

BHAKTA KAVI NARSINH MEHTA UNIVERSITY - JUNAGADH

(Gujarat) INDIA



CURRICULAM FOR
Bachelor of Science in Information Technology
B.Sc. (I.T.)
(Semester – 1)
Effective From June – 2018

BHAKTA KAVI NARSINH MEHTA UNIVERSITY
Bachelor of Science (Information Technology)
[3 Years - Six Semester Full Time Program]

Semester – 1

Code	Course Name	No. Of Lectures/ Lab (Per Week)	Credit
CS - 01	Programming In C	5	5
CS - 02	Networking, Internet & Web Page Development	5	5
CS - 03	Comp. Fundamentals & Emerging Tech.	5	5
CS - 04	English Language & Communication Skills	5	5
CS - 05	Practical – 1 (Based On Cs - 01)	5	5
CS - 06	Practical – 2 (Based On Cs - 02 & Pc Software/ Libre Office)	5	5
Total Credits of Semester - 1			30

CS - 01: PROGRAMMING IN C

Objective: To develop basic programming skill, concept of memory management and file concept.

Unit : 1

Introduction of C Language

- Introduction to Programming
- Various Computer Languages
- History & Overview of C Language
- Difference between traditional C and modern C
- C character set
- C tokens
 - Keywords
 - Constants
 - Strings
 - Identifiers and variables
 - Operators
- Operators & Hierarchy of operators
- Data types in c
- Type casting & Type Conversion
- Pre – Processors in C

Introduction of Logic Development Tools

- Introduction of Logic & Basic of Algorithm.
- Basics of Flow Chart
- Dry-run and its Use.
- Other Logic development techniques (Algorithm and Flowchart Based on Programming)

Unit : 2

Branching & Looping

- Decision structure
 - If statements(All Types)
 - Switch statement
 - Conditional ternary operator
- Looping Structures
 - For loop
 - Do...while loop
 - While loop
 - Nesting of loops
- Jumping statements
 - Break statement
 - Continue statement
 - Go to statements

Unit : 3

Library Functions

- Introduction of Library Function
- Brief overview of Header Files (stdio.h, conio.h, math.h, string.h, stdlib.h, ctype.h, graphic.h, process.h, dos.h)
- Types of library functions

String Function: strcpy, strncpy, strcat, strncat, strchr, strcmp, strncmp, strlen, strstr

Mathematical Functions: ceil, div, exp, fabs, floor, fmod, log, pow, sqrt

Date & Time Functions: clock, time, gmtime, localtime

Graphics Functions: initgraph, closegraph, arc, line, circle, ellipse, getx, putx, setcolor, setbkcolor

I/O Formatting Functions: printf, scanf, getc, getchar, gets, putc, putchar, puts

Miscellaneous Functions: delay, clrscr, isalnum, isalpha, isdigit, islower, isprint, isspace, isupper, toupper, tolower

Standard Library functions: abs, atof, atol, exit, free, rand

Memory Allocation Functions: malloc, realloc, calloc

User Define Functions (udf)

- Concept of User Define Function
- Types of user defined functions
- call by value & call by reference
- Nesting & Recursion
- Storage classes

Unit : 4

Array

- Concept of Array
- Types of arrays
 - Single dimensional array
 - Two dimensional array
 - Multi-dimensional array
- String arrays
- Array with functions using UDF
- Use of Arrays in Programming

Structures

- Concept of Structure
- Initializations and declarations
- Array with structures
 - Array of Structure
 - Array Within Structure
- Udf with structures

- Nested structures
- Introduction to union
- Difference between Structure & Union

Unit : 5

Pointers

- Concept of Pointers
- Pointer to Variables
- Pointer to Array
- Pointer within Array
- Pointer To Structure
- Pointers within structure
- Pointer to Pointer
- Use of pointers in Dynamic Programming

File Handling

- Concept of data files
- Importance of file handling
- I/O Operation
- Command line arguments

	Class Room	Seminar	Expert Talk	Test	Total
No. Of Lecture	60	05	05	05	75

Reference Books:

No.	Name	Author / Publication
1	Programming in ANSI C	E. Balagurusami
2	Let Us C	Yashwant Kanetkar.
3	Working with C	Yashwant Kanetkar.
4	Programming in C	Schaum Series publication.

