



SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED [M.S.]

Choice Based Credit System

(CBCS Pattern)

Faculty of Computer Studies

Syllabus of B.Sc. Network Technology F. Y.

Under Graduate (UG) Program

| Semester | Subject Code | Course Name | Credit | | Total Credits |
|---------------|--------------|---|----------|----------|---------------|
| | | | Internal | External | |
| Semester – I | S1.1 | 1. Basics of Computer System | 1 | 3 | 4 |
| | S1.2 | 2. Communication and Soft Skills – I | 1 | 3 | 4 |
| | S1.3 | 3. Database Management System | 1 | 3 | 4 |
| | S1.4 | 4. Web Technology | 1 | 3 | 4 |
| | S1.Lab 1 | 5. Lab Course – 1 (DOS, Windows & Linux OS) | - | 2 | 2 |
| | S1.Lab 2 | 6. Lab Course – 2 (Web Technology) | - | 2 | 2 |
| | | TOTAL | | | 20 |
| Semester – II | S2.1 | 1. Fundamental of Digital Logic | 1 | 3 | 4 |
| | S2.2 | 2. Programming in C | 1 | 3 | 4 |
| | S2.3 | 3. Statistical Techniques in Computer Science | 1 | 3 | 4 |
| | S2.4 | 4. Communication and Soft Skills – II | 1 | 3 | 4 |
| | S2.Lab 1 | 5. Lab Course – 3 (Programming in C) | - | 2 | 2 |
| | S2.Lab 2 | 6. Lab Course – 4 (Office Automation) | - | 2 | 2 |
| | | TOTAL | | | 20 |

| | |
|-----------------|-------------------------------|
| Name of Course | B.C.A, B.Sc. NT & B.Sc. NT FY |
| Semester | I Semester |
| Name of Subject | Basics of Computer System |
| Subject Code | S1.1 |

Unit – I

| | | | | |
|----|---|--|--------------------|----------|
| 1. | Basic Computer Organization and History | | Lecturers Required | Ref. No. |
| | a) | Characteristics of Computer | 02 | 1, 2 |
| | b) | Basic Computer Organization | 01 | 1, 2 |
| | c) | Generation of Computer | 02 | 1, 2 |
| | d) | Classification of Computer Minicomputer, Microcomputer, Mainframe System, Workstations, Client and Server, Handheld Computer, Supercomputer | 04 | 1, 2 |

References:

| Sr. No. | Name of the Book | Author | Publication |
|---------|---|--------------|-----------------|
| 1. | Fundamental of Computer – 5 th & 6 th Edition | P.K.Sinha | BPB Publication |
| 2. | Fundamental of Computer | V. Rajaraman | PHI Publication |

Unit – II

| | | | | |
|----|----------------------|--|--------------------|----------|
| 2. | Computer Peripherals | | Lecturers Required | Ref. No. |
| | a) | Input Devices :- Keyboard, Mouse, trackball, Joystick, electronic pen, Touch Screen, Image Scanner, OCR, OMR, MICR, Bar code reader, Digitizer, speech recognition devices. | 04 | 1, 2 |
| | b) | Output Devices :- Monitors, Dot-matrix printer, Ink-jet printer, Laser Printer, Plotter. | 03 | 1, 2 |
| | c) | Modem and Projector | 01 | 1, 2 |
| | d) | Bio-metric devices | 01 | 1 |

References:

| Sr. No. | Name of the Book | Author | Publication |
|---------|---|--------------|-----------------|
| 1. | Fundamental of Computer – 5 th & 6 th Edition | P.K.Sinha | BPB Publication |
| 2. | Fundamental of Computer | V. Rajaraman | PHI Publication |

Unit – III

| 3. | Computer Memory | | Lecturers Required | Ref. No. |
|----|-----------------|--|--------------------|----------|
| | a) | Main Memory :- RAM, ROM, PROM, EPROM, UVEPROM, EEPROM, Base Memory, Cache Memory. | 04 | 1, 2 |
| | b) | Secquential Access Memory :- Magnetic Tape. | 01 | 1, 2 |
| | c) | Direct Access Memory :- HDD. | 01 | 1, 2 |
| | d) | Optical Storage :- CD, DVD, Blue-ray disk. | 02 | 1, 2 |
| | e) | Flash Memory :- Pen-drive, memory card. | 01 | 1, 2 |

References:

| Sr. No. | Name of the Book | Author | Publication |
|---------|---|--------------|-----------------|
| 1. | Fundamental of Computer – 5 th & 6 th Edition | P.K.Sinha | BPB Publication |
| 2. | Fundamental of Computer | V. Rajaraman | PHI Publication |

Unit – IV

| 4. | Operating System | | Lecturers Required | Ref. No. |
|----|------------------|----------------------------------|--------------------|----------|
| | a) | Introduction to Operating System | 01 | 1, 2 |
| | b) | Functions of Operating System | 01 | 1, 2 |
| | c) | Types of Operating System | 02 | 1, 2, 3 |
| | d) | DOS and Windows OS | 02 | 1, 2 |
| | e) | Linux OS | 01 | 1, 2, 3 |

References:

| Sr. No. | Name of the Book | Author | Publication |
|---------|---|------------------|---------------------------------|
| 1. | Fundamental of Computer – 5 th & 6 th Edition | P.K.Sinha | BPB Publication |
| 2. | Fundamental of Computer | V. Rajaraman | PHI Publication |
| 3. | The complete reference in Linux | Richard Petersen | McGraw Hill Publishing Co. Ltd. |

Unit – V

| 5. | Application and Software Packages | | Lecturers Required | Ref. No. |
|----|-----------------------------------|--|--------------------|----------|
| | a) | Word Processing | 02 | 1, 2 |
| | b) | Spread Sheet Software | 02 | 1, 2 |
| | c) | Graphics Packages- Coral draw | 02 | 1, 2 |
| | d) | Personal Assistant Packages-Intelligent Personal Assistant (IPA) | 01 | 1, 2 |

