



மனோன்மணியம் சுந்தரனார் பல்கலைக்கழகம்

**MANONMANIAM SUNDARANAR UNIVERSITY**

**SYLLABUS FOR DIPLOMA IN INFORMATION TECHNOLOGY  
PROGRAM OFFERED THROUGH DIRECTORATE OF VOCATIONAL  
EDUCATION (COMMUNITY COLLEGES AND VOCATIONAL SKILL DEVELOPMENT  
CENTRES) FROM 2019 - 2020**



கல்விசார் நிலைக்குழுக் கூட்டம்

**MEETING OF THE STANDING COMMITTEE ON  
ACADEMIC AFFAIRS HELD ON WEDNESDAY  
THE 22<sup>nd</sup> JANUARY 2020**

**DIPLOMA IN INFORMATION TECHNOLOGY**

தகவல் தொழில்நுட்பம் பட்டயம்

**SCHEME OF EXAMINATION**

Subject Code	Title of the Course	Credit	Hours	Passing Minimum
<b>Semester I</b>				
C19IT11/E19IT01	Principles of Information Technology	6	90	40/100
C19IT12/E19IT02	Programming in C	6	90	40/100
C19IT13/E19IT03	Office Automation	6	90	40/100
C19CE10/E19CE10	Communicative English	6	90	40/100
C19ITP1/E19ITP1	Practical I-C Programming Laboratory	4	120	40/100
<b>Semester II</b>				
C19IT21/E19IT04	Data Communication and Networking	6	90	40/100
C19IT22/E19IT05	Web based Application Development using PHP and MySQL	6	90	40/100
C19LS23/E19LS05	Life Skill	6	90	40/100
C19ITP2/E19ITP2	Practical II-Web based Application Development Laboratory using PHP and MySQL	4	120	40/100
C19ITPW/E19ITPW	Project	10	150	40/100

**Eligibility for admission:** Pass in 10<sup>th</sup> std., 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 Course is 40%. Classification will be done on the basis of percentage marks of the total marks obtained in all the Courses and as given below:

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

**Theory Paper**

Internal Marks-25

External Marks-75

## Syllabus

### First Semester

Course I	: Principles of Information Technology
Course II	: Programming in C
Course III	: Office Automation
Course IV	: Communicative English
Course V	: Practical I-C Programming Laboratory

### Second Semester

Course VI	: Data Communication and Networking
Course VII	: Web based Application Development using PHP and MySQL
Course VIII	: Life Skill
Course IX	: Practical II-Web based Application Development Laboratory using PHP and MySQL
Course X	: Project

**\*(Semester Pattern for Community College Only)**

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### Program Objectives

1. To ensure development of skilled professionals to meet the industrial requirements in Information Technology industry.
2. To empower graduands with skills which will help them establish start-ups in Information Technology and related sectors.
3. To encourage the graduands continue their higher studies and contribute to the needs of the community through research.

## Semester I

### Course I

#### (C19IT11/E19IT01)PRINCIPLES OF INFORMATION TECHNOLOGY

#### Objectives

1. To understand the IT based environment in terms of various concepts, techniques and tools.
2. To know the IT based business applications and the latest trends in industry.

#### Unit-I

18 Hrs

**Information Technology Basics:** Introduction, Need for Information Storage and Processing, Information Technology Components, Role of Information Technology, Information Technology and the Internet.

#### Unit-II

18 Hrs

**Internet:** Introduction, Internet Evolution, Basic Internet Terminology, Data over Internet, Modes of Data Transmission, How the Internet Works: Accessing Internet, Connecting to the Internet, Steps to Connect to the Internet, Internet protocol (IP) address, Domain name, The World Wide Web, The URL.

#### Unit-III

18 Hrs

**Networks:** Types of Networks, Types of Topologies, and Protocols used in the Internet, Internet Applications, Getting Connected to Internet Applications, Computer Ethics.

