

Swami Ramanand Teerth Marathwada University, Nanded
B.Sc First Year Semester Pattern Information Technology (Optional)
With Effect from 2009-10

Aims and Objectives:

1. To provide a professional level of competence in the most common languages, systems, methods and tools.
2. To provide a sound understanding of principles of Information Technology.
3. To a strong sense of professionalism in students.
4. To reflect the current and emerging trends in the computing fields.

Academic Programme:

The programme is of three years duration (Six Semester), B.Sc.- I Sem, B.Sc.II Sem, B.ScIII Sem ,B.Sc. IV Sem , B.Sc. V Sem and B.Sc.-VI Sem
 The scheme of instructions and examination of theory and practical papers is as follows.

B.Sc. I Year. Information Technology (Optional)

Paper No.	Paper Title	Teaching Periods Per Week (Theory/ Practical)	Marks (University Evaluation)	Marks (Internal Evaluation)	Total Marks	Total Periods	Duration of Examination
Semester-I							
I	Fundamentals of Information Technology	03 Periods Theory	50	10	60	40	03 Hours
II	Web Page Design	03 Periods Theory	50	10	60	40	03 Hours
Semester –II							
III	DOS and Windows Operating System	03 Theory Periods	50	10	60	40	03 Hours
IV	Programming in C	03 Periods Theory	50	10	60	40	03 Hours
V (Annual Practical I Sem + II Sem)	Computer Lab-I	01 Practical (03 Periods)	60	-----	60	20 Minimum Practicals	03 Hours
Total Marks					300		

Paper –I : Fundamentals of Information Technology

Marks : 50

Periods : 40

1. Basics of Computer System (periods 8)

History of Computer, Generations, Block diagram of computer, Characteristics of computer, Computer Classification and Types of computer.

2. Data Representation within Computer (periods 8)

Bit, Byte, Word, ASCII, EBCDIC, BCD code, Introduction to Number system: Binary, Decimal, Octal, Hexadecimal. Conversions from one Number system to another.

3. Data Storage (periods 6)

Memory Cell, RAM, ROM, Floppy Disk, Hard Disk, CD-ROM, DVD, Pen-Drive, Archival Memory

4. Introduction to Information Technology (Period 8)

Introduction to Data, Information, Different forms of Data (Etymology, Logic Data concept, Physical Data Concept) Characteristics and properties of Information, Distinction between Data and Information, Uses of Information Technology: in Business, in Medicine, in Office Automation, in Research and Development.

5. Computer Software (Period 3)

What is Software?,
Types of Software: System Software, Application Software

6. Computer Programming (period 7)

Introduction to Computer Program,
Algorithm: Algorithm definition, Characteristics, Developing an Algorithm
Flowchart: Definition, Symbol, few example on flowcharting, Advantages and Limitations using flowchart, steps on program development

Reference Books:

- 1. A Text Book of Information Technology- Swarup K.Das , Dominant Publication and Distributors, New Delhi**
- 2. Introduction to Information Technology- V.Rajaraman PHI Publication**
- 3. Fundamentals of Computer by V.Rajaraman, BPB Publication**

Paper - II : Web Page Design

Marks : 50

Periods : 40

- 1. Web Publishing (Period 4)**
Web Browser, WWW, The need for careful Web Development, Basic web Process model
- 2. Overview of HTML (Period 6)**
Introduction, Rules and Guide lines, Structure of HTML Document, Document Type.
- 3. The Markup Tag (Period 6)**
HTML tag, HEAD tag, BODY tag, Paragraph tag, Break tag, List tag, Formatted and Unformatted Text, Quotations, Horizontal Rules, Address tag, Comments tag, Hyper link, Font.
- 4. Linking and Addressing (Period 6)**
Linking Basic, URL(Basic Concept, Feature, Formula, Relative URL), The Anchor Element, Link Rendering, Anchor Attribute, Accelerator Keys, Tabindex attribute, Anchor and Link Relationships, Images and Anchor, Image maps(Server side and Client Side Image Map), ImageMap attribute, Semantic Linking with Link element.
- 5. Tables and Layout (Period 6)**
Table tag, Rowspan & Colspan attribute, Cellpadding and Cellspacing, Cell alignment, colored tables and cells, Background Images in Tables, Centred Table Layout, Complex Table Layout.
- 6. Frame (Period 6)**
Introduction to Frame and its tag, Frame Targeting, Floating Frame, Simple Frame example.
- 7. Forms (Period 6)**
How are Form Used?, Form Preliminaries, Form tag, Action, Method, enctype attribute, Simple form example,
Form field elements: Text fields, Pull-Down Menus, Scrolled List, Check Box, Radio Buttons, Reset and Submit Button, Input tag,
Form elements: Button, Labels, Fieldset

Reference Book

1. The Complete Reference HTML and XHTML Fourth Edition, Thomas A Powel, TataMcGraw Hill
2. HTML Complete Second edition BPB Publication.