References:

| Sr. No. | Name of the Book | Author | Publication |
|---------|---|--------------|-----------------|
| 1. | Fundamental of Computer – 5 th & 6 th Edition | P.K.Sinha | BPB Publication |
| 2. | Fundamental of Computer | V. Rajaraman | PHI Publication |

Unit – VI

| 6. | Data Communication and Internet | | Lecturers Required | Ref. No. |
|----|---------------------------------|--------------------------------------|--------------------|----------|
| | a) | Data transmission modes | 02 | 1, 2 |
| | b) | OSI Model | 01 | 1, 2 |
| | c) | Role of communication protocol | 02 | 1, 2 |
| | d) | Wireless network technologies | 02 | 1, 2 |
| | e) | E-mail, FTP, | 01 | 1, 2 |
| | f) | Web Browser and types of web browser | 02 | 1, 2 |

References:

| Sr. No. | Name of the Book | Author | Publication |
|---------|---|--------------|-----------------|
| 1. | Fundamental of Computer – 5 th & 6 th Edition | P.K.Sinha | BPB Publication |
| 2. | Fundamental of Computer | V. Rajaraman | PHI Publication |

| | |
|-----------------|-----------------------------------|
| Name of Course | B.C.A, B.Sc. NT & B.Sc. NT FY |
| Semester | I Semester |
| Name of Subject | Communication and Soft Skills - I |
| Subject Code | S1.2 |

Unit – I

| 1. | English Grammar & Usages | | Lecturers Required | Ref. No. |
|----|--------------------------|-----------------------------------|--------------------|------------|
| | a) | Basic sentence structures | 03 | 1, 2, 3, 4 |
| | b) | Verbs and their forms with Tenses | 03 | 1, 2, 3, 4 |
| | c) | Clauses | 03 | 1, 2, 3, 4 |
| | d) | Synonyms & Antonyms | 01 | 1, 2, 3, 4 |
| | e) | Idioms & Phrases | 02 | 1, 2, 3, 4 |

References:

| Sr. No. | Name of the Book | Author | Publication |
|---------|---------------------------------|-------------------------------|--|
| 1) | A Practical English Grammar | A. J. Thomson, A.V. Martinet | Oxford University Press – 4 th Edition |
| 2) | English grammar and composition | Rajendra Pal & Prem Lata Suri | Sultan Chand & Sons Publication – 19 th Edition |
| 3) | English grammar and composition | Wren & Martin | S. Chand & Co. Ltd. -2008/9 th Edition |
| 4) | Mac Millan Foundation English | R. K. Dwivedi, A. Kumar. | MacMillan India Ltd. – 2002 /2 nd Edition |

Unit – II

| 2. | Communication Skills | | Lecturers Required | Ref. No. |
|----|----------------------|---------------------------------------|--------------------|----------|
| | a) | Concept | 01 | 01 |
| | b) | Methods (verbal & non-verbal) | 02 | 01 |
| | c) | Barriers to communication | 03 | 01 |
| | d) | Principles of effective communication | 02 | 01 |

References:

| Sr. No. | Name of the Book | Author | Publication |
|---------|---------------------------------|------------------------------|---|
| 1) | Developing communication Skills | Krishna Mohan, Meera Banerji | MacMillan India Ltd. – 2005 /16 th Edition |

Unit – III

| | | | | |
|----|-----------------------------------|--|--------------------|----------|
| 3. | Soft Skills & Situational English | | Lecturers Required | Ref. No. |
| | a) | Soft Skills : Concept & Skills | 02 | 1, 2, 3 |
| | b) | Leadership | 03 | 1, 2, 3 |
| | c) | Situational English : Thanking, inviting, Greetings, Introduction, Enquiring, Expressing gratitude, etc. | 04 | 1, 2, 3 |

References:

| Sr. No. | Name of the Book | Author | Publication |
|---------|---|------------------------------------|---|
| 1) | Soft Skills | K Alex. | - |
| 2) | Spoken English- Level one | G Radhakrishana Pillai, K Rajeevan | Olivannan Gopalakrishanan Emerald Publication – 2008 Edition |
| 3) | Personality Development & Communicative English | Dr. T. Bharti & Dr. M Hariprasad | Neelkamal Publications Pvt. Ltd. 2007 – 7 th Edition |

Unit – IV

| | | | | |
|----|----------------|---------------------|--------------------|------------|
| 4. | Carrier skills | | Lecturers Required | Ref. No. |
| | a) | Group Discussion | 02 | 1, 2, 3, 4 |
| | b) | Personal Interview | 02 | 1, 2, 3, 4 |
| | c) | Conflict Management | 02 | 1, 2, 3, 4 |

References:

| Sr. No. | Name of the Book | Author | Publication |
|---------|---|----------------------------------|---|
| 1) | Developing communication Skills | Krishna Mohan, Meera Banerji | Macmillan India Ltd. 16 th Edition |
| 2) | Group Discussion for Admissions & Jobs | AnandGanguly | Pustak Mahal, Delhi |
| 3) | Soft Skills | K Alex. | - |
| 4) | Personality Development & Communicative English | Dr. T. Bharti & Dr. M Hariprasad | Neelkamal Publications Pvt. Ltd. Hyderabad 2007 – 7 th Edition |

Unit – V

| | | | | |
|----|--|--|--------------------|----------|
| 5. | Passage comprehension & Reading strategies | | Lecturers Required | Ref. No. |
| | a) | Reading skills | 01 | 1, 2 |
| | b) | Reading & understanding different text | 03 | 1, 2 |

References:

| Sr. No. | Name of the book | Author | Publication |
|---------|---|----------------------------------|--|
| 1) | English grammar and composition | Rajendra Pal & Prem Lata Suri | Sultan Chand & Sons Publication – 19 th Edition |
| 2) | Personality Development & Communicative English | Dr. T. Bharti & Dr. M Hariprasad | Neelkamal Publications Pvt. Ltd., Hyderabad 2007 – 7 th Edition |

