Manonmaniam Sundaranar University
Thirunelveli – 627 012.
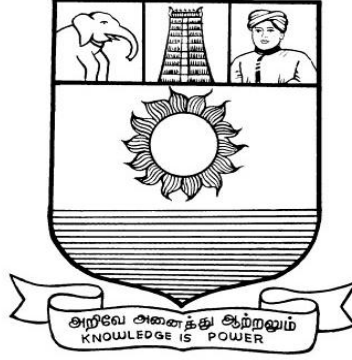
கல்விசார் நிலைக்குழுக் கூட்டம்

MEETING OF THE STANDING COMMITTEE ON ACADEMIC AFFAIRS HELD ON FRIDAY THE 27th OCTOBER 2017.

Syllabus for Diploma in Information Technology Course offered through Directorate of Vocational Education (Community Colleges and Extension Learning Programme) from 2017 – 2018

DIPLOMA IN INFORMATION TECHNOLOGY
SCHEME OF EXAMINATION

Subject code	Title of the Paper	Credit	Hours	Passing Minimum
Semester I				
C17IT11/E17IT01	Principles of Information Technology	6	90	40/100
C17IT12/E17IT02	Programming in C and Data structure	6	90	40/100
C17IT13/E17IT03	Office Automation	6	90	40/100
C17CE10/E17CE10	Communicative English	6	90	40/100
C17ITP1/E17ITP1	Programming in C and Data Structure Lab	4	60	40/100
Semester II				
C17IT21/E17IT04	Data Communication and Networking	6	90	40/100
C17IT22/E17IT05	Adobe Photoshop	6	90	40/100
C17LS23/E17LS05	Life Skill	6	90	40/100
C17ITP2/E17ITP2	Lab - Adobe Photoshop	4	60	40/100
C17ITPw/E17ITPw	Internship/Project	10	150	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 I   :Principles of Information Technology
Paper   II   : Programming in C and Data Structure
Paper III   : Office Automation
Paper IV   : Communicative English
Paper V   : Programming in C and Data structure Lab
Second Semester
Paper VI   :Data Communication and Networking
Paper VII   : Adobe Photoshop
Paper VIII   :Life Skill
Paper IX   :Lab – Adobe Photoshop
Paper X   :Internship/Project

*(Semester Pattern for Community College Only)

(C17IT11/E17IT01)   Paper I : PRINCIPLES OF INFORMATION TECHNOLOGY

Unit I:

An overview of the revolution computers and Communications: From the analog to the digital age: The ‒New Story‖ of computers and communications – The basic elements of a computer & communication system – Communications: Development in Computer Technology, Developments in Communication Technology – Computer and Communication technology combined: Connectivity and Interactivity – The ‒All Purpose Machine‖: The information Appliance that will change your future – The Ethics of Information Technology.

Unit II:

Application Software: Tools for thinking and working – Ethics and intellectual property rights: The four types of Application software – the user interface and other basic features – word processing – Spreadsheets – Database software – Presentation graphics software – communications software – Desktop accessories and personal information managers – integrated software and suites – Groupware internet web browsers – Specialized software.

Unit III:

Communications: Starting along the information Highway: The practical uses of communication and connectivity – telephone related communication services – Video/ voice communication. Video conferencing and picture phones – Online information services – The Internet – Shared resources: Workgroup computing – Electronic Data interchange and intranets: Telecommuting and virtual offices – using a microcomputer to communicate: Analog and Digital signal – modems and data communication software – ISBN lines – Cable Modems – Communication channels – Communication Networks – Local Networks – Factors affecting data transmission – Cyberethics – Netiquette – Controversial and censorship and privacy issues.

Unit IV:

Storage and Databases: Foundations for interactivity, multimedia and Knowledge storage capacity – compression and decompression – criteria for rating secondary storage devices – Diskettes – Hard Disks – Optical Disks – Magnetic Tapes – Organising data in secondary storage: Databases, Data Storage – Hierarchy and the concept of the key field – File management
– Basic concepts – File management systems – Data Management systems – Types of database organization – Features of DBMS – The Ethics of using Database – Concerns about accuracy and privacy.

