



# महर्षि महेश योगी वैदिक विश्वविद्यालय

Directorate of Distance Education

## Detailed Syllabus

### Post Graduate Diploma in Computer Application (PGDCA)

Duration: One Year

S. No.	Paper Code	Paper
1	1DPGDCA1	Fundamentals of Maharishi Vedic Science (Maharishi Vedic Science – I)
2	1DPGDCA2	Fundamentals of Computer and Information Technology
3	1DPGDCA3	Operating System
4	1DPGDCA4	PC Package
5	1DPGDCA5	FoxPro
6	1DPGDCA6	Programming With VB.net
7	1DPGDCA7	Internet and E-Commerce
8	1DPGDCA8	System Analysis & Design
9	1DPGDCA9	OOPS and Programming with C++
10	1DPGDCA10	Practical - PC Package & Programming in FoxPro and Programming in C++ & Programming with VB.net
11	1DPGDCA11	Project



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<b>1DPGDCA1</b>	<b>FUNDAMENTALS OF MAHARISHI VEDIC SCIENCE (MAHARISHI VEDIC SCIENCE – I)</b>
<b>UNIT-1</b>	Meaning & Importance of Guru Pujan. Meaning of meditation, Mann, Intelligence, Chita, Ego, Thought.
<b>UNIT-II</b>	Name of forty areas of Vedic Science and their expression in Human Physiology and characteristics of consciousness. Consciousness, types of consciousness, characteristics of higher stages of consciousness.
<b>UNIT-III</b>	Maharishi's Yoga, Transcendental Meditation- a general Introduction, Types of Speech, TM Sidhi Programme, Principle of Yoga Asanas and their Concept.
<b>UNIT-IV</b>	Introduction: Maharishi Vedic Management. Fundamental elements of Vedic Management –Totality Management of Science and Art .
<b>UNIT-V</b>	Vedic Management and Leadership. The Idea Leadership is based upon the Totality of Employee's Style

## Suggested Readings

- Chetna –His Holiness Maharishi Mahesh Yogijee
- Maharishi Sandesh -1and 2 , II-His Holiness Maharishi Mahesh Yogijee
- Scientific Yoga Ashanas –Dr.Satpal.
- Dhyani Shailly by Brahmchari Dr. Girish Ji



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1DPGDCA2	FUNDAMENTAL OF COMPUTER AND INFORMATION TECHNOLOGY
UNIT-1	<p>Introduction to computer and information technology : History of development of computers, computer system concept , characteristics, capabilities and limitation , types of computer –analog , digital , hybrid , general, special purpose, micro, mainframe, super , generation of computer , personal computer (PCs) –IBM PCs, characteristics , PC/PCXT/PCAT-configurations, Pentium and Newer PCs specification and main characteristics , types of PCs-Desktop, Laptop, Notebook, Palmtop, Workstation etc , their characteristics.</p> <p>Computer Organizations and Working: Basic component of a computer system –control unit, ALU, INPUT /Output function and characteristics, memory –RAM, ROM, EPROM, PROM and other types of memory.</p>
UNIT-II	<p>Input Devices: Keyboard, Mouse, Trackball, Joysticks, Digitizing tablet, Scanner, Digital Camera, MICR, OCR, OMR, BAR-CODE Reader, Voice Recognition, Light Pen, and Touch Screen.</p> <p>Output Devices: Monitor –characteristics and types of monitor –digital , analog size, resolution, refresh rate , Interlaced /Non Interlaced , Dot Pitch , Video Standard –VGA,SVGA,XGA etc, Printer – Daisy wheel , Dot Matrix, Inkjet , Laser , line printer , plotter , sound card and speakers.</p> <p>Storage Devices: Storage Fundamental –Primary VS Secondary , Data Storage and Retrieval method–Sequential , Direct and Index Sequential , Various Storage Devices –Magnetic Tape ,Magnetic disks, Cartridge Tape , data drives, hard disk drives, floppy (Winchester disks), Disks , Optical Disks , CD,VCD,CD-R,CD-RW, ZIP Drive.</p>
UNIT-III	<p>Computer Software: Need, types of software –system software, application software, system software-operating system, utility program, programming Language, assemblers, compiler and interpreter.</p> <p>Operating System: Function, types –batch, single, Multiprogramming, Multiprocessing.</p> <p>Programming languages- Machine, Assembly High Level, 4GL, their merit and demerits.</p> <p>Application Software: Word –processing, spreadsheet, presentation graphics, data base management software, characteristics, user and example and area of application of each of them.</p> <p>Number System: Data representation in computer, number system of computer –Binary, Octal, Hexa-Representation &amp; their conversion, coding system –ASCII, BCD, EBCDIC etc.</p>
UNIT-IV	<p>Data Communication and Networks: communication channels –twister , coaxial , fiber , optic .Types of Networks –LAN,WAN,MAN etc, Topologies of LAN –Ring , BUS ,STAR,MESH and TREE topologies , components of LAN-media , NIC,NOS, Bridges, HUB, Routers Repeater and Gateway .</p>
UNIT-V	<p>Computer virus: Virus working principles, types of viruses, virus detection and prevention, viruses on networks. Use of communication and IT in daily life.</p>