Unit – VI

| | | | | |
|----|----------------|---|--------------------|----------|
| 6. | Writing Skills | | Lecturers Required | Ref. No. |
| | a) | E-mail writing : To seek jobs, invitation, inviting, thanking emails, etc. | 03 | 1, 2 |
| | b) | Formal letters : Job application, Placing supply order, letter to editors, etc. | 03 | 1, 2 |
| | c) | Resume Building | 01 | 1, 2 |

References:

| Sr. No. | Name of the Book | Author | Publication |
|---------|-------------------------------|--------------------------|---|
| 1) | Soft Skills | K Alex. | - |
| 2) | Mac Millan Foundation English | R. K. Dwivedi, A. Kumar. | Macmillan India Ltd. 2002 – 2 nd Edition |

| | |
|-----------------|-------------------------------|
| Name of Course | B.C.A, B.Sc. NT & B.Sc. NT FY |
| Semester | I Semester |
| Name of Subject | Database Management System |
| Subject Code | S1.3 |

Unit – I

| 1. | Introduction to DBMS | | Lecturers Required | Ref. No. |
|----|----------------------|---|--------------------|----------|
| | a) | Intro, Definition & application area | 3 | 1, 2, 3 |
| | b) | Characteristics of DBMS | 2 | 1, 2, 3 |
| | c) | Data Models (Relational, network, Hierarchical) | 2 | 1, 2, 3 |
| | d) | Structure of DBMS | 2 | 1, 2, 3 |
| | e) | Data independence | 1 | 1, 2, 3 |
| | F) | Users of DBMS | 1 | 1, 2, 3 |
| | g) | Advantages & disadvantages of DBMS | 1 | 1, 2, 3 |

References:

| Sr. No. | Name of the book | Author | Publication |
|---------|----------------------------|-------------|---|
| 1 | Database System | By Korth | Mcgraw Hill International Edition (5 th Edition) |
| 2 | Database System | C.J Date | Pearson Educational Publication (7 th Edition) |
| 3 | Database management System | Bipin Desai | Galgotia Publication |

Unit - II

| 1. | ER & Conversion ER to Relational Data Model | | Lecturers Required | Ref. No. |
|----|---|--|--------------------|----------|
| | a) | Intro, ER data Model (entity, entity set, attributes, relationship & relationship set) | 3 | 1 |
| | b) | Relations, Conversion of ER to relational model | 2 | 1 |
| | c) | Integration Constraints(keys) | 1 | 1 |
| | d) | Aggregation | 2 | 1 |

References:

| Sr. No. | Name of the Book | Author | Publication |
|---------|------------------|----------|---|
| 1 | Database System | By Korth | Mcgraw Hill International Edition (5 th Edition) |

Unit - III

| | | | | |
|---|--------------------|---|--------------------|----------|
| 3 | Relational Algebra | | Lecturers Required | Ref. No. |
| | a) | Relational Algebra (Selection, Projection, Set operations Joins, division | 6 | 1 |

References :

| Sr. No. | Name of the Book | Author | Publication |
|---------|------------------|----------|---|
| 1 | Database System | By Korth | Mcgraw Hill International Edition (5 th Edition) |

Unit - IV

| | | | | |
|----|--------------------|--|--------------------|----------|
| 4. | Database Designing | | Lecturers Required | Ref. No. |
| | a) | Functional Dependencies | 1 | 1 |
| | b) | Non loss decomposition | 1 | 1 |
| | c) | Functional dependencies, 1NF, 2NF, 3NF, BCNF & 5NF | 5 | 1 |

References :

| Sr. No. | Name of the Book | Author | Publication |
|---------|------------------|----------|---|
| 1. | Database System | By Korth | Mcgraw Hill International Edition (5 th Edition) |

Unit - V

| | | | | |
|----|-------------------|--|--------------------|----------|
| 5. | File organization | | Lecturers Required | Ref. No. |
| | a) | Introduction | 1 | 1, 2 |
| | b) | Organization of records in file | 2 | 1, 2 |
| | c) | Types of file organization (Heap, Sorted, Indexed & Hashed | 5 | 1, 2 |

References :

| Sr. No. | Name of the Book | Author | Publication |
|---------|------------------|--------|-------------|
|---------|------------------|--------|-------------|

| | | | |
|-----|----------------------------|-------------|---|
| No. | | | |
| 1. | Database System | By Korth | Mcgraw Hill International Edition (5 th Edition) |
| 2. | Database management System | Bipin Desai | Galgotia Publication |

Unit - VI

| | | | | |
|----|-------------------------|--|--------------------|----------|
| 6. | Index file organization | | Lecturers Required | Ref. No. |
| | a) | Introduction | 1 | 1 |
| | b) | Types of Indexes (Dense, Sparse, Clustered, Primary and secondary & B+ tree) | 4 | 1 |

References :

| Sr. No. | Name of the Book | Author | Publication |
|---------|------------------|----------|---|
| 1. | Database System | By Korth | Mcgraw Hill International Edition (5 th Edition) |

| | |
|-----------------|-------------------------------|
| Name of Course | B.C.A, B.Sc. NT & B.Sc. NT FY |
| Semester | I Semester |
| Name of Subject | Web Technology |
| Subject Code | S1.4 |

Unit – I

| 1. | Introduction to Web Designing & HTML Documents | | Lectures Required | Ref. No. |
|----|--|---|-------------------|----------|
| | e) | Historical Roots of HTML, | 01 | 1 |
| | f) | Web page, Website, | 01 | 1 |
| | g) | The Phases of Web Site Development. | 01 | 1 |
| | h) | Structure of HTML documents and Basic Tags: HTML, HEAD, TITLE, BODY. | 01 | 1 |
| | i) | Formatting Tags: Paragraph Tags, List tags, HR Tag. | 01 | 1 |
| | j) | Headings Tags, PRE tag, DIV tag, SPAN tag. | 01 | 1 |
| | k) | FONT Tag, ADDRESS tag, MARQUEE tag. | 01 | 1 |
| | l) | Text-Level Elements: B tag, I tag, U tag, SUP tag, SUB tag, BIG tag, SMALL tag, STRIKE tag & other different formatting tags. | 01 | 1 |