#### Unit-IV

18 Hrs

**Electronic Commerce (E-Commerce):** E-commerce features, Business to business (B-to-B or B2B) E- Commerce, Business to consumer (B-to-C or B2C) E- Commerce, Business to Government (B-to-G or B2G) E- Commerce, Government to Consumer (G-to-C or G2C) E- Commerce, Consumer to consumer(C-to-C or C2C) E- Commerce.

#### Unit-V

18 Hrs

**Emerging Trends in IT:** Introduction, Electronic Data Interchange (EDI), Smart Cards, Mobile Communication, Internet Protocol TV, Virtual Reality, Augmented Reality, Internet of Things.

#### REFERENCES:

- Satcey C. Sawyer, Brain K. Williams Sarah E Hutchinson, Using Information Technology, Brief version, 2<sup>nd</sup> edition McGraw Hill.
- [www.tutorialspoint.com/e\\_commerce/e\\_commerce\\_business\\_models](http://www.tutorialspoint.com/e_commerce/e_commerce_business_models).
- Principles of Information Technology Kathleen M. Austin, Lorraine N. Bergkvist

**Course II**  
**(C19IT12/E19IT02)PROGRAMMING IN C**

**Objectives**

1. To learn the basic programming constructs through C.
2. To develop possible logic and then corresponding programs and applications in C.

**Unit - I**

**18 Hrs**

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

**Unit- II**

**18 Hrs**

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**

**18 Hrs**

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, input/output, error handling during I/O operations, Random access to files, command line arguments.

**Unit - IV**

**18 Hrs**

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 a 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 a 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**

**18 Hrs**

Trees: Definition & Terminology - Binary trees - Traversal of a binary tree: In order, Pre order and Post order. Representation of a Binary tree 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).

## **REFERENCES:**

- ❖ Programming in ANSI C, E.Balgurusamy
- ❖ Data Structures through C, Yashavant Kanethar
- ❖ Programming in ANSI C E.Balgurusamy
- ❖ Data Structures through C YashavantKanethar

## **Course III (C19IT13/E19IT03)OFFICE AUTOMATION**

### **Objectives**

1. To master various Office Automation tools in the MS Office Suite.
2. To understand the basic Internet tools and the implementation of e-governance.

### **Unit – I**

**18 Hrs**

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, Word pad, Character Map, Windows Explorer, Entertainment, Managing Hardware & Software, Installation of Hardware & Software, Using Scanner, System Tools, Communication, Sharing Information between programs.

### **Unit – II**

**18 Hrs**

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, Converting 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 - III****18 Hrs**

MS Power Point: Creating slide show with animations. Auto centre Wizard, creating a blank presentation, auto layout, Power point screen: screen layout and Views, insert a new slide, 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 box, 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 preview Slide transitions Slide show options Slide master Header and footer Slide numbers Date and time.

**Unit - IV****18 Hrs**

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, Opening Existing Databases, Creating a database using a wizard, Creating 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 a Wizard.

**Unit - V****18 Hrs**

Intranet tools and E-Governance: 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, Yahoo Mail, Outlook express, Web pages, HTML, basics of HTML, Page Properties, Text, Hyperlinks, Tables, Graphics and Pictures, Miscellaneous, Shared borders, Navigation bars, Cascading 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 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, Andhra Pradesh Model.

**REFERENCES:**

- ❖ Professional Office Procedure by Susan H Cooperman, Prentice Hall
- ❖ Information Technology: Principles, Practices and Opportunities by James A Senn, Prentice Hall
- ❖ Technology and Procedures for Administrative Professionals by Patsy Fulton- Calkins, Thomson Learning
- ❖ Computer Basics with Office Automation by Archana Kumar

## Course IV

### (C19CE10/E19CE10) COMMUNICATIVE ENGLISH

1. **Basic Grammar:**
  - a. Review of grammar
  - b. Remedial study of grammar
  - c. Simple sentence
  - d. Word passive voice etc.
2. **Bubbling Vocabulary:**
  - a. Synonyms
  - b. Antonyms
  - c. One – word Institution
3. **Reading and Understanding English**
  - a. Comprehension passage
  - b. Précis – writing
  - c. Developing a story from hints.
4. **Writing English**
  - a. Writing Business letters.
  - b. Paragraph writing
  - c. Essay writing
  - d. Dialogue writing
5. **Speaking English**
  - a. Expressions used under different circumstances
  - b. Phonetics