## Text & Reference Books:-

- Learning Window 98 step by step by Rajeev Mathur , BPB Publication.
- Learning Word 97 for Window by Rajeev Mathur , BPB Publication,
- Learning Excel 97 for Window by Rajeev Mathur , BPB Publication.
- A First Course in Computer by Sanjay Saxena , Vikas Publishing House New Delhi.
- Microsoft Office 2000 by A. Mansoor by Pragya Publications.
- Office 97 Interactive Course by Greg Perry, Tec media.
- Microsoft Office 2000 by A. Mansoor by Pragya Publications.



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1DPGDCA3	Operating System
<b>UNIT-I</b>	Disk Operating System (Dos) Introduction History & version of Dos basic –physics structure of disk drive name , Fat ,File & directory structure and naming rules , booting process , Dos system files. Dos command: Internal –DIR , MD , CD, RD, COPY, DEL, REN , VOL, DATE, TIME, CLS, PATH, TYPE etc. External – CHKDSK, XCOPY, PRINT, DISKCOPY, DISKCOMP, DOSKEY, TREE, MOVE, LABEL, APPEND, FORMAT, SORT, FDISK, BACKUP, EDIT, MODE, ATTRIB , HELP, SYS ,etc Executable V/s Non executable file in Dos.
<b>UNIT-II</b>	Window XP introduction to Window XP and its features. Hardware requirement of Window , Window concept , Window Structure , Desktop , Taskbar , Start Menu, My Picture , My Music, Working with recycle bin-restoring a delete file , emptying the recycle bin. Managing files, folder and disk-navigating between folder , manipulating files and folder , creating new folder , searching files and folder ,my computer –exploring hard disk , coping and moving files and folder from one drive to another map, paint , command prompt window explore –exploring hard disk , coping and moving files and folder from one drive to another , formatting floppy drive and other Explore facilities burning CD Entertainment CD player , DVD Player , Media Player , sound Recorder , volume Control , movies maker.
<b>UNIT-III</b>	Advances Feature of window XP: Managing hardware & Software – Installing of Hardware & Software , using Scanner web camera , printer sharing tools-backup , Character map , clipboard viewer , disk defragmenter , drive space , scandisk , system information , system monitor , drive converter (FAT 32) , disk cleanup , using window update . communication – Dial up Networking Direct Cable connection , hyper terminal , phone dial , Browsing the web with internet explorer , communication through outlook express , Multiple user feature of Window Creating and deleting user , changing user password , etc Accessibility Feature of window –Sharing Information Between Program , Sharing folder and drives browsing the entire networks , mapping window shared drives , using shared printer –understanding OLE-Embed/link Using cut and paste a Embed /link using Insert Object –Manage embedded / Linked Object
<b>UNIT-IV</b>	Linux : history & feature of Linux Structure file system of Linux , hardware requirement of Linux various flavors of Linux Program & process , Process creation and process identifier , function of profile and login file in Linux kernel.
<b>UNIT-V</b>	Multi –User feature of Linux , login and logout from Linux system ,Linux command – be, cal , cat , cd, chgrp, chmod, clown ,clear , cmp, copy, date, find, ps, kill, is, mail, mkdir, more, my, rm, rmdir, wc, who, who is, grep, write, telnet, pipeline, concept, using, floppy, and cdrom, in linux, vi editor.