References:

| Sr. No. | Name of the Book | Author | Publication |
|---------|---|----------------|------------------------------|
| 1. | HTML The complete Reference -2nd Edition | Thomas A Powel | Tata McGraw Hill publication |
| 2. | The complete Reference (HTML & XHTML)-5th Edition | Thomas A Powel | Tata McGraw Hill publication |

Unit – II

| 2. | Technologies For Web Application | | Lectures Required | Ref. No. |
|----|----------------------------------|--|-------------------|----------|
| | d) | WWW, Web browser. | 02 | 3 |
| | e) | U.R.L. concept | 01 | 1 |
| | f) | Web server, Web protocols: HTTP, FTP, Telnet. | 02 | 3 |
| | g) | Hyperlink (Anchor) Tag & it's all attributes, Creating Email Hyperlinks (using mailto anchor). | 02 | 1 |
| | h) | The Role of Images on the Web, tag & its all attributes, Using Images as links. | 02 | 1 |
| | i) | Tables in HTML:- TABLE, TR, TH, TD tag with example, table with all Attributes, | 02 | 1 |

References:

| Sr. No. | Name of the book | Author | Publication |
|---------|---|----------------|------------------------------|
| 1. | HTML The complete Reference -2nd Edition | Thomas A Powel | Tata McGraw Hill publication |
| 2. | The complete Reference (HTML & XHTML)-5th Edition | Thomas A Powel | Tata McGraw Hill publication |
| 3. | Computer Fundamental s (6 th Edition) | P. K. Sinha | BPB Publication |

Unit – III

| 3. | Basic Interactivity | | Lectures Required | Ref. No. |
|----|---------------------|---|-------------------|----------|
| | f) | Frames in HTML: FRAMESET & FRAME tags & its attributes, Simple Frame Example. | 02 | 1 |
| | g) | Forms in HTML: Introduction to forms. | 01 | 1 |
| | h) | FORM element & it's attributes (Action, Method(GET, POST), Name) | 01 | 1 |
| | i) | Form controls: Text Controls, Password Field, Multiline Text Input, Pull-Down Menus, Check Box, Radio Buttons, Scrolled List, Reset Button and Submit button. | 03 | 1 |

References:

| Sr. No. | Name of the book | Author | Publication |
|---------|--|----------------|------------------------------|
| 1. | HTML The complete Reference -2nd Edition | Thomas A Powel | Tata McGraw Hill publication |

Unit – IV

| 4. | DHTML and CSS | | Lecturers Required | Ref. No. |
|----|---------------|---|--------------------|----------|
| | f) | Introduction of DHTML, Ramifications of DHTML. | 02 | 1 |
| | g) | Rollover Buttons. | 01 | 1 |
| | h) | Introduction to Cascading Style Sheets (CSS). | 01 | 1 |
| | i) | Embedded Styles, Inline Styles, Imported/External Styles. | 03 | 1 |
| | j) | Style Sheet Example. | 01 | 1 |

References:

| Sr. No. | Name of the book | Author | Publication |
|---------|-------------------|----------------|------------------|
| 1. | HTML The complete | Thomas A Powel | Tata McGraw Hill |

Unit – V

| | | | | |
|----|-------------|---|--------------------|----------|
| 5. | JAVA Script | | Lecturers Required | Ref. No. |
| | e) | The Purpose of Scripting | 01 | |
| | f) | Introduction of JAVA Script | 01 | |
| | g) | Adding script to documents with example. | 01 | |
| | h) | Variables. | 01 | |
| | i) | Input and Output statements of JAVA Script. | 01 | |

References:

| Sr. No. | Name of the book | Author | Publication |
|---------|--|----------------|------------------------------|
| 1. | HTML The complete Reference -2nd Edition | Thomas A Powel | Tata McGraw Hill publication |

Unit – VI

| | | | | |
|----|---|--|--------------------|----------|
| 6. | Web Publishing and Advanced HTML Concepts | | Lecturers Required | Ref. No. |
| | g) | Publishing the Site. | 02 | 1 |
| | h) | The Realities of Publishing and Maintaining a Web Site | 01 | 1 |
| | i) | introduction of Search engine optimization | 02 | 1 |
| | j) | Meta -Information | 02 | 1 |
| | k) | Overview of Client/Server Programming on the Web. | 02 | 1 |

References:

| Sr. No. | Name of the book | Author | Publication |
|---------|--|----------------|------------------------------|
| 1. | HTML The complete Reference -2nd Edition | Thomas A Powel | Tata McGraw Hill publication |

Lab Course – 1 (S1.Lab 1)
(DOS, Windows and Linux)

| Sr. No. | Title of Programme | Required Hours |
|---------|--|----------------|
| 1) | Study of external commands in DOS | 4 hours |
| 2) | Study of Internal Commands in DOS | 4 hours |
| 3) | Study of Batch File in DOS | 1 hours |
| 4) | Study of Windows Explorer | 4 hours |
| 5) | Study of Notepad | 2 hours |
| 6) | Study of WordPad | 2 hours |
| 7) | Study of Paint | 2 hours |
| 8) | Study of Calculator | 1 hours |
| 9) | Study of Character Map | 1 hours |
| 10) | Study of My Network Places | 2 hours |
| 11) | Study of File Related Commands in LINUX | 2 hours |
| 12) | Study of Directory Related Commands in LINUX | 2 hours |
| 13) | Study of Communication Commands in Linux | 2 hours |
| 14) | | 2 hours |

References:

| Sr. No. | Name of the book | Author | Publication |
|---------|----------------------|-------------------|--------------------------|
| 1. | MS-DOS 6.22 | Russell A. Stultz | BPB Publication |
| 2. | Working in MS-Office | Ron Mansfield | Tata McGraw Hill Edition |
| 3. | Windows 98 Complete | Microsoft | BPB Publication |
| 4. | MS-DOS programming | Microsoft | BPB Publication |

Lab Course – 2 (S1.Lab 2)

