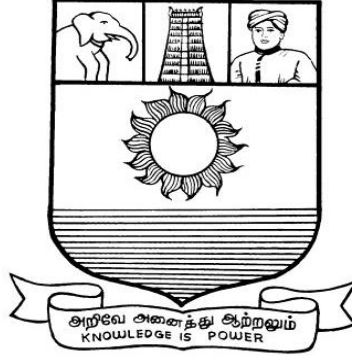


மனோன்மணியம் சுந்தரனார் பல்கலைக்கழகம்
திருநெல்வேலி – 627 012

**Manonmaniam Sundaranar University
Thirunelveli – 627 012.**



கல்விசார் நிலைக்குழுக் கூட்டம்

**MEETING OF THE STANDING COMMITTEE ON
ACADEMIC AFFAIRS HELD ON 09.02.2017**

**Syllabus for Diploma in Image Processing Technology Course offered
through Directorate of Vocational Education
Community Colleges from 2017 - 2018**

DIPLOMA IN IMAGE PROCESSING TECHNOLOGY
SCHEME OF EXAMINATION

Subject code	Title of the Paper	Credit	Hours	Passing Minimum
Semester I				
C17IP11	Foundation of Image Processing and Analysis	6	90	40/100
C17IP12	Programming in C and Data structure	6	90	40/100
C17IP13	Computer on Office Automation	6	90	40/100
C17CE10	Communicative English	6	90	40/100
C17IPP1	Lab –Programming in C and Data structure	6	90	40/100
Semester II				
C17IP21	Data Communication and Networking	6	90	40/100
C17IP22	Adobe Photoshop	6	90	40/100
C17LS23	Life Skill	6	90	40/100
C17IP24	Computer Hardware and Maintenance	6	90	40/100
C17IPP2	Lab - Adobe Photoshop	6	90	40/100
Semester III				
C17IP31	Programming in Visual Basic	6	90	40/100
C17IP32	E-Business and Accounting	6	90	40/100
C17IP33	Web Applications Development	6	90	40/100
C17IPPw	P- III Internship / industrial visit	6	90	40/100
C17IPP3	Lab - Web Applications Development	6	90	40/100
Semester IV				
C17IP41	Corel Draw	6	90	40/100
C17IP42	Fundamentals of Creative Multimedia	6	90	40/100
C17IPP4	Lab - CorelDraw	6	90	40/100
C17IPPW	Major Project and Viva-Voce	12	180	40/100

Eligibility for admission: Pass in 12thstd examination conducted by the Govt. of Tamil Nadu Board of Secondary Education, Government of Tamil Nadu or any other equivalent examination.

Examination: Passing Minimum for each paper is 40%. Classification will be done on the basis of percentage marks of the total marks obtained in all the papers and as given below:

- 40 % but less than 50 % - Third class
- 50 % but less than 60 % - Second class
- 60 % and above - First class

Syllabus

First Semester:-

- Paper 1 - Foundation of Image Processing and Analysis
- Paper II -Programming in C and Data structure
- Paper III - Computer on Office Automation
- Paper IV -Communicative English
- Paper V -Lab –Programming in C and Data structure

Second Semester:-

- Paper VI -Data Communication and Networking
- Paper VII -Adobe Photoshop
- Paper VIII - Life Skill
- Paper IX - Computer Hardware and Maintenance
- Paper X -Lab - Adobe Photoshop

Third Semester:-

- Paper XI -Programming in Visual Basic
- Paper XII -E-Business and Accounting
- Paper XIII -Web Applications Development
- Paper XIV - P-III Internship / industrial visit
- Paper XV - Lab - Web Applications Development

Fourth Semester:-

- Paper XVI - Corel Draw
- Paper XVII - Fundamentals of Creative Multimedia
- Paper XVIII -Lab - Corel Draw
- Paper XIX -Major Project and Viva-Voce

(C17IP11) FOUNDATION OF IMAGE PROCESSING AND ANALYSIS

UNIT I

Digital Image: Introduction : Motivation and Perspective - Scenes and Images - Applications - Components of Image Processing System - Visual Preliminaries : Brightness Adaptation and Contrast - Acuity and Contour - Texture and Pattern Discrimination - Shape Detection and Recognition - Perception of Colour - Image Formation : Geometric Model - Basic Transformations - Perspective Projection - Camera Calibration - Photometric Model - Digitization : Sampling - Quantization - Visual Detail in the Digital Image - Digital Image - Elements of Digital Geometry.

UNIT II

Image Processing: Image Enhancement : Contrast Intensification - Smoothing - Image Averaging - Mean Filter - Ordered Statistic Filter - Edge-preserving Smoothing - Low-pass Filtering - Image Sharpening - High-pass Filtering - Homomorphic Filtering - Restoration : Minimum Mean-square Error Restoration - Least-square Error Restoration - Constrained Least-square Error Restoration - Restoration by Singular Value Decomposition Restoration by Maximum a Posterior Estimation - Restoration by Homomorphic Filtering.

UNIT III

Image Compression: Error criterion - Lossy Compression methods - Loss-less Compression - Huffman Coding - Run-length Coding - Block Coding - Quad Tree Coding - Contour Coding - Registration : Geometric Transformation - Plane-to-plane Transformations Mapping - Problems in Discrete Domain - Stereo Imaging Algorithms - Multi-valued Image Processing : Processing of Colour Images - Processing of Satellite Images - Medical Image Processing.

UNIT IV

Image Analysis Segmentation : Region Extraction - Pixel-based Approach - Feature Thresholding - Optimum Threshold - Threshold Selection Methods - Multi-level Thresholding - Local Thresholding - Region-based Approach - Edge and Line Detection : Edge Detection - Derivative Operators - Pattern Fitting Approach - Morphologic Edge Detection - Edge Linking and Edge Following - Edge Elements Extraction by Thresholding - Edge Detector Performance - Line Detection - Corner Detection.