## Text & Reference book:

- Dos Quick reference by Rajeev Mathura , Golgotha publication
- Linux computer by BPB publication
- Peter Norton Complete Guide To Linux By peter Norton .



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1DPGDCA4	PC PACKAGE
<b>UNIT-I</b>	Office Packages – Office activities and their software requirement., word Processing, spreadsheet, presentation graphics, database, introduction and comparison of various office suites like Ms office, Lotus Office, Star Office, Open Office etc, MS Word Basics: Introduction to Ms Office; Introduction to Ms Word; Features & area of use. Working with Ms Word; Menus & Commands; Toolbars & Buttons; Shortcut Menus, Wizards & Templates; Creating a New Document ; Different Page Views and layouts; Applying various Text Enhancements; Working with – Styles, Text Attributes; Paragraph and Page Formatting; Text Editing using various features; Bullets, Numbering, Auto formatting, Printing & various print options.
<b>UNIT-II</b>	Advanced Features of Ms-Word : Spell Check, Thesaurus, Find & Replace; Headers & Footers; Inserting – Page Numbers, Pictures, Files, Auto texts, Symbols etc.; Working with Columns, Tabs & Indents; Creating & Working with Tables including conversion to and from text; Margins & Space management in Document; Adding References and Graphics; Mail Merge, Envelops & Mailing Labels.
<b>UNIT-III</b>	MS Excel: Introduction and area of use; Working with MS Excel.; concepts of Workbook & Worksheets; Using Wizards; Various Data Types; Using different features with Data, Cell and Texts; Inserting, Removing & Resizing of Columns & Rows; Working with Data & Ranges; Different view of Worksheets; Column Freezing, Labels, Hiding, Splitting etc.; Using different features with Data and Text; Use of Formulas, Calculations & Functions; Cell Formatting including Borders & Shading; Working with Different Chart Types; Printing of Workbook & Worksheets with various options.
<b>UNIT-IV</b>	Ms Power Point: Introduction & area of use; Working with Ms Power Point; Creating a New Presentation; Working with Presentation; Using Wizards; Slides & its different views; Inserting, Deleting and Copying of Slide; Working with Notes, Handouts, Columns & Lists; Adding Graphics, Sounds and Movies to a Slide; Working with Power Point Object; Designing & Presentation of a Slide Show; Printing Presentations, Notes, Handouts with print options.
<b>UNIT-V</b>	Outlook Express: Setup E-mail account with outlook, sending and receiving mail through outlook, concepts of CC and BCC, forwarding mail, Draft messages, formatting e-mail message, Concept of MIME Protocol, attaching files and items into messages, inserting hyperlink using outlook editor creating and using send and receive group E-Mails, opening received messages, opening messages with attachment, replying to mail forwarding messages flagging for further action, setting email option, managing contacts with outlook, Setting up multiple email accounts on single machine.

## TEXT & REFERENCE BOOKS:

- Windows XP Complete Reference, BPB Publications.
- MS Office XP Complete BPB Publication.
- MS Windows XP Home edition complete, BPB Publications.
- I.T. Tools and Applications, A. Mansoor, Pragma Publications.