(Web Technology)

| Sr. No. | Title of Programme | Required Hours |
|---------|--|----------------|
| 15) | Introducing web Browser and concept of url and website | 2 Hours |
| 16) | Write a program to structure of HTML | 2 Hours |
| 17) | Write a program on formatting tags. | 2 Hours |
| 18) | Write a program on PRE, DIV, SPAN tags | 2 Hours |
| 19) | Write a program on font, address, marquee tags. | 1 Hours |
| 20) | Write a program to text level elements. | 1 Hours |
| 21) | Write a program to anchor tag with all attributes. | 2 Hours |
| 22) | Write a program on mailto anchor. | 1 Hours |
| 23) | Write a program on img tag with all attributes. | 2 Hours |
| 24) | Write a program on table tag with all attributes. | 3 Hours |
| 25) | Write a program on frame tag with all attributes. | 2 Hours |
| 26) | Write a program on user registration form using all controls and attributes of form tag. | 3 Hours |
| 27) | Write a program on rollover button. | 2 Hours |
| 28) | Write a program on css of embedded styles, inline styles, imported/external styles. | 3 Hours |
| 29) | Write a program on adding java script to documents with example. | 2 Hours |
| 30) | Write a program on input and output statements of java script. | 2 Hours |

References:

| Sr. No. | Name of the book | Author | Publication |
|---------|---|----------------|------------------------------|
| 1. | HTML The complete Reference -2nd Edition | Thomas A Powel | Tata McGraw Hill publication |
| 2. | The complete Reference (HTML & XHTML)-5th Edition | Thomas A Powel | Tata McGraw Hill publication |
| 3. | Computer Fundamental s (6 th Edition) | P. K. Sinha | BPB Publication |

| | |
|-----------------|-------------------------------|
| Name of Course | B.C.A, B.Sc. NT & B.Sc. NT FY |
| Semester | II Semester |
| Name of Subject | Fundamental of Digital Logic |
| Subject Code | S2.1 |

Unit – I

| 1. | Fundamental concepts | | Lecturers Required | Ref. No. |
|----|----------------------|--|--------------------|----------|
| | a) | Introduction | 01 | 1 |
| | b) | Digital Signals | 01 | 1 |
| | c) | Basic Gates and derived Gates: AND, OR, NOT, NAND, NOR, ExOR, Ex-NOR | 03 | 1 |
| | d) | De-Morgan's theorems | 01 | 1 |

References :

| | |
|----|--|
| 1) | "Modern Digital Electronics": -by R.P. Jain Tata McGraw –Hill Publication 3rd Edition ISBN:978-0-07-049492-3 |
|----|--|

Unit – II

| 2. | Number System and codes | | Lecturers Required | Ref. No. |
|----|-------------------------|---|--------------------|----------|
| | a) | Introduction to number systems | 01 | 1 |
| | b) | Decimal, Binary, Octal, Hexadecimal | 03 | 1 |
| | c) | Conversion from one number system to another number system. | 03 | 1 |
| | d) | Binary Arithmetic: Addition , Subtraction, Multiplication, Division | 03 | 1 |
| | e) | Half adder, full adder | 01 | 1 |
| | f) | 1's and 2's complement of Binary Number | 03 | 1 |
| | g) | Codes : BCD Code, Excess-3 Code, Gray Code | 03 | 1 |
| | h) | Error detecting and correcting codes | 03 | 1 |

References :

| | |
|----|--|
| 1) | "Modern Digital Electronics": -by R.P. Jain Tata McGraw –Hill Publication 3rd Edition ISBN:978-0-07-049492-3 |
|----|--|

Unit – III

| 3. | Combinational Logic Design | | Lecturers Required | Ref. No. |
|----|----------------------------|---|--------------------|----------|
| | a) | Standard Representation of logical functions SOP, POS Forms | 03 | 1 |
| | b) | K-map Representation of logical functions | 02 | 1 |
| | c) | Simplification of logical functions using K-map | 04 | 1 |
| | d) | Multiplexer, Demultiplexer | 03 | 1 |

References :

| | |
|----|---|
| 1) | "Modern Digital Electronics": -by R.P. Jain Tata McGraw –Hill Publication 3rd Edition ISBN:978-0-07-049492-3 |
|----|---|

Unit – IV

| 4. | Flip Flops | | Lecturers Required | Ref. No. |
|----|------------|------------------------|-----------------------|----------|
| | a) | 1-Bit Memory Cell | 01 | 1 |
| | b) | Clocked S-R Flip Flop | 01 | 1 |
| | c) | J-K Flip Flop | 01 | 1 |
| | d) | Master Slave Flip Flop | 01 | 1 |
| | e) | D-type Flip Flop | 01 | 1 |
| | f) | T-type Flip Flop | 01 | 1 |

References :

| | |
|----|---|
| 1) | "Modern Digital Electronics": -by R.P. Jain Tata McGraw –Hill Publication 3rd Edition ISBN:978-0-07-049492-3 |
|----|---|

Unit – V

| 5. | Sequential Logic Design | | Lecturers Required | Ref. No. |
|----|-------------------------|---|-----------------------|----------|
| | a) | Registers | 01 | 1 |
| | b) | Shift Register | 02 | 1 |
| | c) | Counter Synchronous and asynchronous Counter | 03 | 1 |

References :

| | |
|----|---|
| 1) | "Modern Digital Electronics": -by R.P. Jain Tata McGraw –Hill Publication 3rd Edition ISBN:978-0-07-049492-3 |
|----|---|

Unit – VI

| 6. | Timing Circuits, Converters & Introduction to microprocessor | | Lecturers Required | Ref. No. |
|----|---|---------------------------------|-----------------------|----------|
| | a) | Digital To Analog Converter | 01 | 1 |
| | b) | Analog To Digital Converter | 01 | 1 |
| | c) | I/O Buses | 01 | 1 |
| | d) | Block diagram of Microprocessor | 02 | 1 |