Web site References :

- <https://www.tutorialspoint.com/cprogramming/index.htm>
- <http://www.eskimo.com/~scs/cclass/notes/top.html>
- <http://c-faq.com/>
- <http://www.learn-c.org/>
- https://www.tutorialspoint.com/cprogramming/cprogramming_tutorial.pdf
- <https://www.w3schools.in/c-tutorial/>
- <https://www.javatpoint.com/c-programming-language-tutorial>

CS – 02 : Networking, Internet & Web Page Development

Objective: To understand basic terms of computer networks and Internet, to give knowledge of Scripting languages like HTML, CSS and Java Script

Unit : 1

Introduction to Computer Network

- Basics of Computers
- Computer Network
- Type of Computer Network
- Network Topology
- OSI Reference Model (Introduction)
- TCP/IP
- Internet Terminology
- ISP (Internet Service Provider)
- Intranet
- VSAT (very small aperture terminal)URL

Unit : 2

Application of Internet

- World Wide Web (WWW)
- Types of Search Engine
- Remote Login
- Electronic Mail (Email)
- Concept and use of : E-Commerce, E-Business, E-Governance, Mobile Commerce
- Website Basics (WebPages; Hyper Text Transfer, Domain name server, Protocol, File Transfer Protocol, Domain Names; URL , Protocol Address; Website[Static, Dynamic, Responsive], Web browser, Web Servers; Web Hosting, web portal, domain name server
- Network Security Concepts: Cyber Law, Firewall, Cookies, Hackers and Crackers
- Types of Payment System (Digital Cash, Electronic Cheque, Smart Card, Debit/Credit Card)

Unit : 3

Basic of HTML & Advance HTML 5

- Fundamental of HTML
- Basic Tag and Attribute
- The Formatting Tags
- The List Tags & Link Tag
- inserting special characters,
- adding images and Sound,
- Table & Frame in HTML
- Forms
- HTML 5 Document Structure & Syntax (section, article, aside, header, footer, nav, dialog)
 - Attributes of HTML 5

- Web Form (datetime, date, month, week, time, number, range, email, url)
- Audio / Video

Unit : 4

Cascading Style Sheet & CSS 3

- Introduction to CSS
- Types of Style Sheets
- Class, ID Selector
- CSS Text & Font Properties
- CSS Background Properties
- CSS List Properties
- CSS Margin & Padding Properties
- CSS Comments
- CSS 3
 - Border Property
 - Background & Gradient Property
 - Drop Shadow Property
 - 2D & 3D Transform Property
 - Transition Property

Unit : 5

Java Script

- Introduction to JavaScript
- Variables
- JavaScript Operators
- Conditional Statements
- JavaScript Loops
- JavaScript Break and Continue Statements
- Dialog Boxes
- JavaScript User Define Function & Built-in Function (string, Maths, Array, Date)
- Events (onclick, ondblclick, onmouseover, onmouseout, onkeypress, onkeyup, onfocus, onblur, onload, onchange, onsubmit, onreset)
- Form Validation & E-mail Validation

	Class Room	Seminar	Expert Talk	Test	Total
No. Of Lecture	60	05	05	05	75

Reference Books:

No.	Name	Author / Publication
1	HTML in 10 steps or less	Laurie Ann Ulrich, Robert G. Fuller
2	Internet The Complete Reference	Young.
3	World Wide Web Design with Html	C Xavier.
4	Internet for Every One	Leon.
5	Practical Html 4.0	Lee Philips.
6	Mastering In FrontPage	BPB

Web site References :

- <https://www.javatpoint.com/html-tutorial>
- <https://www.tutorialspoint.com/html/index.htm>
- <https://www.w3schools.com/html/>
- <https://www.csstutorial.net/>

CS – 03 : COMP. FUNDAMENTALS & EMERGING TECH.

Objective: To aware basics of computer and emerging technology

Unit : 1

Introduction of Computers

- Basics of Computers
 - What is Computer?
 - Characteristics of Computer
 - Data Processing Cycle(Data → Process →information)
- Classification of Computer by Data Processed
 - Analog, Digital and Hybrid Computers
- History and Generations of Computers
 - First to Fifth Generation Computers
- Classification of Computer by Processing Capabilities
 - Micro, Mini, Mainframe and Super Computers
- History and Generations of Computers .
 - First to Fifth Generation Computers
- Simple Model of Computer
 - Input Devices
 - CPU (Central Processing Unit)
 - Arithmetic & Logic Unit
 - Control Unit
 - Internal Memory
- Output Devices
- Secondary Storage Devices