#### REFERENCES :

- ❖ V.H.Baskaran – “English Made Easy”
- ❖ V.H.Baskaran – “English Composition Made Easy” Shakespeare Institute of English Studies, Chennai
- ❖ N.Krishnaswamy – “Teaching English Grammar”, T.R.Publication, Chennai
- ❖ “Life Skill” – P.Ravi, S.Prabakar and T.Tamzil Chelvam, M.S.University, Tirunelveli.



## **Course V**

### **Practical I**

#### **(C19ITP1/E19ITP1)C PROGRAMMING LABORATORY**

##### **List of Exercise:**

1. Program to print Hello World
2. Program to do all arithmetic operations by getting input during runtime
3. Program to find the area of a square and triangle
4. Program to add two arrays
5. Program to use structures
6. Program to implement Binary Search
7. Program to find prime numbers in a particular range.
8. Program to find the sum of all even numbers from 1 to 100.
9. Program to calculate the data structures: Linked list, queue.
10. Program to find the equation of a line using

**Semester – II**  
**Course VI**

(C19IT21/E19IT04)**DATA COMMUNICATION AND NETWORKING**

**Objectives:**

1. To understand the basic concepts and techniques of Data communication.
2. To understand the different layers of a standard communication protocol.

**Unit-I** **18 Hrs**

**Overview:** Introduction, Network models, Physical layer and Media, Data and Signals, Encoding and Modulation, Multiplexing and Spreading, Transmission Media, Switching, Telephone and Cable Networks.

**Unit-II** **18 Hrs**

**Data link layer:** Error Detection and Correction, Data Link Control and Protocols, Random and Controlled Accesses, Local Area Networks (LANs), Wide Area Networks (WANs), SONET/SDH, Frame Relay and ATM.

**Unit-III** **18 Hrs**

**Network layer:** Logical Addressing, IPv4 Protocol, Address Mapping, Error Reporting, and Multicasting, Packet Delivery, Forwarding, and Routing.

**Unit-IV** **18 Hrs**

**Transport layer:** Transport layer in the Internet (UDP, TCP, SCTP), Congestion control and Quality of Service (QoS).

**Unit-V** **18 Hrs**

**Application layer:** Domain Name System (DNS), Remote Logging, Electronic Mail and FTP, World Wide Web and HTTP, Network Management, Multimedia.

**REFERENCES:**

- ❖ Data Communications and Networking, 4th ed., Behrouz A. Forouzan, McGraw-Hill, 2007.
- ❖ Data and Computer Communications, 8th ed., William Stallings, Prentice Hall, 2006. Computer Networks, 5th ed., Andrew Tanenbaum, Prentice Hall, 2008.

## Course VII

### (C19IT22/E19IT05)WEB BASED APPLICATION DEVELOPMENT USING PHP AND MYSQL

#### Objectives:

1. To learn the fundamentals of web application development tools: PH and MySQL.
2. To develop dynamic database driven websites.

#### Unit-I

18 Hrs

**Introduction to PHP:** Configuration of PHP, Apache Web Server, MySQL, Relationship between Apache, MySQL and PHP(AMP Module), Installing PHP for Windows, Wamp server , XAMP server.

PHP Structure and Syntax, Creating PHP pages, Rules of PHP syntax, Integrating HTML with PHP, Constants, Variables: Static and Global Variable, Conditional Structure and Looping, PHP operators, Arrays, constructs, User Defined function, argument function, variable function, Return function, default argument, variable length argument.