UNIT V

Feature Extraction : Representation - Topological Attributes - Geometrical Attributes - Some Other Properties - Description : Boundary-based Description - Region-based Description - Relationship - Recognition : Deterministic Methods - Clustering - Statistical Classification - Fuzzy Mathematical Recognition - Syntactic Recognition - Grammar - Recognition Strategy - Tree Search - Graph Matching.

Reference Books:

1. Rafael C. Gonzalez and Richard E. Woods, *"Digital Image Processing"*, Third Edition, Pearson Education, 2008.
2. Chanda B and Dutta Majumder Digital Image Processing and Analysis Prentice Hall of India Pvt Ltd (2001)
3. Adrian Low, Computer vision and Image Processing, 1991, McGraw Hill.
4. Kenneth R. Castleman, Digital Image Processing, 1995, PHI

(C17IP12) PROGRAMMING IN C AND DATA STRUCTURE

UNIT – I:

Overview of C: History Of C – Importance Of C – Basic Structure Of C Programs. Constants, Variables And Data Types. Operators and Expression Managing Input and Output Operations: Reading And Writing A Character – Formatted Input And Output. Decision Making And Branching: Simple IF, IFElse, Nesting Of IF-ELSE,ELSE-IF Ladder, Switch Statements - GOTO Statements. Decision Making And Looping: WHILE Statement- DO StatementFOR Statement

UNIT – II:

Structure and unions – Arrays: Definition – One -Dimensional Arrays – Declaration Of One - Dimensional Arrays-Initialization Of One -Dimensional Arrays- Two- Dimensional Arrays – Initializing Two Dimensional Arrays – Multidimensional Arrays-Dynamic Arrays.

UNIT – III:

Character Arrays And Strings: Introduction – Declaring And Initializing String Variables - Reading Strings From Terminal – Writing Strings To Screen – String Handling Functions – pointers – Files – opening/closing files – file – 12 input/output – error handling during I/O operations – Random access to files – command line arguments.

UNIT – IV:

Data structures : Definition – Categories of data structures - Arrays: Array operations –Merging of two arrays - Two dimensional arrays. Stacks : Definition - Operations on stack - Representation of a stack as an array - Representation of a stack as an Linked list - Evaluation of expression : Infix to Prefix conversion – Infix to Postfix conversion. Queues : Definition - Operations on Queue - Representation of Queue as an array - Representation of Queue as an linked list – Circular Queues. Linked list : Definition - Operations on linked list – Circular list - Doubly linked list - Operations on doubly linked list - Polynomial addition.

UNIT – V:

Trees : Definition & Terminology - Binary trees - Traversal of a binary tree: In order, Pre order and Post order. Representation of a Binary trees in memory – Linked representation of binary trees – array representation of binary trees - Operations on a Binary search tree : Searching Operation - Insertion Operation and Deletion operation. Forest Tree : Conversion of a Forest Tree to Binary Tree - Graphs : Definition & Terminology - Graph representations - Graph travels : Depth first search & Breadth first search. Shortest path Algorithm (Using Dijkstra's Algorithm).

Reference Books:

- 1) “Programming in ANSI C” E.Balgurusamy
- 2) “Data Structures through C” Yashavant Kanethar

(C17IP13) COMPUTER ON OFFICE AUTOMATION

Unit 1

Introduction to Computer: Definition -History & Generation of Computer - Applications of Computer – Advantages of Computer – Characteristics of Computer: Speed, Storage, Versatility and Diligence – Hardware & Software - Types of Computer: On the Basis of Working - Analog, Digital & Hybrid, On the Basis of Size - Main frame, Mini Computer, Super Computer, Work station, Micro Computer, Desktop Computer, Laptop Computer, Palmtop Computer; Processor – XT, AT & Pentium(i3, i5, i7); **Memory:** Units, Representation, Types - Primary memory: RAM, ROM, PROM, EPROM, EEPROM, DDR Secondary memory: Hard disk, Floppy disk, CD, DVD, Blue ray Disc, Pen Drive Magnetic tape & Zip disk – **CPU:** Components of CPU - Mother board, Hard disk, RAM, ROM, Processor, SMPS & Connecting wire - Graphics Card, Sound Card, Network Card – Modem; **Input, Output devices:** Keyboard, Mouse, Scanner, Digital Camera, Joystick, Pen drive, Monitor, Printer, Plotter - Floppy Drive – Connecting port – Serial, parallel – USB port. **Computer Networks:** Data Communications –Types of Computer Networks – Local Area Networks & Wide Area Networks.

Unit 2

Definition of Operating System - Functions of OS - Types of OS: Single user, Multi-User, multi-task, RTOS, Single-user, Multi-tasking – **Windows Desk top** - **GUI:** Definition, Standards, Cursors/Pointers, Icons, GUI Menus, GUI-Share Data – **Desktop icons and their functions:** My computer, My documents, Network neighbourhood, Recycle Bin, Quick launch tool bar, System tray, Start menu, Task bar – **Dialog Boxes:** List Box, Spin Control Box, Slide, Drop-down list, Radio button, Check box, Text box, **Task Bar** - System Tray - Quick launch tool bar - Start button - **Parts of Windows** -Title bar-Menu bar - Scroll bar- Status bar, Maximize, Minimize, close and Resize & Moving a Window – **Windows** - Start Menu –Help Menu- Preview Menu; **Logoff & Shutdown** – **Keyboard Accelerators:** Key board short keys or hotkeys – **Working with Notepad & Wordpad:** Opening & Saving files, Formatting, Printing, Inserting objects, Finding & replacing text, Creating & Editing Images with Microsoft paint, using the Calculator – Personalising Windows.