Internal/External parts used with Computer Cabinet

- Introduction to Mother board
- Types of Processors .
 - Dual Core, Core 2 Duo, i2, i3, etc ...
- Memory structure and Types of Memory
 - RAM (SRAM, DRAM, DDR.)
 - ROM (ROM, PROM, EPROM, EEPROM,Cache)
- Slots
 - ISA Slots / PCI Slots / Memory Slots/SATA
- Sockets
- Cables
 - Serial Cable / Parallel Cable / USB Cable/HDMI
- Ports
 - USB (2.0 &3.0)/ Serial / Parellel

- Power Devices :UPS
- Graphic Cards
- Network card, Sound Card

Unit : 2

Input Devices

- Introduction
- Types of Input Devices
 - Keyboard / Mouse / Trackball / Glide - Pad / Game Devices Joystick, etc.) / Light Pen / Touch Screen / Mic (Sound Input) / Camera (Photo and Video Input) / POS (Point of Sale) Terminal (Scanners, etc)
 - MIDI(Musical Instrument Digital Interface) Keyboard,
 - Wireless Devices (Keyboard, Mouse, etc)
- Types of Scanners
 - OMR, MICR, OBR

Output Devices

- Introduction
- Types of Output Devices
- Types of Monitors
 - CRT Display Units
 - LCD
 - LED
 - OLED
- Types of Printers
 - Impact (Dot Matrix Printer, Daisy Wheel Printer)
 - Non Impact(Ink Jet Printer, Laser Printer)
- Plotters
- Other Devices
 - Fascimile(FAX)
 - Headphone
 - SGD (Speech Generating Device)
 - COM (Computer Output Microfilm)
 - Google Glass

Unit : 3

Data Storage

- Introduction
- Types of Magnetic Storage Devices
 - Floppy Disk / Hard Disk / Magnetic Tape / Magnetic Disks
- Storage Mechanism of Magnetic Storage Devices
 - Tracks / Sectors / Clusters / Cylinders
- Reading / Writing Data to and from Storage Devices
- Seek Time / Rotational Delay - Latency / Access
- Time /Response Time
- Other Storage Devices
 - USB - Pen Drive/CD/DVD/Blu-Ray Disk. Flash Memory, Cloud Storage(Like Google

Drive, OneDrive)

Unit : 4

Numbering System and Codes

- Introduction to Binary Codes /
 - Nibble / Bit / Byte / Carry Bit / Parity Bit / Sign Bit
 - KB / MB / GB / TB / HB (etc ...)
- Types of Numbering System
 - Binary / Octal/Decimal / Hex-Decimal
- Conversion
 - Binary to Octal, Decimal and Hexa-Decimal
 - Decimal to Binary, Octal and Hexa-Decimal
 - Octal to Binary, Decimal and Hexa-Decimal
 - Hexa-Decimal to Binary, Octal and Decimal
- Binary Arithmetic
 - Addition
 - Subtraction (1's Compliment and 2's Compliment)
 - Division .
 - Multiplication
- Types of Codes
 - ASCII/BCD / EBCDIC / UniCode
- Parity Check
 - Event Parity System / Odd Parity System

Languages, Operating Systems and Software Packages

- Introduction
- Translator (Assembler / Compiler / Interpreter)
- Types of Languages
 - Machine Level Language
 - Assembly Level Language
 - High Level Language (3GL, 4GL, 5GL, etc.)
- Types of Operating Systems
 - Batch Operating System
 - Multi Processing Operating System
 - Time Sharing Operating System
 - Online and Real Time Operating System
- Uses and applications of Software Packages
 - Word Processing Packages
 - Spread Sheet Packages
 - Graphical Packages
 - Database Packages I
 - Presentation Packages
 - Animation / Video / Sound Packages

Unit : 5

Emerging Technologies and Virus

- Different Communication methods
 - GIS / GPS / COMA / GSM/ VOLTE
- Communication Devices
 - Cell Phones / Modem / Infrared / Bluetooth / WiFi / LiFi
- Virus
 - Introduction to Virus and related terms
 - Origin and History
 - Types of Virus
 - Problems and Protection from Virus
- Cloud Computing
 - What is Cloud Computing?
 - Characteristic & Service Models(Iaas, Paas, Saas)
 - Architecture
 - Security & Privacy

	Class Room	Seminar	Expert Talk	Test	Total
No. Of Lecture	60	05	05	05	75

Reference Books:

No.	Name	Author / Publication
1	Computer Fundamentals	By P.K.Sinha
2	Fundamental of IT for BCA	By S.Jaiswal
3	Engineering Physics	By V.K.Gaur
4	Teach Yourself Assembler	By Goodwin.

