Lct.
1	Pre Programming Techniques	Importance of preprogramming techniques Pre programming tools Algorithm Flow charts Dry Run (preparation of sample data set for testing of logic) Writing algorithms and development of flowcharts with dry run for the given list of problems	20	12
2	Getting started with C	C program structure C Character sets Constants, Variables and Keywords in C Various Data Types Type Casting Various Operators Hierarchy of Operations	80	6
3	Various Controls Structures	Decision if, if-else, Nested if-else, if-elseif Conditional (Ternary) operator Switch Case Loops for, while, do while, Nesting of loops Use of break and continue statements, goto with label		14



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4	Header files & Library Functions	Importance of header files Introduction to some popular header files and its library functions: <stdio.h>: printf(),scanf(),fflush(),gets(),puts() <conio.h>: getch(),getche(),getchar(),clrscr(),gotoxy(),textcolor(),textbackground(),cprintf(), <math.h>: abs(),exp(),sqrt(),log(),ceil(),floor(),pow(),fmod(),fabs() <string.h>: strlen(),strcpy(),strcmp(),strcat(),strlwr(),strupr(),strrev() <ctype.h>: isalpha(),isdigit(),isalnum(),isspace(),isupper(),islower(),isprint(),toupper(),tolower()		8
5	User defined functions	Different type of UDF (call by value only) Functions with no arguments, no return value Functions with no arguments, with return value Functions with arguments, no return value Functions with arguments, with return value Creation of your library Storage classes & scope of variables		5
6	Arrays	Concept of Single & Two dimensional arrays Initializations & working with array Passing array elements to function Sorting of numeric & string array String operations		8
7	Structures	How to define a structure Accessing structure elements Memory allocation Array of structure Array within structure Union		5
8	Misc.	Typedef Symbolic Constants C Preprocessor #define #include		2
			100	60



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Reference Books:

1. Programming in ANSI C E.Balaguruswami
2. Let Us C Yashwant Kanetkar
3. Working with C Yashwant Kanetkar
4. Programming in C Schaum Series Publication

CS – 3 Foundation of Information Technology				
No.	Topics	Details	Marks	Min. Lct.
1	Concepts in information & Processing	An overview of information technology applications, Difference between Data & Information, Information system, Value of Information, Quality of Information Software Concepts: Types of Software, Programming Languages, Software (Its Nature & Qualities), Programming Languages.	10	6
2	Introduction to computers	Definition of computer Block Diagram of computer Characteristics of computer Generation of computer Digital computer, mini, micro, mainframe, super Hybrid computer	10	6
3	Computer Peripherals	Input Devices: Keyboard, Mouse, Joystick, Track ball, Touch Screen, OCR, OMR, MICR & OBR, Light pen, Scanner, Output Devices (All): Visual Display Unit (VDU), LCD, Plasma, Printers: Impact, Non Impact, Plotter, CRT Storage Devices & Type of Memory: RAM,ROM, PROM,EPRM,EEPROM, cache memory, magnetic tape,Magnetic disk, CDs, DVD, ZIP Drive, Per Drive Port Introduction: USB, Serial, Parallel and PS2	20	15
4	Overview Computer Language & OS	What is machine level language, What is assembly level language, What is high level language. (Note: there is no any comparison in between these language) (Just) Definition of Assembler, compiler & interpreter	10	7



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		Operating Systems: History & Evolution, A Brief History of Linux, A Brief History of MS-DOS, A Brief History of Windows System.		
5	Number systems Binary, Arithmetic & Code	Conversions: Decimal to Binary, Octal, Hexadecimal, Binary to Decimal, Octal, Hexadecimal, Octal to Decimal, Binary, Hexadecimal, Hexadecimal to Decimal, Binary, Octal, Complement: 1's comp., 2's comp. Addition of two binary numbers, Subtraction of two binary numbers using 1's & 2's comp. What are ASCII, BCD & EBCDIC Where & Why these codes are used?	20	12
6	Internet technology & World wide web	Introduction to Web, Internet requirement, Internet – A global Network, Host & Terminals, TCP/IP, Common protocols used in Internet, World wide web, Web browsers, Internet addresses, Domain names, Basic concepts of HTML, Web Search engines Electronic Mail	30	14
			100	60

Reference Books:

Computer Fundamentals	P.K. Sinha
Fundamentals Of Computers, 3rd Edition	V. Rajaraman
Fundamentals of IT for BCA	S. Jaiswal
Foundation of Information Technology	D.S. Yadav
Fundamentals of Information Technology	Deepak Bharihoke



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CS 4 – Foundation of Mathematics and Statistics				
No.	Topics	Details	Marks	Min. Lct.
1	Matrices	Matrix, Square Matrix, Column Matrix, Row Matrix, Diagonal Matrix, Unit Matrix, Upper triangular and lower triangular matrix, symmetric matrix, skew-symmetric matrix, trace of matrix, transpose of matrix, addition, subtraction and multiplication of two matrices ad joint of a square matrix, inverse of matrix and determinants	8	5
2	Linear system of equation	Solution of linear equations using direct methods (gauss-elimination, Gauss-jordan with proof)	7	5
3	Inter-polation	Definition, Finite-difference forward-difference table, backward-difference table, Newton forward-differnece formula (with proof), Newton-backward difference formula with proof, language's interpolation(example only)	10	7
4	Solution of algebraic and transcendent al equation	Definition, Bi-section method, False-position method, Newton-raphson method. (with proof)	10	5
5	Integration	Definition, Trapezoidal rule (with proof), Simpson's 1/3 rule (with proof)	5	03
6	Numerical Solution of ordinary differential equations	Eular's method, Modified eular's method, RK 2 nd and RK 4 th order method (only Example)	10	5
Part – II Statistics				
7	Chart and Curve	Simple bar diagram, pie diagram, graphs of frequency distribution, Histogram for Equal class interval, Frequency, polygon, frequency curve, cumulative frequency curve, Ogive curve less than and more than	5	4
8	Linear programming problem	Linear programming problem, meaning, Constrains, mathematical model of LPP, uses of LPP,	10	6



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		graphic method, Simplex method (two variable)		
9	Transportation problem	Transportation: meaning, method of finding, initial solution, (north west corner method, least cost method, Vogel's approximation method)	10	5
10	Correlation and regression	Correlation: definition, Scattered diagram method, Karl Pearson's coefficient of correlation, properties of correlation, correlation coefficient for bi variate frequency distribution, rank correlation, examples based on all above methods. Regression: Definition, lines of regression, regression coefficient and its properties, angle between two lines of regression, example based on regression.	15	10
11	Curve fitting	Linear curve ($Y = a + bx$) Second degree parabola ($Y = a + bx + cx^2$) Exponential Curve $Y = ae^{bx}$	10	5
			100	60

Reference Books:

Numerical Analysis
Statistical Methods
Operation Research
Numerical Analysis
Mathematical Statistics

VN Vedmurthy
S P Gupta
J K Sharma
Salariya
SP Gupta & VK Kapoor



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CS – 5 Practical & Viva Based on CS – 2

No.	Topics	Marks
1	CS – 2 (C – Programs)	50
		50

Each session is of 3 hours for the purpose of practical examination

CS – 6 Practical & Viva Based on CS – 3

No.	Topics	Marks
1	CS – 3 (Computer Fundamentals, MS Office, Internet Technology)	50
		50

Each session is of 3 hours for the purpose of practical examination

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