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1DPGDCA5	FOXPRO PROGRAMMING
<b>UNIT-I</b>	FOXPRO- The RDBMS for PC FoxPro – Version , features, requirement of hardware and Software FoxPro- Menu System , Working with FoxPro ,Creating Database File Some common operation on data CREATE,LIST,APPEND,CLOSE,QUIT, FoxPro – Data types Viewing and editing data displaying and monitoring command – Display , List , Locate ,Edit ,Change, Brower , Replace , Delete ,Recall, Pack(All Command with various Option) Modify Structure , Memo Field Utilities –File Utilities in FoxPro – Display Directory , Copy, Delete , Rename.
<b>UNIT-II</b>	Sorting and Indexing of Date Base files : sorting & Indexing ,Concept Sort Command – Single & Multiple Key Advantage & Disadvantage of Sort , Indexing vs Sorting , single & Multiple Key, Indexing , find seek, Rushmore Technology, Printing report and labels , FoxPro report –its creation , features & utilities , review , Printing Custom Report grouping & Sub grouping . FoxPro Label-Designing & Printing.
<b>UNIT-III</b>	Memory Variables, Date & Time Function and keyboard macros: Memory variables – creation and uses, simple vs array , saving and restoring Memory Variable „,?/?/?/? command, time & date function and command , Date Arithmetic ,Converting defining function Keyboard Macros – Creating and using, Mathematical Command and Function : Arithmetic operation , Mathematical function , mathematical Command , Statistical Function.
<b>UNIT-IV</b>	Programming with FoxPro: Concept of FoxPro command file , modify command , conditioning, branching and looping within program files with do-while End do, If- End if, Scan –End scan, for End for ,Do case –End case , Text- End text ,Executing command from other command files, macro substitution Error condition and program debugging aids common error Massage, Debugging technique and commands.
<b>UNIT-V</b>	MULTIPLE DATA FILES: concept of Multiple Database files – using multiple database files, SET RELATION, UPDATE, APPEND FROM,COPYTO ,JOIN ,relation Query by Example and SQL. Custom Screens & user Define Function & Other tools: create custom screen with @, @-GET, @_EDIT,_SAY_GET_READ, Creating box & Lines , user Define Function , Custom Screen , Designing and their use, Fodor for documentation.

## Ref Books:

- FoxPro made Simple by R.K. Taxali, BPB Publication.
- FoxPro Pragya Publication



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1DPGDCA6	PROGRAMMING WITH VB. NET
UNIT-I	Introduction to Net, Net framework feature & architecture, CLR common Type System, MSIL, Assemblies and class libraries. Introduction to visual studio, Project basic, types of project in. Net, IDE of VB.Net –Menu bar, Toolbar, solution Explore, Toolbar, Properties Window from designer, Output Window, object Brower. The environment: Editor Tab, format tab, general tab, docking tab, visual development & event drive Programming –Method and events.
UNIT-II	The VB.Net Language –Variable –Declaring variables , Data types of variable , forcing variables declaration scope & lifetime of a variable , constant , Array types of array , control array , collection , subroutines, function , passing variable number of Argument optional argument , returning value from function control flow statement : conditional statement , loop statement . MsgBox & Input box.
UNIT-III	Working with from : Loading showing and hiding from , controlling , one from within another . GUI Programming with window from: Textbox , label , Button , list box, combo box, checkbox, picture box, radio button , panel , scroll bar, timer , list view , tree view , toolbar , status bar , There properties , method and events . Open file Dialog. Save file Dialog, font Dialog , color Dialog , print Dialog , link label . Designing menus: context Menu & shortcut Keys.
UNIT-IV	Object oriented programming: classes & object, field properties, Method & Event, Constructor, and Inheritance. Access specifiers: Public Private, Protected. Overloading , my base & My class Keyword , Overview of OLE, Accessing the Win 32 API from VB.net .com technology , advantage of com+, com & .net , create User control , register User control , access com component in net application.
UNIT-V	Database programming with ADO.Net – Overview of ADO, from ADO to ADO.net Accessing data using server explore, creating connection, command, data Adapter and data set with OLEDB and SQLDB. Display data on data bound control, display data on data grid.