Unit 3

MS Word and Open Office – Writer: MS Word - Working with Documents -Opening & Saving files, Editing text documents, Inserting, Deleting, Cut, Copy, Paste, Undo, Redo, Find, Search, Replace, Formatting page & setting Margins, Converting files to different formats, Importing & Exporting documents, Sending files to others, Using Tool bars, Ruler, Using Icons, using help, **Formatting Documents** - Setting Font styles, Font selection- style, size, colour etc, Type face - Bold, Italic, Underline, Case settings, Highlighting, Special symbols, Setting Paragraph style, Alignments, Indents, Line Space, Margins, Bullets & Numbering. **Setting Page style** - Formatting Page, Page tab, Margins, Layout settings, Paper tray, Border & Shading, Columns, Header & footer, Setting Footnotes & end notes – Shortcut Keys; Inserting manual page break, Column break and line break, Creating sections & frames, Anchoring & Wrapping, Setting Document styles, Table of Contents, Index, Page Numbering, date & Time, Author etc., Creating Master Documents, Web page. **Creating Tables**- Table settings, Borders, Alignments, Insertion, deletion, Merging, Splitting, Sorting, and Formula, **Drawing** - Inserting ClipArts, Pictures/Files etc., **Tools** – Word Completion, Spell Checks, Mail merge, Templates, Creating contents for books, Creating Letter/Faxes, Creating Web pages, Using Wizards, Tracking Changes, Security, Digital Signature. **Printing Documents** – Shortcut keys.

Unit 4 –

MS Excel and Open Office – Calc: MS Excel: Spread Sheet & its Applications, Opening Spreadsheet, Menus - main menu, Formula Editing, Formatting, Toolbars, Using Icons, Using help, Shortcuts, Spreadsheet types. Working with Spreadsheets- opening, Saving files, setting Margins, Converting files to different formats (importing, exporting, sending files to others), Spread sheet addressing - Rows, Columns & Cells, Referring Cells & Selecting Cells – Shortcut Keys. **Entering & Deleting Data**- Entering data, Cut, Copy, Paste, Undo, Redo, Filling Continuous

rows, columns, Highlighting values, Find, Search & replace, Inserting Data, Insert Cells, Column, rows & sheets, Symbols, Data from external files, Frames, Clipart, Pictures, Files etc, Inserting Functions, Manual breaks, **Setting Formula** - finding total in a column or row, Mathematical operations (Addition, Subtraction, Multiplication, Division, Exponentiation), Using other Formulae. **Formatting Spreadsheets**- Labelling columns & rows, Formatting- Cell, row, column & Sheet, Category - Alignment, Font, Border & Shading, Hiding/Locking Cells, Anchoring objects, Formatting layout for Graphics, Clipart etc., Worksheet Row & Column Headers, Sheet Name, Row height & Column width, Visibility - Row, Column, Sheet, Security, Sheet Formatting & style, Sheet background, Colour etc, Borders & Shading – Shortcut keys. **Working with sheets** – Sorting, Filtering, Validation, Consolidation, and Subtotal. **Creating Charts** - Drawing. **Printing. Using Tools** – Error checking, Spell Checks, Formula Auditing, Creating & Using Templates, Pivot Tables, Tracking Changes, Security, Customization.

Unit 5

MS Power Point and Open Office-Impress: MS Power point: Introduction to presentation – Opening new presentation, Different presentation templates, Setting backgrounds, Selecting presentation layouts. **Creating a presentation** – Setting Presentation style, Adding text to the Presentation. **Formatting a Presentation** - Adding style, Colour, gradient fills, Arranging objects, Adding Header & Footer, Slide Background, Slide layout. Adding Graphics to the Presentation- Inserting pictures, movies, tables etc into presentation, Drawing Pictures using Draw. **Adding Effects to the Presentation**- Setting Animation & transition effect. **Printing Handouts**, Generating Standalone Presentation viewer.

Internet and Web Browsers: Definition & History of Internet - Uses of Internet - Definition of WebAddressing-URL-Different types of Internet Connections; Dial up connection, Broad band (ISDN, DSL, Cable), Wireless (Wi-Fi, WiMax, Satellite, Mobile) naming convention, browsers and its types, internet browsing, searching - Search Engines - Portals - Social Networking sites- Blogs - viewing a webpage, downloading and uploading the website; Creating an email-ID, e-mail reading, saving, printing, forwarding and deleting the mails, checking the mails, viewing and running file attachments, addressing with cc and bcc.

Reference Books:

1. Fundamentals of computers - V.Rajaraman - Prentice- Hall of india
2. Microsoft Office 2007 Bible - John Walkenbach,Herb Tyson,Faithe Wempen,cary N.Prague,Michael R.groh,Peter G.Aitken, and Lisa a.Bucki -Wiley India pvt.ltd.
3. Computer Fundamentals - P. K. Sinha Publisher: BPB Publications
4. Operating System Concepts - by Abraham Silberschatz, Greg Gagne, and Peter Baer Galvin Publisher: Wiley; 8 edition (July 29, 2008)
5. Computer Networking 6th ed. - J.F. Kurose and K.W. Ross - Pearson;
6. Data Communications and Networking - Behrouz A. Forouzan, 2nd Edition - McGraw Hill Education;
7. Discovering the Internet: Complete - Shelly Cashman 4th Edition - Course Technology
8. Computer & Internet Basics Step-by-Step - Etc-end the Clutter - Infinity Publishing

(C17CE10) COMMUNIVATIVE ENGLISH

Unit I: Learning context

Concept of learning – Learning style –Grammatical framework – sentence framing – paragraph and texts

Unit II: Reading

Basic concept – Purposes of reading-Decoding-Reading materials – Barriers of reading

Unit III: Writing

Basic concept-Writing style-Terminology-stages-English spelling and punctuation – Written texts

Unit IV: Speaking

Language functions-Conversation- Features of spoken English – Types of English course: functional English, English literature, advance English – Phonetic

Unit V: Developing Communication Skills

Meaning –Classroom presence- Features of developing learning process- Practical skills and Listening- uses of communicative English

Reference Books:

1. Raman,m.&S.Sharma (2011) communication skills,OUP,New Delhi: India
2. Lata,P.&S.Kumar(2011) communication skills,OUP,New Delhi: India,
- 3.Leech,G&J.Svartvik(2002) A communicative grammar of English,Pearson,India,
4. Sethi,J. and P.V. Dharmija (2007) A course in Phonetics and spoken English.Second edition, Prentice hall: New Delhi

(C17IPP1) Lab – Programming in C and Data structure

Semester II

(C17IP21) DATA COMMUNICATION AND NETWORKING

UNIT I

Introduction: Data Communications, Networks, The Internet, Protocols and Standards, Network Models, Layered Tasks, The OSI Model, Layers in the OSI Model, TCP/IP Protocol Suite, Addressing, Physical Layer and Media, Data and Signals, Analog and Digital, Periodic Analog Signals, Digital Signals, Transmission impairment, Data Rate Limits, Performance, Digital Transmission, Digital-to-Digital Conversion, Analog-to-Digital Conversion, Bandwidth utilization: Multiplexing and Spreading, Multiplexing, Spread Spectrum, Transmission Media, Guided Media, Unguided Media: Wireless, Switching, Circuit-Switched Networks, Datagram Networks, Virtual-Circuit Networks, Structure of a Switch, Using Telephone and Cable Networks for Data Transmission, Telephone Networks, Dial-up Modems, Digital Subscriber Line, Cable TV Networks, Cable TV for Data Transfer.

UNIT II

Error Detection and Correction, Introduction, Block Coding, Linear Block Codes, Cyclic Codes, Checksum, Data Link Control, Framing, Flow and Error Control, Protocols, Noiseless Channels, HDLC, Point-to-Point Protocol, Multiple Access, Random Access, Aloha, Controlled Access, Channelization, IEEE Standards, Standard Ethernet, Changes in the Standard, Fast Ethernet, Gigabit Ethernet, IEEE 802.11, Bluetooth. Connecting LANs, Backbone Networks, and Virtual LANs, Connecting Devices, Backbone Networks, Virtual LANs, Cellular Telephony, Satellite Networks, Sonet/SDH, Architecture, Sonet Layers, Sonet Frames, STS Multiplexing, Sonet Networks, Virtual Tributaries, Virtual-Circuit Networks: Frame Relay and ATM, Frame Relay, ATM, ATM LANs

UNIT III

Network Layer: Logical Addressing, IPv4 Addresses, IPv6 Addresses, Network Layer: Internet Protocol, Internetworking, IPv4, IPv6, Transition from IPv4 to IPv6, Network Layer: Address Mapping, Error Reporting and Multicasting, Address Mapping, ICMP, IGMP, ICMPv6, Network Layer: Delivery, Forwarding and Routing, Delivery, Forwarding, Unicast Routing Protocols, Multicast Routing Protocols

UNIT IV

Transport Layer: Process-Process Delivery: UDP, TCP and SCTP, Process-to-Process Delivery, User Datagram Protocol (UDP), TCP, SCTP, Congestion Control and Quality of Service, Data Traffic, Congestion, Congestion Control, Two Examples, Quality Service, Techniques to improve QoS, Integrated Services, Differentiated Services, QoS in Switched Networks

UNIT V

Application Layer: Domain Name System, Name Space, Domain Name Space, Distribution of Name Space, DNS in the Internet, Resolution, DNS Messages, Types of Records, Registrars, Dynamic Domain Name System (DDNS), Encapsulation, Remote Logging, Electronic Mail and File Transfer, Remote Logging, Telnet, Electronic Mail, File Transfer

TEXT BOOKS:

1. Data Communications and Networking, Fourth Edition by Behrouza A. Forouzan, TMH.
2. Computer Networks, A.S. Tanenbaum, 4th edition, Pearson education.

Reference Books:

1. Introduction to Data communications and Networking, W. Tomasi, Pearson education.
2. Data and Computer Communications, G.S. Hura and M. Singhal, CRC Press, Taylor and Francis Group.
3. An Engineering Approach to Computer Networks - S. Keshav, 2nd Edition, Pearson Education.
4. Understanding communications and Networks, 3rd Edition, W.A. Shay, Cengage Learning.

(C17IP22) ADOBE PHOTOSHOP

Unit 1

About Photoshop : Navigating Photoshop - Menus and panels - Opening new files - Opening existing files - Getting Started with Photoshop : Exploring the Toolbox - The New CS4 Applications Bar & the Options Bar - Exploring Panels & Menus - Creating & Viewing a New Document - Customizing the Interface - Setting Preferences - Working with Images: Zooming & Panning an Image - Working with Multiple Images, Rulers, Guides & Grids - Undoing Steps with History - Adjusting Color with the New Adjustments Panel - The New Masks Panel & Vibrance Color Correction Command - The New Note Tool & the Save for Web & Devices Interface - The New Auto-Blend & Auto-Align Layers Commands - The New 3D Commands.

Unit 2

RESIZING & CROPPING IMAGES : Understanding Pixels & Resolution - The Image Size Command - Interpolation Options - Resizing for Print & Web - Cropping & Straightening an Image - Adjusting Canvas Size & Canvas Rotation - WORKING WITH BASIC SELECTIONS : Selecting with the Elliptical Marquee Tool - Using the Magic Wand & Free Transform Tool - Selecting with the Regular & Polygonal Lasso Tools - 4. Combining Selections - Using the Magnetic Lasso Tool - Using the Quick Selection Tool & Refine Edge - Modifying Selections

Unit 3

GETTING STARTED WITH LAYERS : Understanding the Background Layer - Creating, Selecting, Linking & Deleting Layers - Locking & Merging Layers - Copying Layers, Using Perspective & Layer Styles - Filling & Grouping Layers - Introduction to Blending Modes - Blending Modes, Opacity & Fill - Creating & Modifying Text PAINTING IN PHOTOSHOP : Using the Brush Tool - Working with Colors & Swatches - Creating & Using Gradients - Creating & Working with Brushes - Using the Pencil & Eraser Tools - Painting with Selections.