Web site References :

- <https://www.javatpoint.com/computer-fundamentals-tutorial>
- https://www.tutorialspoint.com/computer_fundamentals/index.htm
- https://www.tutorialspoint.com/computer_fundamentals/computer_fundamentals_tutorial.pdf
- http://www.kvadilabad.org/admin/downloads/1788662251computer_fundamentals_tutorial.pdf

CS – 04 : TECHNICAL COMMUNICATION SKILL

English

Syllabus for B. Sc. (IT) Semester: 1

- SUBJECT: English
- Course Title: English Language and Communication Skills
- Course Code:
- Total Teaching Hours: 45
- Time for Semester End Exam: 2:30 Hours for 70 Marks
- Internal Assessment: Assignment/ presentation/MCQ test: 30 Marks
- Credit: 05
- Total Teaching Hours: 75 Hrs.

Learning Objectives:

- To enhance the knowledge of the subject particularly from non-urban areas.
- To make students proficient in English language and subject related terminology.
- To make them able to master in grammar.
- To make them develop the power of understanding the passage critically.

Detailed Syllabus:

Unit	Item	Marks	Hours
I	Text: <i>Text: The Room on the Roof by Ruskin Bond</i>	14	09
II	Basics of Communication: Meaning of communication, Importance of communication, Process of communication, and SevenCs of Communication. Formal and Informal communication, Barriers of Communication and How to Overcome them.	14	09
III	Written Communication: Objectives of written communication, Merits and demerits of written communication, Types of Written Communication. Oral Communication: Principles of effective oral communication, Advantages of oral communication, Disadvantages of oral communication, Types of Oral Communication.	14	09

	Interviews: Meaning & Purpose, Art of interviewing, Types of interview, Its Essential Features. Project Presentations: Advantages & Disadvantages, Executive Summary, Charts, Distribution of time (presentation, questions & answers, summing up), Visual presentation, Guidelines for using visual aids, Electronic media (power- point presentation).		
IV	Grammar: Verbs, adjectives, adverbs, pronouns, tenses, conjunctions, punctuations and prepositions.	14	09
V	Language Skills: How to improve Listening, Speaking, Reading, Writing Skills	14	09
Total Teaching Hours			45

Semester End Examination Pattern

Q.No.	Sub.Q.No.	Type of Question	Instruction	Marks
1	A	One Line Answer Questions/Objective Type Questions(Text)	5 out of 5	05
	B	Short-answer questions (Text)	3 out of 5	09
2	A	One Line Answer Questions/Objective Type Questions(From Unit-2)	5 out of 5	05
	B	Short-answer questions (From Unit-2)	3 out of 5	09
3	A	One Line Answer Questions/Objective Type Questions(From Unit-3)	5 out of 5	05
	B	Short-answer questions (From Unit-3)	3 out of 5	09
4	A	Based on Verbs, adjectives, adverbs, pronouns	7 out of 7	07
	B	Do as directed: Based on tenses, conjunctions, punctuations and prepositions.	7 out of 7	07
5	A	Short answer Questions / Objective Type Questions based on Listening, and Speaking Skills	7 out of 7	07

	B	Short answer Questions/ Objective Type Questions based on Reading and Writing Skills	7 out of 7	07
			Total	70

Reference:

1. Technical Communication: Principles and Practice by Meenakshi Raman & Sangeeta Sharma. OUP
2. Principles and Practice of Business Communication by Rhoda Doctor. Sheath publishers
3. A Communicative Grammar of English by Geoffrey Leech & Jan Svartvik. Routledge Publication
4. Spoken English: A Foundation Course by Kamlesh Sadanand and Susheela Punitha (Part I and Part II)

CS – 05	PRACTICAL – 1 (Based on CS - 01) Programming in C Language	100 Marks
CS – 06	PRACTICAL – 2 (Based on CS – 02 & PC Software) HTML-5, CSS-3, MS - Word, MS - Excel, MS - Power Point, MS-Access and Macromedia Dream weaver	100 Marks
Note : ▪ Each session is of 3 hours for the purpose of practical Examination. ▪ Practical examination may be arranged before or after theory exam		