## Text & Reference Books:

- VB.NET PROGRAMING BLACK BOOK BY STEVEN
- HOLZNER –DREAMTECH PUBLICATIONS
- MASTERRING VB.NET BY EVANGELOS PETROUTSOS- BPB



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1DPGDCA7	INTERNET & E-COMMERCE
<b>UNIT-I</b>	Internet- evolution, Protocols, Interface Concepts, Internet Vs Intranet, Growth of Internet, ISP. Connectivity- Dial Up, Leased Line, VSAT etc., URLs, Domain names, Portals. Application E-MAIL- Concepts, POP and WEB Based E-mail, merits, address, Basics of Sending & Receiving E-mail Protocols Mailing List, Free Email services.
<b>UNIT-II</b>	INTERNET Protocols- Data Transmission Protocols, Client/Server Architecture & its characteristics, FTP & its usages, Telnet Concept, Remote Logging, Protocols, Terminal Emulation, Message Board, Internet chatting- Voice chat, text chat.
<b>UNIT-III</b>	Html- Concepts of Hypertext, Versions of HTML, Elements of HTML, syntax, Head & Body Sections, Building HTML documents Inserting texts, Images, Hyperlinks, Backgrounds and Color controls, Different HTML tags, Table layout and presentation, Use of font size & Attributes, List types and its tags, Use of Frames and Forms in web pages. Introduction to WYSIWYG Design tools for HTML, Overview of MS FrontPage, Macromedia Dream weaver, and other popular HTML editors, designing web sites using MS FrontPage (using at least FrontPage2000) .
<b>UNIT-IV</b>	JavaScript Overview, syntax & conventions, Variables, Expressions, Branching & Looping statements, Functions, Arrays, Objects, Events & Document Object Model- onClick, onMouse Over, onSubmit, onFocus, onChange, onBlur, onLoad, onUnload, Alerts, Prompts & Confirms.
<b>UNIT-V</b>	E- Commerce An introductions, Concepts, Advantages and disadvantages, Techonology in E-Commerce Internet & E-business, Applications, Feasibility & various constraints, E-transition challenges for Indian corporate. Electronic Payment System: Introduction, Type of Electronic Payment Sydtems, Digital Token-Based Electronic Payment Systems, Smart Card and Electronic Payment Systems, Credit Card Based Electronic Payment Systems Risk and Electronic Payment Systems.

## TEXT & REFERENCE BOOKS:

- **Internet and Web Design Made Easier** By A. Mansoor. Pargya Publications.. Matura
- **Level Module – M 1.2-** Internet & Web page designing by V.K. Jain- BPB Publications,
- **E-Commerce An Indian Perspective (Second Edition)**-By P.T. Joseph, S.J. Presentice-Hall of India
- Internet for Everyone- Alexis Leon and Mathews Leon, Vikas Publishing House Pvt. Ltd. New Delhi





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1DPGDCA8	SYSTEM ANALYSIS AND DESIGN
UNIT-I	The System Concept, Characteristics, Elements and Types of a system, System Development Life Cycle, Considerations for candidate systems and Prototyping. The role of System Analyst
UNIT-II	System planning and Initial Investigation Information Gathering, information gathering tools. Structured Analysis, The Tools of Structured Analysis (DFD, Data Dictionary, Decision tree and Pseudo Codes Decision Tables), pros and cons of each tool. System performance definition, description of outputs, Feasibility Study Cost/ Benefit Analysis: Data Analysis, Cost/Benefit Analysis, The system proposal.
UNIT-III	The process and Stages of System Design: Design methodologies, development activities. Input design, output design forms design, types of forms, and basics of form design, layout considerations and forms control.
UNIT-IV	File structure, file organization, objectives of database, data structure. System Testing and Quality Assurance, Why system testing, what do we test for, the test plan quality assurance, trends in testing, role of data processing auditor. Training and Documentation.
UNIT-V	Implementing and software maintenance, Conversion, combating, resistance to change, post implementation review, software maintenance. Hardware/Software Selection and the Computer Contract, suppliers, procedure for hardware/software selection, financial considerations in selection, the computer contract. System Security, Disaster Recovery Planning .