Unit 4

PHOTO RETOUCHING : The Red Eye Tool - The Clone Stamp Tool - The Patch Tool & the Healing Brush Tool - The Spot Healing Brush Tool - The Color Replacement Tool - The Toning & Focus Tools - Painting with History - INTRODUCTION TO COLOR CORRECTION : Color Spaces & Color Modes - The Variations Command - The Auto Commands - Adjusting Levels - Adjust Curves, Non-Destructively, with Adjustment Layers - : USING QUICK MASK MODE - Quick Mask Options - Painting a Selection - Saving & Removing a Selection from the Background

Unit 5

WORKING WITH THE PEN TOOL : Understanding Paths & the Pen Tool - Creating Straight & Curved Paths - Creating Combo Paths - Creating a Clipping Path - CREATING SPECIAL EFFECTS: Getting Started with Photoshop Filters - Smart Filters - Creating Text Effects - Applying Gradients to Text - EXPORTING YOUR WORK : Saving with Different File Formats - Saving for Web & Devices - Printing Options.

Reference Books:

http://photoshopcafe.com/csc/PhotoshopCAFE_CS6Superguide.pdf

<http://nettkringkasting.no/~wictor/Tutorials/Photoshop/Photoshop%206%20Classroom%20in%20a%20Book.pdf>

(C17LS23) LIFE SKILL

UNIT- I ATTITUDE : Positive thinking – Goal setting – Problem Solving and Decision making – Leadership and Team Work.

UNIT- II COMMUNICATION SKILLS: Oral communication: Concept of English language – Fluency – Verbal communication in official and public situations.

UNIT-III COMMUNICATION SKILLS: Written Communication: Comprehension – Writing a formal letter like application for Job, enquiry, reply, complaint and such others – preparation of Resume, Curriculum Vitae.

UNIT- IV COMPUTING SKILLS – 1: Introduction to Computers, its various components and their respective functions – Memory storage devices – Microsoft (MS) Office – MS Word.

UNIT - V COMPUTING SKILLS – 2 Internet Basics – Origin of Internet – MODEM – ISP – Upload – Download – e-mail – Origin of worldwide web (www) Browsers – Search engines.

Reference book:

Life skill, Manonmaniam Sundaranar University Publications Division (2011)

(C17IP24) COMPUTER HARDWARE AND MAINTANANCE

UNIT – I INSIDE THE PC

Introduction: Evolution of Computer – Block diagram of Pentium - Inside the Pentium – Parts - Mother board, chipset, expansion slots, memory, Power supply, drives and connectors - **Systems:** Desktop, Lap Top, Specification and features - Comparison table. Server - system – IBM server families, Sun Server, Intel processor etc – Workstation - **Mother Board:** Evolution – Different forms of mother boards – Riser - Architectures. Intel, AMD and VIA motherboards. **Chipsets:** Introduction – 945 chipset - **Bus Standards:** Introduction – ISA Bus – PCI Bus – PCI Express, USB, High speed Bus, – Pin details and Architecture. - **Bios-setup:** Standard CMOS setup, Advanced BIOS setup, Power management, Advanced chipset features, PC Bios communication – upgrading BIOS, Flash, BIOS –setup - **Processors:** Introduction – Pentium IV, Hyper threading, dual core technology, Core2Duo technology — AMD Series, Athlon 2000, Xeon processor. Comparison tables. Pentium Pin details, Itanium Processor - Pentium packaging styles.

UNIT II MEMORY AND DAUGHTER BOARDS

Memory: Introduction - Main memory – Evolution - DRAM – EDO RAM - SDRAM – DDR RAM versions – IT RAM – Direct RDRAM – Memory Chips (SIMM, DIMM, RIMM)- Extended – Expanded – Cache - Virtual Memory Causes of false memory errors. **Graphic Cards:** Introduction - Definition and Layout of Components in Graphics card – Graphics Processor – Video memory – RAMDAC – Driver Software – 3D – Video capture card installation. **Sound Cards:** Introduction - Definition of Various Components – Connectivity – Standards – A3D – EAX – MIDI – General MIDI – PCI Audio – USB Sound – MP3 – SDMI. **Displays:** Introduction – CRT – Anatomy – Resolution – refresh rate – interlacing – Digital CRT's – Panel Displays – Introduction – LCD Principles – Plasma Displays – TFT displays. **Display adapter:** Introduction - VGA and SVGA cards, flickering, Demagnetizing and precautions . **Keyboard, and Mouse and barcode scanner:** Introduction – Keyboard , wireless Keyboard – Signals – operation - troubleshooting - Mouse types, connectors , Serial mouse, PS/2 mouse and Optical mouse operation – Signals – Installation – barcode scanner - operation

UNIT III DISK DRIVES

Hard Disk: Introduction – Construction – Working Principle - Specification of IDE, EIDE, Ultra ATA, Serial ATA, SCSI, Disk Array controller, solid state drive. HDD Installation – Partition – Formatting. Troubleshooting hard disk drives; problem diagnosis, typical problems and troubleshooting; Hard disk drive, components, Head Actuator mechanism Head positioning

of a voice coil base system. **CD/DVD ROM:** Introduction – Basics, Working principle – various formats – CD-R, CD-RW, DVD: Introduction – Formats – Technology – DVDROM, DVD Video, DVD Audio – Recordable formats – DVD-R, DVD-RW, DVD-RAM **Special type of drives:** Zip drive, Memory stick, USB-flash drive, iPod Dock version and installation. **I/O Ports:** Serial – Parallel – USB – Game Port – Blue tooth interface, IR connector, Signal specification problems with interfaces.