Unit V:

Information System and Software Development: Management Information Systems – The six phases of system analysis design – The five steps in programming – five generations of programming languages – Programming languages – Object oriented and Visual programming– Internet programming – HTML, XML, Java and ActiveX – The information super Highway – Security Issues

Reference Books

1. Satcey C. Sawyer, Brain K. Williams Sarah E Hutchinson using Information Technology
   – Brief version A practical introduction to computer and communications– 2nd edition McGraw Hill.
2. Satcey C. Sawyer, Brain K. Williams Sarah E Hutchinson using Information Technology
   – Brief version A practical introduction to computer and communications– 3rd edition McGraw Hill.
3. Principles of Information Technology Kathleen M. Austin, Lorraine N. Bergkvist

(C17IT12/E17IT02) Paper II 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 Dijikstra's Algorithm).

Reference Books:
1) ‖Programming in ANSI C‖ E.Balgurusamy
2) ‖Data Structures through C‖ YashavantKanethar
3) Programming in ANSI C‖ E.Balgurusamy
4) Data Structures through C‖ YashavantKanethar

(C17IT13/E17IT03)   Paper III   OFFICE AUTOMATION

UNIT – I:

CERTIFICATE COURSE IN OFFICE AUTOMATION & E-GOVERNANCE Computer & Internet: Desktop computers, Block diagram of a computer, Input and output devices, memory and storage devices, different ports and its uses, Different type of printers. Software: OS, Windows OS, Application software. Networking, different LAN and WAN connections, connecting to a network, testing connection, Internet, IP address, Hypertext, Uniform Resource Locator, Web Browsers, IP Address, Domain Name, Internet Services Providers, Internet Security, Internet Requirements, Web Search Engine, Net Surfing, Internet Services.

Windows XP: Windows concepts, Features, Windows Structure, Desktop, Taskbar, Start Menu, My Computer, Recycle Bin, Windows Accessories- Calculator, Notepad, Paint, Wordpad, Character Map, Windows Explorer, Entertainment, Managing Hardware & Software- Installation of Hardware & Software, Using Scanner, System Tools, Communication, Sharing Information between programs.

Word Processing; MS Word: Features, Creating, Saving and Opening Documents in Word, Interface, Toolbars, Ruler, Menus, Keyboard Shortcut, Editing, Previewing, Printing,& Formatting a Document, Advanced Features of MS Word, Find & Replace, Using Thesaurus, Using Auto- Multiple Functions, Mail Merge, Handling Graphics, Tables & Charts, Coverting a word document into various formats like- Text, Rich Text format, Word perfect, HTML,PDF etc.

Worksheet- MS-Excel: Worksheet basics, creating worksheet, entering into worksheet, heading information, data, text, dates, alphanumeric values, saving & quitting worksheet, Opening and moving around in an existing worksheet, Toolbars and Menus, Keyboard shortcuts, Working with single and multiple workbook, working with formulae & cell referencing, Auto sum, Coping formulae, Absolute & relative addressing, Worksheet with ranges, formatting of worksheet, Previewing & Printing worksheet, Graphs and charts, Database, Creating and Using macros, Multiple worksheets- concepts, creating and using.

UNIT – II:

MS Power Point: Creating slide show with animations.
Autocentnt Wizard,creating a lank presentation, autolayout, Power point screen:screen layout and Views, insert a newslide,applying design template, changing slide layout,reordering and hiding slides, slide show and editing custom slide. Resizing a text box ,Text box properties,Delete   a text bo,Bulleted lists,Numbered lists,Adding notes,Video and Audio, Adding text Editing options,Formatting text,Replace fonts,Line spacing
,Change case Spelling check, Color schemes , Adding clip art,Adding an image from a file Editing graphic,AutoShapes,WordArt,Backgrounds, Action buttons Slide animation Animation preview Slide transitions Slide show options Slide master Header and footer Slide numbers Date and time.