B.Sc. Information Technology (Optional) Second Semester

Paper - III : DOS and Windows Operating system

Marks : 50

Periods : 40

1. Disk Operating System (8 periods)

DOS Preliminaries, Booting Procedure, Files, Directory, Wild Character, Internal DOS Commands, External DOS Commands. Configuration of DOS(Config.Sys), Batch file concept, Study of Autoexec.bat file

2.. Introduction to Windows Operating System (8 periods)

What is Windows Operating system?, History, Files, Folders, Architecture of Windows O.S.,
Basics of Windows: Desktop, My Computer, Recycle bin, Control Panel, Network place
Quick Launch toolbar.

3. Windows Explorer (Periods 7)

Opening Windows explorer, Copying, Pasting, Moving, Deleting, Send to files,
Controlling and customizing the toolbars, Address bar, History list, Working with files
and Folders

4. Features of MS-Windows (Period 7)

GUI, Multitasking, Multi-user, Important Files of windows and Their Location (e.g.
DDL, INI file etc.)

5.Windows Accessory (Period 6)

Calculator, CharacterMap, NotePad, WordPad, Paint, System Tools and Minor
Troubleshooting using different .ini files, windows registry files.

6. Installation of Windows (Period 4)

Reference Books:

1. MS-DOS 6.22 by Russell A, Stultz, BPB Publication.
2. Advanced MS-DOS Programming by Ray Duncan, BPB Publication
3. Teach Your Self Windows 2000 by Brain Underdahl
4. Windows 98 Complete, BPB Publication.

Paper- IV : Programming in C

Marks : 50

Periods : 40

1. Introduction to C (5 periods)

Introduction, Character set, Identifiers, Keyword, Data types, Constant, Variables, Input/Output Statement, operators, Hierarchy of Operation, Structure of C program.

2. The Decision and Looping, Control Structure (8 periods)

If Statement, If-Else statement, Nesting of If-Else, Switch Statement, Goto. While loop, Do-While loop, For loop.

3. Arrays (5 periods)

Introduction to Array, Types of array, Array initialization in memory, bound Checking.

4. Storage Classes (4 periods)

Automatic, Register, Static, Scope rules.

5. Functions (7 periods)

Introduction, Advantages, arguments and local variables, returning function results, Declaration of function types, passing values between function, recursion.

6. Character String (4 periods)

What are string, Standard Library string functions: strlen(), strcpy(), strcmp(), strcat().

7. Introduction to Pointers ,Structure and Union (7 periods)

Reference Books:

1. Let US C by Yeshwant Kanetkar, BPB Publication.
2. Programming in ANSI C by E. Balaguruswamy, TATA MCGRAW Hill Publication.
3. Programming in ANSI and Turbo C by Prof. Kamthane, Pearson Education.

Paper V : Computer LAB.-I
Marks : 60

Practical contains Aim of Experiment, Description, Result, and Record Book (60 Marks =50 marks for Experiment and 10 Marks for Record Book) (Practical based on Paper I,II, III and IV)

1. Study of Booting procedure of DOS.
2. Study about CONFIG.SYS and AUTOEXEC.BAT files.
3. Study of Internal and External Commands.
4. Study of components of Windows operating system.
5. Study of Windows Accessories.
6. Study about the Ms-Word (File Menus, Document creation, Text formatting).
7. Writing programs in C for small problem mainly computational to illustrates expression and operator precedence.
8. Writing some simple programs like finding factorial of numbers, summation of set of numbers, computation of prime numbers, prime factors etc.
9. Problem related to Array like Print reverse order of array, sum of array element, sorting of array, finding maximum and minimum element from array.
10. Problem which involve manipulation of two dimensional arrays like addition, subtraction, multiplication of arrays.
11. Problem which involve manipulate arguments to main().
12. General String manipulation problem.
13. Problem based on Standard string Library functions.
14. Problem based on Storage classes.