UNIT IV I/O DEVICES AND POWER SUPPLY

Printers: Introduction – Types of printers – Dot Matrix – Inkjet – Laser Operation – Construction – Features – Troubleshooting Dot matrix, Inkjet and laser printer problems. **Modem and Router:** Modem - Introduction – Operation – Types – Installation – Router - introduction. **Scanners:** Introduction – operation – Scan Resolution - Color Scanners – Scan modes – File formats - Simple problems and troubleshooting. **Digital Camera:** Introduction – Operation – Features. **Web Camera, Biometric devices:** Thump scanner, Iris scanner, speech synthesizer - operation and installation - Trouble shooting. **SMPS:** Principles of Operation – Block Diagram – AT & ATX Power Supply, connector specifications and protection.

UNIT V TROUBLE SHOOTING PC

Room Preparation and Power supply: Location – Pollution – Air-conditioning – Power Supply – Voltage Regulators – Servo Stabilizers – UPS, Surge suppressors and spike isolators. **Installation practice:** Routine checks - Preventive maintenance - problem causes, peripheral and general precautions. **Faults elimination process:** Dead system spurious problem - security failures heartbeats and multiple faults - Systematic trouble shooting – Symptoms observation – analysis - Fault diagnosis and fault rectification. **POST:** Definition – IPL hardware – POST Test sequence – beep codes and error messages. **Diagnostic Software and Viruses:** Computer Viruses – Precautions – Anti-virus Software – identify the signature of viruses – Firewalls and latest diagnostic softwares.

Reference Books:

1. IBM PC and CLONES B.Govindrajalu Tata McGrawhill Publishers
2. Computer Installation and Servicing D.Balasubramanian
3. 3. Computer Installation and Troubleshooting Tata McGraw Hill, 2005 M.Radhakrishnan ISTE- Learning Materials 2001
4. The complete PC upgrade and Maintenance Mark Minasi BPB Publication
5. Inside the PC Peter Norton Tech Media
6. Troubleshooting, Maintaining and Repairing PCs Stephen J Bigelow
7. Basic Refrigeration and AirConditioning Tata MCGraw Hill Pub 2001 Ananthanrayanan P.N Tata McGrawhill Publishers

(C17IPP2) LAB – ADOBE PHOTOSHOP

Semester – III

(C17IP31) PROGRAMMING IN VISUAL BASIC

Unit 1.

Beginning Visual Basic :What is Visual Basic - Features of Visual Basic - The Visual Basic Philosophy - The integrated development environment - The anatomy of Form - Project Types

Unit 2

Dealing with Data :Operators – Variables - Declaring Variables - Types Of Variables - Data types - Constants - Arrays :- Declaring Arrays - Specifying Arrays - Multidimensional Arrays - Dynamic Arrays - Arrays of Arrays.

Unit 3

Writing Code:Collections - Procedures – Subroutines – Functions - Calling Procedures - Object Browser - Creating Classes & Object - I/O Statements - Control Flow Statements - If—Then - If-then-else - Nested Control Statements - Select-Case - Loop Statements - Do—Loop - For—Next - While-Wend
3.11Exit Statement

Unit 4

Creating an Application Using Controls : What is on the toolbar - Textbox Control - Picture Box - Image Box- Label Box – Frame - List Box - Option Button - Combo Box - Command Button - Check Box - The Drive , Directory, File List Controls- The Line & Shape Control- Scroll Box – Data - Timer

Unit 5.

Multiple Document Interface & Menus: Why MDI Forms - Features Of an MDI forms - Loading MDI forms & child forms - Creating an simple MDI forms - Accessing MDI forms - Creating MENUS - POP-UP MENUS - **DATA Access Controls** - JET database Engine – ADODC - DAO Data Control - ODBC Data Source Administrator - DATA REPORT

Reference Books:

1. Programming with VB 6.0 –Mohammed Azam
2. Mastering VB 6.0
3. Beginning VB 6.0 –Peter Wrights

(C17IP32) E-BUSINESS AND ACCOUNTING

UNIT 1.

E-BUSINESS : Introduction, E-Commerce – Definition, History of E-commerce, Difference between E – Commerce and E - Business. Comparison of traditional commerce and e-commerce Advantages/ Disadvantages of e-commerce,. E-Commerce business models – major B to B, B to C model, Consumer-to Consumer (C2C), Consumer-to-Business(C2B) model, Peer to-Peer (P2P) model – emerging trends. web auctions, virtual communities, portals, e-business revenue models.

UNIT 2

PAYMENT AND E-COMMERCE SECURITY : Electronic payment systems: Credit cards – Debit cards -online transactions. Security Threats in E-commerce: vulnerability in client side, server side and in communication medium-Technology and solutions: Encryption, SSL VPN, firewalls-server and client side protection. SET: Key Technologies in Secure Electronic Transactions.

Unit 3

GETTING STARTED WITH TALLY : Meaning of Tally software – Features – Advantages - Required Hardware, Preparation for installation of tally software - installation. Items on Tally screen: Menu options, creating a New Company, Basic Currency information, Other information, Company features and Inventory features.

Unit 4

CONFIGURING TALLY : General Configuration, Numerical symbols, accts/inv info – master configuration -voucher entry configuration. **Working in Tally**: Groups, Ledgers, writing voucher, different types of voucher, voucher entry Problem on Voucher entry -Trail Balance, Accounts books, Cash Book, Bank Books, Ledger Accounts, Group Summary, Sales Register and Purchase Register, Journal Register, Statement of Accounts, & Balance Sheet.

Unit 5

REPORTSIN TALLY: Generating Basic Reports in Tally – Financial Statements – Accounting Books and Registers – Inventory Books and Registers – Exception reports – printing reports – Types of Printing - Configuration of Options – Printing Format.