UNIT – III:

Database Management & MS ACCESS

Database Basics: Databases, Records · Fields, data types, Database Types · Library Catalogues
Introduction into Microsoft Access,Starting Up Microsoft Access,Creating New, and Opening Existing Databases,Creating a database using a wizardmCreating a database *without* using a wizard,Tables - What they are and how they work, Create a table from scratch in Design view, Primary Keys, Switching Views, Entering Data, Manipulating   Data, Advanced   Table   Feature Examples,Relationships - How to link multiple tables together,Forms - What they are and how they work, Creating A Form Using A Wizard,Reports - What they are and how they work, Creating A Report Using A Wizard, Creating Mail Merge Labels using aWizard

UNIT – IV:

Intranet & E-governance
   Intranet tools: E-mail: Anatomy of e-mail,e-mail address, finding e-mail address, adding signature, attaching files, opening attachments, managing e-mail account, Web mail ,Case study: Yahoo Mail, Outlook express.
FTP, ftp commands, ftp software, Telnet, using telnet,

Web pages, HTML, basics of HTML. MS Front page: Page Properties

,Text,Hyperlinks,Tables   ,Graphics   and   Pictures   ,Miscellaneous,Shared borders,Navigation bars mCascading Style Sheets,Themes , Frames
,Components ,Forms, create web site. Uploading and downloading files. Portals, creating portals, digital signature, computer virus and antivirus software
         E-governance: E-government, need of e-governance, e-assistance, e-democracy,e-administrtaion,citizen services, e-procurement, Mobile government, Law and policies, IT Act, Right for Information Act, Introduction to various TAX Payable, Purchase & Tender procedures and E-filing of Information.

E-governance implementations: Software and Hardware required for E- governance Implementation, E-governance in a Small Office, Web Portal for E-governance , E-governance for Public utilities, E-governance in a Medium Enterprise, E-governance & Finance, E-Tender & Web E- governance efforts of State Government of Rajasthan, Andhrapradesh Model.

Reference Books

1. Professional Office Procedure by Susan H Cooperman, Printice Hall
2. Information Technology:Principles , Practices and Oppertunities by James A Senn,
   Printice Hall
3. Technology And Procedures for Administrative Professionals by Patsy
   Fulton- Calkins, Thomson Learning
4. Computer Basics with Office Automation   by Archana Kumar (Author)

(C17CE10/E17CE10)Paper IV 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. Communication Skills for Technical Students
   by Farhatulla (Author)

**(C17ITP1/E17ITP1)Paper V Practical : Programming in C and Data
  Structure Lab**

Semester - II

(C17IT21/E17IT04)Paper VI 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, Liner 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: Adress 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, Rmote 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,4thedition,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,CRCPress,Taylor and Francis Group.
3. Data Communications & Networking (sie)

By A. Behrouz Forouzan

(C17IT22/E17IT05)Paper VII ADOBE PHOTOSHOP

Unit I:

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 II:

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 III:

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 TextPAINTING 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 IV:

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 V:

WORKING WITH THE PEN TOOL : Understanding Paths & the Pen Tool - Creating Straight & Curved PathsCreating 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 :

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

http://nettkringkasting.no/~wictor/Tutorials/Photoshop/Photoshop%206%2 0Classroom%20in%20a%20Book.pdf.

1. Adobe Photoshop   By Bittu Kumar

(C17LS23/E17LS05) VIII 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 books:

1   Life skill, Manonmaniam Sundaranar University Publications Division (2011)

2. Developing Entrepreneurial Life Skills: Creating and Strengthening ...
   By Shipra Vaidya

(C17ITP2/E17ITP2) IX Lab - Adobe Photoshop

(C17ITPw/E17ITPw)X Internship/Project