## TEXT & REFERENCE BOOKS:

- **System Analysis and Design**, Elias M. Awad ,Galgotia Publications (P) Ltd.
- **System Analysis and Design**. Interactional Ed. Perry Edward McGraw Hill Publications.
- **Information Technology & Computer Applications**, by V.K. Kapoor, Sultan Chand & Sons, Delhi.
- **System Analysis and Design**, A. Mansoor, Pragya Publication.



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1DPGDCA9	OOPS & PROGRAMMING WITH C++
<b>UNIT-I</b>	PRINCIPLES OF OBJECT-ORIENTED PROGRAMMING: Object-Oriented Programming Paradigm, Basic Concepts of Object-Oriented Programming, Benefits of OOPs, Object-Oriented Languages, Applications of OOP, C++ Statements, Class, Structure of C++, Program, Creating the Source File, Compiling and Linking.
<b>UNIT-II</b>	TOKENS, EXPRESSIONS AND CONTROL STRUCTURES: Introduction Tokens, Keywords, Identifiers, Basic Data types, User Defined Data Types, Derived Data Types, Symbolic Constants, Type Compatibility, Declaration of Variables, Dynamic Initialization of Variables, Reference Variables, Operators in C++, Scope Resolution Operator, Member Dereferencing Operators, Manipulators, Type Cast Operator, Expressions and Implicit Conversions, Operator Precedence, Control Structures.
<b>UNIT-III</b>	CLASSES AND OBJECTS: Specifying a class, Defining Member Function, making an Outside Function Inline, Nesting of Member function, private member function, Arrays within a class, Memory Allocation for Objects, Static Data Member, Static Member Functions, Arrays of Objects, Object as Function Arguments. CONSTRUCTORS AND DESTRUCTORS: Introduction, Constructors, parameterized Constructors, Multiple Constructors with Default Arguments, Dynamic Initialization of Objects, Copy Constructors, Dynamic Constructors and Destructor.
<b>UNIT-IV</b>	FUNCTIONS IN C++: The Main Function, Function Prototyping, call by Reference, Return by reference, Inline Functions, Default Argument, Const. Arguments, Function Overloading, Friend and Virtual Function. OPERATOR OVERLOADING AND TYPE CONVERSIONS: Introduction, Defining Operator Overloading, Overloading Unary Operators, Overloading Binary Operators Using Friends, Manipulation of strings using operators, Rules for Overloading Operators, Type conversions.
<b>UNIT-V</b>	INHERITANCE: EXTENDING CLASSES: Introduction, Defining Derived Classes, Single Inheritance Making a Private Member Inheritable, Multilevel Inheritance, Multiple Inheritance, Hierarchical Inheritance, Hybrid Inheritance. POINTERS, VIRTUAL FUNCTIONS AND POLYMORPHISM: Compile time Polymorphism, run time polymorphism, Pointers to Objects, This Pointer, Pointers to Derived Classes, Virtual Functions, Pure Virtual Functions.

## TEXT & REFERENCE BOOKS:

- Object Oriented Programming with C++ by E. Balaguruswami. TMH Publications ISBN 0-07-462038-x
- Object Oriented Programming in C++ by Nabajyoti Barakati SAMS PHI Pvt. Ltd.
- Insights into OOPS & C++. Rajeshwar Shukla, Pragya Publications .