Reference books :

1. Raydu – E Commerce, HPH
2. Suman. M – E Commerc & Accounting – HPH
3. Kalakota Ravi and A. B. Whinston : *Frontiers of Electronic Commerce*, Addison Wesley
4. Watson R T : *Electronic Commerce – the strategic perspective*. The Dryden press
5. Amrutha Gowry & Soundrajana, E – Business & Accounting, SHBP.
6. C.S.V Murthy- E Commerce, HPH

7. Agarwala K.N and Deeksha Ararwala: *Business on the Net – Whats and Hows of E-Commerce*
8. Agarwala K. N. and Deeksha Ararwala : *Business on the Net – Bridge to the online store front*, Macmillan, New Delhi.
9. Diwan / S. Sharma – E – Commerce
10. Srivatsava: E.R.P, I.K. International Publishers
11. Diwan, Prag and Sunil Sharma, *Electronic Commerce – A manager guide to E-business*, Vanity Books International, Delhi
12. Tally for Enterprise Solutions

(C17IP33) WEB APPLICATIONS DEVELOPMENT

Unit 1

Web Design Principles: Basic principles involved in developing a web site - Planning process - Five Golden rules of web designing - Designing navigation bar - Page design - Home Page Layout - Design Concept. Basics in Web Design: Brief History of Internet - What is World Wide Web - Why create a web site - Web Standards - Audience requirement.

Unit 2

Introduction to HTML : What is HTML - HTML Documents - Basic structure of an HTML document - Creating an HTML document - Mark up Tags - Heading-Paragraphs - Line Breaks - HTML Tags.

Elements of HTML: Introduction to elements of HTML - Working with Text - Working with Lists, Tables and Frames - Working with Hyperlinks, Images and Multimedia - Working with Forms and controls.

Unit 3

Introduction to Cascading Style Sheets : Concept of CSS - Creating Style Sheet - CSS Properties - CSS Styling(Background, Text Format, Controlling Fonts) - Working with block elements and objects - Working with Lists and Tables - CSS Id and Class - Box Model(Introduction, Border properties, Padding Properties, Margin properties) - CSS Advanced(Grouping, Dimension, Display, Positioning, Floating, Align, Pseudo class, Navigation Bar, Image Sprites, Attribute sector) - CSS Color - Creating page Layout and Site Designs.

Unit 4

Fundamentals of PHP Development - Various Data Types - Advanced PHP Functions – Classes – Objects - Advanced OOPS in PHP - Various Database concepts - Cookies and Session Management - How to work with forms and system file - Error Handling - Secure PHP Programming - Performance Optimization of PHP Applications - Cake PHP – Debugger - Model View Controller (MVC)

Unit 5

Introduction to Web Publishing or Hosting : Creating the Web Site - Saving the site - Working on the web site - Creating web site structure - Creating Titles for web pages - Themes- Publishing web sites.

Text Books

1. Kogent Learning Solutions Inc. HTML 5 in simple steps Dreamtech Press
2. A beginner's guide to HTML NCSA,14 May,2003
3. Murray, Tom/Lynchburg Creating a Web Page and Web Site College,2002
4. Murray, Tom/Lynchburg Creating a Web Page and Web Site College,2002

Reference Books

1. Web Designing & Architecture-Educational Technology Centre, University of Buffalo
2. Steven M. Schafer HTML, XHTML, and CSS Bible, Wiley India
3. John Duckett Beginning HTML, XHTML, CSS, and JavaScript Wiley India

(C17IPPw) Internship / Industrial visit

(C17IPP4)Lab – Web Applications Development

Semester - IV

(C17IP41) COREL DRAW

Unit 1.

Basics of CorelDraw: Introduction-Getting Started-Creating A New File - Title Bar-Menu Bar-Work Area-Printable Page-Property Bar-Page Counter Bar-Colour Palette-Toolbox-Status Bar-Drawing Figures-Lines-Ellipse-Circles-Rectangle-Square-Polygon-Saving-Closing-Opening-Views-Normal View-Preview-Wire Frame View-Draft View-Zoom-View Manager-Creating a View.

Unit 2.

Drawing : Introduction - Toolbox-Selecting an Object-Resizing an Object-Moving an Object- Changing the Shape-Combining Two Objects-Skewing-Welding the Objects-Blending-Curve Lines-Straight Lines-Continuing a Line-View Mode-Changing-Media Tool-Rotating An Object-Grouping-Fill Tool Fly Out-Filling-Spray Mode.

Unit 3.

Text : Introduction-Text Tool-Entering Artistic Text-Entering Paragraph Text-Converting Text-Formatting Text-Changing the Font Size-Arranging Objects-Ordering The Objects-Changing the Font-Bullets-Decorating the Text-Webdings-Text Editor-Opening-Changing the Alignment-

Type Style-Spell Checking-Grammer-Searching Synonyms-Find-Replace-Editing-Kerning-Formatting Characters.

Unit 4.

Image : Bitmap Images-Vector Image-Resizing-Rotating-Skewing-Moving-Cropping-Importing Images-Adding Special Effects-Converting to Bitmap-Exporting Images.

Unit 5.

Page Layout : Changing the Page Size-Changing the Layout-Applying Styles-Applying Bitmaps to the - Background - Changing the Background-Adding a Page Frame-Moving Between Pages.

Reference Books:

<http://www.mr-dt.com/websiteprintablepdfs/howtousecoreldraw.pdf>

<http://product.corel.com/help/CorelDRAW/540238885/Main/EN/User-Guide/CorelDRAW-X8.pdf>

http://gtu.ge/Arch/Faculty/Multimedia/Resources/2_Corel/Languages/EN/Help/CorelDRAW%20Graphics%20Suite%20X3.pdf

(C17IP42) FUNDAMENTALS OF CREATIVE MULTIMEDIA

UNIT I

INTRODUCTION TO MULTIMEDIA - Introduction : Definition of multimedia, Multimedia Basics, Where to use Multimedia, Multimedia Elements Multimedia Applications, Virtual Reality, Delivering Multimedia. Multimedia Systems Architecture: Multimedia Workstation Architecture, High resolution Graphic displays, Multimedia Architecture Based on interface bus, Network architecture for Multimedia systems. Evolving Technologies For Multimedia Systems: Hypermedia Documents, Hypertext, Hyper Speech, HDTV and UDTV, 3D Technologies and Holography, Defining Objects for Multimedia System:, Text, Images, Audio and Voice, FullMotion and Live Video, Multimedia Data Interface Standards, File formats for multimedia systems, Video processing standards. Multimedia Software :Overview of Multimedia Software Tools, Open Source Replacements, Multimedia OS, Multimedia Authoring, Some Useful Editing and Authoring Tools, VRML, OpenGL, Windows and Open Source API.

