# VEER NARMAD SOUTH GUJARAT UNIVERSITY – SURAT

## F Y B. Sc. (Computer Science)

## Syllabus For F. Y. B. Sc. Semester 1

**Effective From: June-2014**

**Core Paper No.: 101**
**Core Paper Title: Fundamentals of Computer – I**

**1. Computer Fundamentals**

1.1. History, Characteristics and Generation of Computers.
1.2. Classification of Hardware and Software.
1.3. Basic Knowledge about CPU, Control Unit, ALU
1.4. Memory: Primary memory, Secondary memory.
1.5. Storage devices: HDD, CD-ROM, DVD.
1.6. I/O Devices: Keyboard, Mouse, Scanner, Plotter, OCR, OMR, CD-Drive, Joy stick.
1.7. Display Devices: VDU, LCD, Touch screen, TFT.
1.8. Types of Printer: Impact and Non-Impact.

2. Basic PC troubleshooting techniques
2.1 Observation of all parts – CPU,HDD, CD-ROM, SMPS. Identification of cables .
2.2 Mounting Motherboard in cabinet Installation of cards, devices and then connecting cables. Fitting of cabinet. CMOS - Setup
2.3Types of errors in computer, Common configuration errors
2.4 Hardware Troubleshooting Tools

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**3. HTML and its working**

3.1. Introduction to URL (Fragment Identifier, Relative URL).
3.2. History of HTML, SGML.
3.3. Structuring Web-page, Paragraph and Line Break Tags.
3.4. Adding Comments, Formatting Text, Creating Lists (OL, UL).
3.5. Creating Definition Lists, Creating Hypertext Links.
3.6. Creating Link Lists, Inserting Images and Objects.
3.7. Creating Image Links, Horizontal Rules, Address Tags.
3.8. Font Sizes and Colours, Background Image, Marquee Tag.
3.9. Tables, Frames and Creating Forms.
3.10. Concepts of Uploading the Web-site

**Reference Books:**

**1.** Fundamentals of Computers 5th Edition - V Rajaraman, PHI
**2.** Introduction to Computers : 4th Edition – Peter Norton
**3.** Inside IBM PC - Peter Norton, PHI
**4.** Computer System Architecture - Morris Mano
**5.** HTML in 21 days - SAMS publication
**6.** How to Create Web Pages Using HTML - K Laudon, TMH
**7.** Web Enabled Commercial Application Development Using HTML, DHTML - Ivan Bayross, BPB
8. Hardware bible By : Winn L Rosch, Techmedia publications
9. Trouble shooting, maintaining and repairing PCs By : Stephon J Bigelow Tata McGraw Hill Publication

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## F Y B. Sc. (Computer Science)

## Syllabus For F. Y. B. Sc. Semester 1

### Effective From: June-2014

**Core Paper No.: 102**
**Core Paper Title: Programming in C – I**

**1. Algorithm & Flowcharting**

**2. Programming Languages & Structured Programming**
2.1. Structured Programming
2.2. Levels of Programming languages
2.3. Concepts of Compiler / Interpreter, Editor
2.4. Problem Analysis
2.5. Program bugs and testing

**3. Fundamentals of "C"**
3.1. The Basics of "C": Identifiers, key words, data types, declaration, reserved words
3.2. Operators and Expression
3.3. Arithmetic Operators
3.4. Unary Operators
3.5. Relational Operators
3.6. Assignment Operators
3.7. Conditional Operators
3.8. Bitwise Operators

**4. Control Statements**
4.1. various forms of *if* Statement
4.2. *while* Loop
4.3. *do-while* Loop
4.4. *for* Loop
4.5. *switch* Statement
4.6. *break* and *continue* Statements

**5. Functions**
5.1. Library Functions
5.1.1. Arithmetic Functions
5.1.2. String Functions
5.1.3. Conversion Functions
5.2. User Defined Functions (UDFs)
5.2.1. Defining and Accessing a Function
5.2.2. Passing Arguments to a Function
5.2.3. Specifying Argument Data Type
5.2.4. Function Prototype
5.2.5. Recursion

**6. Array**
6.1. Array Definition
6.2. Processing an Array
6.3. Passing Array to Function
6.4. Multidimensional Array

**7. Storage Classes**
7.1. *auto* Storage Class
7.2. *register* Storage Class
7.3. *static* Storage Class
7.4. *extern* Storage Class