References :

| | |
|----|---|
| 1) | "Modern Digital Electronics": -by R.P. Jain Tata McGraw –Hill Publication 3rd Edition ISBN:978-0-07-049492-3 |
|----|---|

| | |
|----|---|
| 2) | MICROPROCESSOR by P. RamDhannat publication 5 th Edition |
|----|---|

| | |
|-----------------|-------------------------------|
| Name of Course | B.C.A, B.Sc. NT & B.Sc. NT FY |
| Semester | II Semester |
| Name of Subject | Programming in C |
| Subject Code | S2.2 |

Unit – I

| 1. | Introduction to Programming in C | | Lecturers Required | Ref. No. |
|----|----------------------------------|----------------------------------|--------------------|----------|
| | m) | History | 01 | 1, 2, 3 |
| | n) | Compilers and Interpreters | 01 | 1, 2, 3 |
| | o) | Structure of a C program | 02 | 1, 2, 3 |
| | p) | Algorithms & Flowcharts | 02 | 1, 2, 3 |
| | q) | Keywords, Identifiers, Variables | 01 | 1, 2, 3 |
| | r) | Data types | 02 | 1, 2, 3 |
| | s) | Types of Operator | 01 | 1, 2, 3 |
| | t) | Input and Output | 01 | 1, 2, 3 |

References :

| | |
|----|---|
| 1) | Structured Programming approach using C – Forouzan and Gilberg, Thomson learning publications |
| 2) | The C Programming language – Kernighan and Ritchie |
| 3) | Complete C Reference – Herbert Schildt |

Unit – II

| 2. | Control Structures | | Lecturers Required | Ref. No. |
|----|--------------------|--|--------------------|----------|
| | j) | Decision making structures, If, if-else, switch, | 03 | 1, 2, 3 |
| | k) | Loop Control structures, While, do-while, for | 03 | 1, 2, 3 |
| | l) | Break and continue. | 01 | 1, 2, 3 |

References :

| | |
|----|---|
| 1) | Structured Programming approach using C – Forouzan and Gilberg, Thomson learning publications |
| 2) | The C Programming language – Kernighan and Ritchie |
| 3) | Complete C Reference – Herbert Schildt |

Unit – III

| 3. | Functions in C | | Lecturers Required | Ref. No. |
|----|----------------|--|--------------------|----------|
|----|----------------|--|--------------------|----------|

| | | | | |
|--|----|-------------------------|----|---------|
| | k) | User defined functions | 01 | 1, 2, 3 |
| | l) | Declaration, definition | 01 | 1, 2, 3 |
| | m) | return keyword | 01 | 1, 2, 3 |
| | n) | Storage classes | 01 | 1, 2, 3 |
| | o) | Recursion. | 01 | 1, 2, 3 |

References :

| | |
|----|---|
| 1) | Structured Programming approach using C – Forouzan and Gilberg, Thomson learning publications |
| 2) | The C Programming language – Kernighan and Ritchie |
| 3) | Complete C Reference – Herbert Schildt |

Unit – IV

| 4. | Arrays | | Lecturers Required | Ref. No. |
|----|--------|---|--------------------|------------|
| | k) | Array declaration, initialization | 02 | 1, 2, 3, 4 |
| | l) | Types – one, two and multidimensional, | 03 | 1, 2, 3, 4 |
| | m) | What is Pointer?, Pointer declaration, initialization | 03 | 1, 2, 3, 4 |
| | n) | Pointer to pointer | 01 | 1, 2, 3, 4 |
| | o) | Arrays and pointers | 01 | 1, 2, 3, 4 |
| | p) | Functions and pointers. | 01 | 1, 2, 3, 4 |

References :

| | |
|----|---|
| 1) | Structured Programming approach using C – Forouzan and Gilberg, Thomson learning publications |
| 2) | The C Programming language – Kernighan and Ritchie |
| 3) | Complete C Reference – Herbert Schildt |
| 4) | Pointer in C – YeshwantKanetkar |

Unit – V

| 5. | Strings | | Lecturers Required | Ref. No. |
|----|---------|--------------------------------|--------------------|------------|
| | j) | Declaration and initialization | 01 | 1, 2, 3 |
| | k) | Standard library functions, | 02 | 1, 2, 3 |
| | l) | Strings and pointers | 01 | 1, 2, 3, 4 |
| | m) | Array of strings | 01 | 1, 2, 3 |

References :

| | |
|----|--|
| 1) | Structured Programming approach using C – Forouzan and Gilberg, Thomson learning |
|----|--|

| | |
|----|--|
| 2) | The C Programming language – Kernighan and Ritchie |
| 3) | Complete C Reference – Herbert Schildt |
| 4) | Pointer in C – YeshwantKanetkar |

Unit – VI

| 6. | Structures, Unions And File Handling | | Lecturers Required | Ref. No. |
|----|--------------------------------------|---|-----------------------|------------|
| | l) | Creating structures | 01 | 1, 2, 3 |
| | m) | Accessing structure members (dot Operator) | 01 | 1, 2, 3 |
| | n) | Array of structures, Nested structures | 02 | 1, 2, 3 |
| | o) | Pointers and structures | 01 | 1, 2, 3, 4 |
| | p) | Unions | 01 | 1, 2, 3 |
| | q) | Types of Files | 02 | 1, 2, 3 |
| | r) | Operations on files, Random Access to File. | 02 | 1, 2, 3 |

References :

| | |
|----|---|
| 1) | Structured Programming approach using C – Forouzan and Gilberg, Thomson learning publications |
| 2) | The C Programming language – Kernighan and Ritchie |
| 3) | Complete C Reference – Herbert Schildt |
| 4) | Pointer in C – YeshwantKanetkar |

| | |
|-----------------|--|
| Name of Course | B.C.A, B.Sc. NT & B.Sc. NT FY |
| Semester | II Semester |
| Name of Subject | Statistical Techniques in Computer Science |
| Subject Code | S2.3 |

Unit – I

| 1. | Introduction | | Lecturers Required | Ref. No. |
|----|--------------|---|--------------------|----------|
| | u) | Definition of Statistics | 01 | 1 |
| | v) | Importance of Statistics | 01 | 1 |
| | w) | Limitation of Statistics | 01 | 1 |
| | x) | Scope of Statistics (Computer Science, Industry, Economics, Social Science) | 02 | 1 |