UNIT II

DEFINING OBJECTS FOR MULTIMEDIA SYSTEMS - Text: About Fonts and Faces, Using Text in Multimedia, Hypermedia and Hypertext, Using Hypertext, Hypermedia Structures, Hypertext Tools. Images: Making Still Images, Bitmaps, 1 bit images, 8-bit gray level images, 8-bit color images, Dithering, 24 bit color images, Vector Drawing, 3-D Drawing and Rendering, Color, Understanding Natural Light and Color, Computerized Color, Color Palettes, Color Look-up table. Image Processing, Image acquisition, Image enhancement. Color image processing. Sound : The Power of Sound, Digital Audio, Making Digital Audio Files, MIDI Audio, MIDI vs.

Digital Audio, Multimedia System Sounds, Adding Sound to Your Multimedia Project , Audio Recording, Keeping Track of Your Sounds, Audio CDs, Sound for Your Mobile, Sound for the Internet. Animation, the Power of Motion, Principles of Animation, Animation by Computer, Animation Techniques. animation using OpenGL Video: Using Video, How Video Works and Is Displayed, Analog Video, Digital Video, Displays, Digital Video Containers, Codec, Video Format Converters, Obtaining Video Clips, Shooting and Editing Video.

UNIT III

MULTIMEDIA DATA AND STANDARDS - Data Compression: Need for Data compression, General Data compression Scheme, Compression standards, Non-lossy compression for images, Lossy compression for Photographs and video, Hardware Vs Software Compression. Compression Schemes and standards:(Only Concepts of) Binary image compression, Color, Gray Scale and Still-video image compression, JPEG, video image compression, Multimedia Standards for Video, Requirements for Full-motion Video Compression, MPEG, Audio compression, Fractal compression, advantages / disadvantages. Data and File Format Standards: Popular File Formats, RTF, RIFF, GIF, PNG, TIFF, MIDI, JPEG, JFIF, AVI, WAV, BMP, WMF, MIX, MPEG standards. TWAIN. Multimedia Databases, Storage and Retrieval, Database Management systems, Database Organization and Transaction management for multimedia systems. Multimedia Information Sharing and Retrieval - Social Media Sharing UserGenerated Media Content Sharing - Media Propagation in Online Social Networks. Content-Based Retrieval in Digital Libraries

UNIT IV

MULTIMEDIA DEVICES AND MAKING MULTIMEDIA - Multimedia input/output Technologies: Limitations of Traditional input devices, Multimedia input output devices, PEN input, Working of Electronic Pen, Video and image display systems, Video display technology standards, CRT, display terminology, Flat panel display system. Print Output, image, audio and video Technologies: Comparison of printing technologies, Laser printing, Dye sublimation printer, Color printing technology issues. Image scanners, types, Digital voice and audio, Voice recognition systems, Digital Camera, video frame grabber, video and still image processing, video, camera, full-motion video controllers, video capture board. Making Multimedia: The Stages of a Multimedia Project, Creativity, Organization, Communication, Hardware, Software, Text Editing and Word Processing Tools, OCR Software, Painting and Drawing Tools, 3-D Modeling and Animation Tools, ImageEditing Tools, Sound-Editing Tools, Animation, Video, and Digital Movie Tools, Authoring Systems, Making Instant Multimedia, Types of Authoring Tools. Multimedia Skills: The Team, Project Manager, Multimedia Designer, Interface Designer, Writer, Video Specialist, Audio Specialist, Multimedia Programmer, Producer of Multimedia for the Web.

UNIT V

MULTIMEDIA DESIGN, MULTIMEDIA FOR INTERNET - Designing and Producing, Designing, Designing the Structure, Designing the User Interface, Producing, Tracking, Copyrights, Virtual reality designing and modeling. The Internet and Multimedia : The Bandwidth Bottleneck, Internet Services, MIMETypes, Multimedia on the Web, Web Page Makers and Site Builders, Plug-ins and Delivery Vehicles. Designing for the World Wide Web:

Developing for the Web, Small-Device Workspace, text and images for the Web, Clickable Buttons, Client-Side Image Maps, Sound for the Web, Animation for the Web, and Video for the Web, HTML5 Video - Plug-ins and Players. Multimedia Communication and applications, Study of Multimedia networking, Quality of data transmission, Media on demand, Multimedia Over Wireless and Mobile Networks - Media Entertainment, web-based applications, e-learning and education Cloud Computing for Multimedia Services - Cloud-Assisted Media Sharing

Text Books:

1. Fundamental of Multimedia Ze- Nian Li and M. S. Drew. Pearson Education Second edition 2014
2. Multimedia: Making It Work. Tay Vaughan Tata-McGrawHill Eighth Edition
3. Multimedia systems Design. Prabhat k.Andleigh, Kiran Thakra PHI.
4. "Multimedia Computing, Communication and Applications",,. Ralf Steinmetz and Klara Nahrstedt Pearson Education
5. Multimedia Communication Systems: Techniques, Standards, and Networks K.R. Rao TMH

Reference Books:

1. Computer Graphics Multimedia and Animation, Malay K. Pakhira PHI second edition
2. Principles of Multimedia, RanjanParekh TMGH, New Delhi
3. Multimedia Systems John F. Koegel Buford Pearson Education
4. Multimedia Technology & Applications, David Hillman Galgotia Publications Pvt Ltd.

(C17IPP4) LAB - CorelDraw

(C17IPPW) MAJOR PROJECT AND VIVA-VOCE