#### Unit-II

18 Hrs

**In built functions:** Variable Function: gettype, settype, isset, strval, floatval, intval, print\_r String function: Chr, ord, strtolower, strtoupper, strlen, ltrim, rtrim, trim, substr, strcmp, strcasecmp, strpos, strrpos, strpos, str\_replace, strrev, echo, print, MATH functions: Abs, ceil, floor, round, fmod, min, max, pow, sqrt, rand.

Date function: Date, getdate, setdate, checkdate, time, mktime, Array Function: Count, list, in\_array, current, next, previous, end, each, sort, array\_merge, array\_reverse File function: Fopen, fread, fwrite, fclose.

#### Unit-III

18 Hrs

**Working with Data and forms:** Reading data using Form Controls: Text Fields, Text Areas, Check Boxes, Radio Buttons, List Boxes, Password Controls, Hidden Controls, Image Maps, File Uploads, Buttons Submitting form values: using \$\_Get and \$\_Post Methods, \$\_REQUEST Accessing form inputs with Get/Post functions, Combining HTML and PHP codes together on single page, Redirecting the user.

**Unit-IV****18 Hrs**

**Introducing MySQL:** Concepts and Installation of MySQL on Windows, MySQL structure and syntax, Data Types and Attributes, Working with Tables of MySQL tables and Storage engines, MySQL commands.

**Unit-V****18 Hrs**

**Database Connectivity:** Integration of PHP with MySQL, Connection to the MySQL Database, Creating and Deleting MySQL database using PHP, Updating, Inserting, Deleting records in the MySQL database, MySQL Views: Creating ,Executing , Viewing Information, Modifying, Deleting, Updating Views.

Querying Multiple Tables with Subqueries: Performing Comparisons with Subqueries, Determining Existence with Subqueries, Performing Database Maintenance with Subqueries, Using Subqueries with PHP, Hosting Website.

**REFERENCES:**

- ❖ <http://www.codecademy.com/tracks/php>
- ❖ <http://www.w3schools.com/PHP>
- ❖ <http://www.tutorialpoint.com>
- ❖ <http://www.homeandlearn.co.uk>

## Course VIII

### (C19LS23/E19LS05)LIFE SKILL

#### I Life Coping or adjustment

- (a) External and internal influence in one's life
- (b) Process of coping or adjustment
- (c) Coping with physical change and sexuality
- (d) Coping with stress, shyness, fear, anger far live and criticism.

#### II Attitude

- (a)Attitude
- (b)Self acceptance, self – esteem and self actualization
- (c)Positive thinking

#### III Problem Solving

- (a) Goal Setting
- (b) Decision Making
- (c) Time Management and stress Management.

#### IV Computers

- (a) Introduction to Computers
- (b) M.S.Office
- (c) Power Point

#### V Internet

- (a) Introduction to internet
- (b) E – mail
- (c) Browsing

#### **REFERENCES:**

- ❖ Life Skill Programme course I & II by Dr. Xavier Alphona MCRDCE Publications. R.K.Mutt Road, Chennai – 28
- ❖ ஆளுமை பண்பு வளர்த்தல் மற்றும் தகவல் தொடர்பு by M.Selvaraj Community College,Palayamkottai
- ❖ “Life Skill” –P.Ravi, S.Prabahar & T.Tamil Chelvam, M.S. University, Tirunelveli

## **Course IX**

### **Practical II**

#### **(C19ITP2/E19ITP2)WEB BASED APPLICATION DEVELOPMENT LABORATORY USING PHP AND MYSQL**

##### **List of Ex.**

1. Display Hello World on the browser.
2. Find the use of phpinfo() function
3. Using arithmetic operators and variables.
4. Create forms with responses
5. Create interactive forms.
7. Understand PHP sessions: creating a session, getting PHP session variable values, modifying session variables, destroying a session value.
8. Connect to MySQL database using PHP.
9. Insert records into MySQL database from PHP.
10. Create a employee Registration in PHP and Save and Display the employee records on another page
13. Write PHP code to upload image.

## **Course X**

### **(C19ITPW/E19ITPW)PROJECT**

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