References :

| Sr. No. | Name of Book | Writer | Publication |
|---------|---------------------------|-------------|---|
| 4) | Fundamental of Statistics | S. C. Gupta | Himalaya Publication (6 th revised & Enlarged Edition) |

Unit – II

| 2. | Data Condensation and Graphical Methods | | Lecturers Required | Ref. No. |
|----|---|---|--------------------|----------|
| | m) | Collection of Data, Types of Data | 1 | 1, 2 |
| | n) | Construction of Frequency, Cumulative and Relative Frequency distributions. | 2 | 1, 2 |
| | o) | Graphical representation of Frequency distribution: Histogram, Frequency Polygon, Frequency Curve and Cumulative Frequency curves | 3 | 1, 2 |
| | p) | Diagrammatic representations: Simple bar, Subdivided bar and Pie diagrams. | 2 | 1, 2 |

References :

| Sr. No. | Name of Book | Writer | Publication |
|---------|---------------------------|-------------|--|
| 1. | Fundamental of Statistics | S. C. Gupta | Himalaya Publication (6 th revised & Enlarged Edition) |
| 2. | Statistical Methods | S. P. Gupta | Sultan Chand & Sons Publication (37 th Revised Edition) |

Unit – III

| 3. | Measures of Central Tendency | | Lecturers Required | Ref. No. |
|----|------------------------------|---|--------------------|----------|
| | p) | Concept of central tendency | 01 | 1, 2 |
| | q) | Arithmetic Mean: Definition, Formulae and computation for ungrouped and grouped data, Merits and Demerits. Weighted | 03 | 1, 2 |

| | | | | |
|--|----|---|----|------|
| | r) | Median: Definition, Formulae and Computation for ungrouped and grouped data, Merits and Demerits. | 03 | 1, 2 |
| | s) | Mode: Definition, Formulae and Computation for ungrouped and grouped data, Merits and Demerits. | 03 | 1, 2 |

References :

| Sr. No. | Name of Book | Writer | Publication |
|---------|---------------------------|-------------|--|
| 1) | Fundamental of Statistics | S. C. Gupta | Himalaya Publication(6th revised & Enlarged Edition) |
| 2) | Statistical Methods | S. P. Gupta | Sultan Chand & Sons Publication (37 th Revised Edition) |

Unit – IV

| 4. | Measures of Dispersion: | | Lecturers Required | Ref. No. |
|----|-------------------------|---|--------------------|----------|
| | q) | Concept of Dispersion. | 01 | 1, 2 |
| | r) | Range: Definition, Formulae and Computation for ungrouped and grouped data. | 01 | 1, 2 |
| | s) | Standard Deviation: Definition, Formulae and Computation for ungrouped and grouped data. | 03 | 1, 2 |
| | t) | Variance: Definition, Formulae and Computation for ungrouped and grouped data. | 02 | 1, 2 |
| | u) | Coefficient of variance: Definition, Formulae and Computation for ungrouped and grouped data. | 02 | 1, 2 |

References :

| Sr. No. | Name of Book | Writer | Publication |
|---------|---------------------------|-------------|--|
| 1) | Fundamental of Statistics | S. C. Gupta | Himalaya Publication (6 th revised & Enlarged Edition) |
| 2) | Statistical Methods | S. P. Gupta | Sultan Chand & Sons Publication (37 th Revised Edition) |

Unit – V

| 5. | Probability | | Lecturers Required | Ref. No. |
|----|-------------|---|--------------------|----------|
| | n) | Permutation and combination | 01 | 1 |
| | o) | Sample space, Events and Types of events. | 01 | 1 |

| | | | | |
|--|----|--|----|---|
| | | of probability. | | |
| | q) | Theorems on Probability: i) $0 \leq P(A) \leq 1$ ii) $P(A) + P(A') = 1$ iii) $P(A \cup B) = P(A) + P(B)$ iv) $P(A \cup B) = P(A) + P(B) - P(A \cap B)$ | 03 | 1 |
| | r) | Problems on Probability | 02 | 1 |

References :

| Sr. No. | Name of Book | Writer | Publication |
|---------|--|----------------------------|---|
| 1) | Fundamental of Mathematical Statistics | S. C. Gupta & V. K. Kapoor | Sultan Chand & Sons Publication (9 th Extensively Revised Edition) |

Unit – VI

| 6. | Correlations and regressions | | Lecturers Required | Ref. No. |
|----|------------------------------|--|--------------------|----------|
| | s) | Definition of Correlation & Types | 01 | 1, 2 |
| | t) | Karl Pearson's coefficient of correlations for ungrouped data and problems | 03 | 1, 2 |
| | u) | Definition of Regression. | 01 | 1, 2 |

References :

| Sr. No. | Name of Book | Writer | Publication |
|---------|---------------------------|-------------|--|
| 1) | Fundamental of Statistics | S. C. Gupta | Himalaya Publication (6 th revised & Enlarged Edition) |
| 2) | Statistical Methods | S. P. Gupta | Sultan Chand & Sons Publication (37 th Revised Edition) |

| | |
|-----------------|------------------------------------|
| Name of Course | B.C.A, B.Sc. NT & B.Sc. NT FY |
| Semester | II Semester |
| Name of Subject | Communication and Soft Skills – II |
| Subject Code | S2.4 |

Unit – I

| 1. | Language Skills | | Lecturers Required | Ref. No. |
|----|-----------------|---------------------------------------|--------------------|----------|
| | a) | Definition | 1 | 1, 2 |
| | b) | Characteristics of language | 2 | 1, 2 |
| | c) | Listening: Process & types. | 2 | 1, 2 |
| | d) | Speaking: Process, speech style, etc. | 3 | 1, 2 |

References:

| Sr. No. | Name of the book | Author | Publication |
|---------|---|----------------------------------|---|
| 1) | Developing Communication Skills | Krishna Mohan, Meera Banerji | MacMillan India Ltd. – 16 th Edition |
| 2) | Personality Development & Communicative English | Dr. T. Bharti, Dr. M. Hariprasad | Neelkamal Publications Pvt. Ltd., Hyderabad – 7 th Edition |