## Reference Books:


**1.** "C Language Programming", By Gottfried, Tata McGraw Hill
**2.** Let Us C - Yashwant Kenetkar
**3.** C Programming Language – Kernighan & Ritchie - TMH
**4.** 'C' Odyssey (6 volumes) – Vijay Mukhi – PHI
**5.** C: How to Program, 6th Edition, Deitel & Deitel, PHI
**6.** Magnifying C, Arpita Gopal – PHI
**7.** Problem Solving with C, Somashekara - PHI
**8.** Programming in 'C' --- Stephan Kochan - CBS
**9.** Mastering Turbo C --- Kelly & Bootle - BPB
**10.** Mastering Turbo C --- Stan Kelly – BPB

# VEER NARMAD SOUTH GUJARAT UNIVERSITY – SURAT

## F Y B. Sc. (Computer Science)

## Syllabus For F. Y. B. Sc. Semester 2

## Effective From: June-2014

**Core Paper No.: 201**
**Core Paper Title: Fundamentals of Computer – II**

**1. Number System**
1.1. Decimal, Binary, Octal and Hexadecimal
1.2. Conversion of numbers to other systems
1.3. Arithmetic operation of Binary Number System (Addition and Subtraction)

**2. Operating system**
2.1. What is operating system? Types of O. S. (Single User, Multi-User/ CUI – GUI)
2.2. Loading process of OS
2.3. BIOS, POST Operation, Vector table, Device Drivers, TSR programs
2.4. Systems Files, Configuration Files
2.5. Disk Architecture (FAT, FAT32, NTFS)
2.6. DOS Internal Commands and Equivalent UNIX Commands

**3. Database and its concepts**
3.1. Concept of Field, Record, Table and Database
3.2. Comparison between Manual and File System
3.3. Need and Organization of Database (Physical, Conceptual, Logical)
3.4. Keys – Super key, Candidate key, Primary key, Foreign key

**4. Working with MS-ACCESS – Basics and concepts**
4.1. Working with database & tables
4.2. Using SQL Queries (Simple, Join, Sub query)
4.3. DML commands (Insert, Update, Delete)
4.4. Managing Constraints & Relationships
4.5. Create Forms and Reports
4.6. Views

**Reference Books:**


**1.** Fundamentals of Computers 5th Edition - V Rajaraman, PHI
**2.** Inside IBM PC - Peter Norton, PHI
**3.** Advanced MS DOS - Rayduncon, McGraw Hill
**4.** Computer System Architecture - Morris Mano
**5.** Ms Access in 21 days - SAMS Publication
**6.** Database Management and Design, 2nd Edition, Hansen & Hansen – PHI
**7.** Database Management Systems, Narang - PHI
**8.** Data Base Concepts - Henry Korth

# VEER NARMAD SOUTH GUJARAT UNIVERSITY – SURAT

## F Y B. Sc. (Computer Science)

## Syllabus For F. Y. B. Sc. Semester 2

### Effective From: June-2014

**Core Paper No.: 202**
**Core Paper Title: Programming in C - II**

**1. Structure and Union**
1.1. Defining Structure
1.2. Processing a Structure
1.3. User Defined Data Type (typedef)
1.4. Structure and Pointer
1.5. Passing Structure to a function
1.6 Unions

**2. Sorting & Searching in Single Dimensional Array**
2.1. Bubble Sort
2.2. Insertion Sort
2.3. Selection Sort
2.4. Sequential Search
2.5. Binary Search

**3. Pointers**
3.1. Pointer Fundamentals
3.2. Pointer Declaration
3.3 Passing Pointers to a Function
3.4. Pointers and One Dimensional Array
3.5. Pointers and Multidimensional Array
3.6. Array of Pointer
**3.7 Pointer to Structure**

**4. Files Handling**
4.1 Opening a file & Closing a file
4.2. Reading from a file & Writing to a file
4.3 Reading & Writing Structures
4.4. Random Accessing a file

**5. Miscellaneous**
**5.1. Command Line Arguments**
**5.2. Preprocessor**
5.2.1. # And ## operator
5.2.2. Preprocessor Statements
5.2.3. Macro Definitions
5.2.4. File Inclusion
**4.3. Storage Classes**
4.3.1. *auto* Storage Class
4.3.2. *register* Storage Class
4.3.3. *static* Storage Class
4.3.4. *extern* Storage Class

**Reference Books:**


**1.** "C Language Programming", By Gottfried, Tata McGraw Hill
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