Unit – II

| 2. | Soft Skills and Telephonic Skills | | Lecturers Required | Ref. No. |
|----|-----------------------------------|---|--------------------|----------|
| | a) | Mannerism and etiquettes | 2 | 1, 2 |
| | b) | Telephone etiquettes, Basic Telephone Mannerism, Handling tele-interviews, some useful expressions. | 4 | 1, 2 |
| | c) | Soft Skills : Negotiation Skills | 2 | 3 |
| | d) | Empathy skills | 2 | 3 |

References:

| Sr. No. | Name of the book | Author | Publication |
|---------|---|----------------------------------|--|
| 1) | Written & Spoken English | V. H. Savant & S. R. Madan | University Press India Pvt. Ltd, Hyderabad |
| 2) | Effective Telephone Skills | Thomas J. Farrell | Harcourt, 2 Sub-edition 1994 |
| 3) | Personality Development and Communicative English | Dr. T. Bharti, Dr. M. Hariprasad | Neelkamal Publication – 7 th Edition. |

Unit – III

| 3. | Day-to-Day conversation | | Lecturers Required | Ref. No. |
|----|-------------------------|---|--------------------|----------|
| | a) | Asking questions, Giving opinion, remarks, comments etc | 3 | 1, 2 |

| | | | | |
|--|----|-----------------------------|---|------|
| | c) | Telling short/moral stories | 2 | 1, 2 |
| | d) | Body language and speech | 3 | 1, 2 |

References:

| Sr. No. | Name of the book | Author | Publication |
|---------|------------------------|------------------------------------|----------------------------------|
| 1) | Spoken English for you | G. Radhakrishna Pillai, K Rajeevan | Emerald Publication 2008 Edition |
| 2) | Prism | - | Board of Editions, SRTMU, Nanded |

Unit – IV

| 4. | Presentation Skills | | Lecturers Required | Ref. No. |
|----|---------------------|--|--------------------|----------|
| | a) | Art of public speaking : Delivering speech, Seminars, etc. | 3 | 1, 2 |
| | b) | Hosting the programs : Anchoring, Vote of thanks, etc. | 3 | 1, 2 |
| | c) | Presentation skills: Voice Modulation, Pitch and pace. | 2 | 1, 2 |

References:

| Sr. No. | Name of the book | Author | Publication |
|---------|---------------------------------|------------------------------|---|
| 1) | Art of public speaking | Dr. B. R. Kishore | New light publishers, New Delhi |
| 2) | Developing Communication Skills | Krishna Mohan, Meera Banerji | MacMillan India Pvt. Ltd. 2005 – 16 th Edition |

Unit – V

| 5. | Report Writing | | Lecturers Required | Ref. No. |
|----|----------------|--------------------------|--------------------|----------|
| | a) | Newspaper report writing | 2 | 1 |
| | b) | Formal report writing | 2 | 1 |

References:

| Sr. No. | Name of the book | Author | Publication |
|---------|------------------------------|-------------------------|--|
| 1) | Macmillan foundation English | R. K. Dwivedi, A. Kumar | Macmillan India Ltd – 2002 – 2 nd Edition |

| | | | | |
|----|-----------|---|-----------------------|----------|
| 6. | Phonetics | | Lecturers Required | Ref. No. |
| | a) | Sounds in English : Consonants & vowels | 2 | 1 |
| | b) | Phonetic Transcription of words | 2 | 1 |
| | c) | Three term label | 2 | 1 |

References:

| Sr. No. | Name of the book | Author | Publication |
|------------|--|-------------------------|--|
| 1) | A course in Phonetics & spoken English | J. Sethi, P. V. Dhamija | Prentice – Hall of India Pvt. Ltd, New Delhi – 2 nd Edition |

Lab Course – 3 (S2.Lab 1)

(Programming in C)

| Sr. No. | Title of Programme | Required Hours |
|---------|---|----------------|
| 31) | Demonstrate C programming Structure | 2 hours |
| 32) | Use of data types | 4 hours |
| 33) | Use of control statements | 4 hours |
| 34) | Use of looping statements | 4 hours |
| 35) | Demonstrate input output statements | 2 hours |
| 36) | Use of user define function | 2 hours |
| 37) | Demonstrate recursion function | 2 hours |
| 38) | Use of array | 2 hours |
| 39) | Demonstrate string library function | 2 hours |
| 40) | Demonstrate pointers | 2 hours |
| 41) | Create a structure of employee & read record of five employee and display it. | 2 hours |
| 42) | Create a file student.xls and store the record of five students | 2 hours |

References :

| | |
|----|---|
| 1) | Structured Programming approach using C – Forouzan and Gilberg, Thomson learning publications |
| 2) | The C Programming language – Kernighan and Ritchie |
| 3) | Complete C Reference – Herbert Schildt |
| 4) | Pointer in C – YeshwantKanetkar |

Lab Course – 4 (S2.Lab 2)

(Office Automation)

| Sr. No. | Title of Programme | Required Hours |
|---------|--|----------------|
| 43) | Study of Word | 3 hours |
| 44) | Study of EXCEL | 3 hours |
| 45) | Study of PowerPoint | 3 hours |
| 46) | Study of Access | 3 hours |
| 47) | Study of Find and Replace Dialog Box in Microsoft Word | 2 hours |
| 48) | Study of Page Setup Dialog Box | 2 hours |
| 49) | Study of Table Formatting | 2 hours |
| 50) | Study of Custom Dictionary & Goto Dialog Box | 2 hours |
| 51) | Study of mail merge | 1 hours |
| 52) | Study of creating charts. | 2 hours |
| 53) | Study of border and shading dialog box. | 1 hours |
| 54) | Study of paragraph dialog box | 2 hours |

References:

| Sr. No. | Name of the book | Author | Publication |
|---------|----------------------|---------------|--------------------------|
| 1. | Working in MS-Office | Ron Mansfield | Tata McGraw Hill Edition |
| 2. | Windows 98 Complete | Microsoft | BPB Publication |