Sunrise University
Approved by Govt. of Rajasthan vide Sunrise University Act, 2011
Recognized by UGC Act, 1956 u/s 2 (f)

PGDCA
Year 1

A. Theory

S.No.	COURSE CODE	SUBJECT	PERIODS			INTERNAL ASSESMENT	ESE	Subject TOTAL
			L	T	P			
1	PGDCA101	Fundamentals of Computer & IT	3	1		40	60	100
2	PGDCA102	C-Programming Data Structure & Algorithms	3	1		40	60	100
3	PGDCA103	Data Base Technology	3	1		40	60	100
4	PGDCA104	Operating System	3	1		40	60	100
5	PGDCA105	Internet &.E Commerce	3	1		40	60	100
6	PGDCA106	Computer Architecture	3	1		40	60	100

B. Practical

S.No.	COURSE CODE	SUBJECT			P	INTERNAL ASSESMENT	ESE	Subject TOTAL
7	PGDCA107	Windows and MS Office Lab			4	60	40	100
8	PGDCA108	C Programming and Data Structure Lab			4	60	40	100
9	PGDCA109	Data Base Lab			4	60	40	100
10	PGDCA110	Project			4	100	-	100
		Total				**420**	**480**	**1000**

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PGDCA101: Fundamental of Computer & IT

Unit	Topics
I	**Introduction to the Computer -** Definition, History, Computer Generations, Components, Computer characteristics, Classification of computers, Microcomputers, Minicomputers, Mainframes, Supercomputers, Personal computers Desktop, Laptop, Palmtop, Tablet PC. **Hardware:** I/O devices, Computer Peripherals - Keyboard, Mouse, Printers. CPU,CPU component - ALU, Control Unit, Primary and Secondary storage, Memory Types. **Storage Fundamentals** Data Storage and Retrieval methods – Sequential, Direct and Index-Sequential. Various Storage Devices – Magnetic Tape, Magnetic Disks, Cartridge tape, data drives, hard disk drives, Floppy disk, Optical disk – CD, VCD, CR-R, CD-ROM, DVD
II	**Computer Software** Need, Types of Software"s – System Software, Application Software. System Software – Operating System, utility Program, Programming languages, Assemblers, Compilers and Interpreter. Operating System– Functions, Types-Batch, Single, Multiprogramming, and Multiprocessing. Programming Languages – Machine, Assembly, High level, 4GL their merits and demerits. Application Software – Word Processing, Spreadsheet, presentation Graphics, Data Base Management Software, Characteristics, uses and examples and area of application of each of them. Computer Virus.
III	**Data & Information** **Data-** Data, types of Data & Data Formats- Text, image, sound, video etc. **Information-** Difference between data, and information, need for information, qualities of information, categories of information, level of information, use of Information technology in Office Automation , Trade &Education. **Data Representation**: Number system Binary, Decimal, Hexadecimal and Octal Conversions, ASCII, Binary Coded Decimal (BCD), Binary Arithmetic, Binary Codes: Gray, Alphanumeric and Hamming Codes, Compliments, K- Maps.

Unit	Topics
IV	**IT Industry Trends, Careers and Applications** Scientific, Business, Educational and Entertainment Application, Industry Automation, Weather Forecasting, Awareness of Ongoing IT projects in India etc. Application of IT to other Areas E Commerce, electronic governance, Multimedia, Entertainment.
V	**Data Communication and Networks** Analog & Digital Signals, Communication Process, Direction of Transmissions Flow-Simplex, Half – Duplex, Full Duplex. Communication Protocols. Communication Channels – Twisted, Coaxial, Fiber b optic, serial and Parallel Communication. Modem – Working and Characteristics Types of N/W connections – Dialup, Leased Lines, ISDN Types of Network – LAN, WAN, MAN etc. Topologies of LAN – Ring, Bus, Star, and Mesh for tree Topologies. Component of LAN – Media, NIC, NOS, Bridges, HUB, Routers, Repeaters and Gateways
	References: 1. D S Yadav, "Foundations of IT", New Age, Delhi 2. Rajaraman, "Introduction to Computers", PHI 3. B.Ram "Computer Fundamentals", New Age. 4. Kanter, "Managing Information System" 5.Data Communication and Networking by "Behrouz A. Forouzan", Tata McGraw Hill.

Unit	Topics
I	**Introduction To 'C':** Development of C Special features of C language, Structure of a C program, Constants, Literals reserved words, Identifiers, Data types and their sizes, Expression, Statements, Input and output functions, Formatted Input/ Output, Operator and expressions
II	**Program Structures:** Conditional and unconditional branch control structures, Loop Control structures, Break and Continue in Loop structures, C functions, Library functions, User-defined functions, arguments and parameters, Scope rules for identifiers, C structures and union. Declaration and initialization
III	**Array and Pointers:** Array declaration, Multidimensional arrays, String, Rules to initialize arrays, Pointers, declaration of a pointer variable, The address pointers, Pointer arithmetic, Dynamic storage allocation. Files and Graphics in C: File data type, Different file operations, Random access file, Graphics in C, Text mode, Graphics mode, Animation, C processors and command line arguments
IV	**Linear Data Structure:** Linear Arrays, Array Storage, Structures, Application of array, Linked Lists, Storage, Structures linked list application, Stacks, Definitions and concepts, Stack application polish notations and expression, Queue operation, Queue implementation and applications
V	**Non Linear Data Structure:** Trees, Basic terminology, Binary Trees, Inorder, Postorder, preorder traversals, Binary Search Trees (BST), Operations on a BST – Insertion, Deletion, Search for a key in BST, Sorting and Searching
	Suggested Readings: 1. C Programming: Schaum Outline Series. 2. Let us C by Y.P.Kanetkar. 3. Introduction of data structures with application by P.G. Sorenson. 4. "Magic with C" AB Publication

PGDCA103: Data Base Management System

Unit	Topics
I	What is database. Traditional file system and Database approach, Advantages of using Databases, types of Databases, concept of data items , fields , records and files, data models
II	SCHEMA AND INSTANCES, DATA INDEPENDENCE DATA BASE LANGUAGES AND INTERFACES E-R Model Concepts, Notations & Examples For E-R Diagrams
III	**Architecture And Concepts Of Relational Databases.** Introduction and features, SQL plus oracle data types . Table :- creation , insertion , updation , deletion of data contents , modification of Structure , removing deleting , dropping of tables , select of commands , alter table Command
IV	**Data constraints:** null value , unique key , primary key , foreign key , logical operator, Range searching , pattern matching , oracle functions. Joins: joining multiple tables ,equi joins , self join, union , intersect and minus clause. Indexes views: Creation , updation , destroying , selection of data, granting permissions , permissions on The object created by user , grant statement
V	Cursors, procedure and function , concepts creation , execution, syntax. Triggers:- concept , use, how to apply database triggers syntax. setting up MS Access , designing a database , Add & editing data , tables , queries , forms & Reports
	Suggested Readings: Data Base Management : Objectives , System Function & Administration - Everest (TMH) Access 2002 The Complete Suggested Readings: -Anderson(TMH). How to do Everything with Access 2002 -Anderson(TMH) C.J. Date, "An introduction to Database system: Vol. 1, AddisionWeseley. Bipin Desai, "An introduction to Database system", Galgotia Publications, New Delhi. Korth, "Database and its C on cept", TMH

Unit	Topics
I	Introduction to operating System, its need and Operating system services, Definition, Early systems, Introduction to various types of operating systems: Batch processing operating system, Multiprogramming operating system, Time Sharing operating system, Multi tasking operating system, Distributed operating system, Network operating system, Real time operating system, Multi processor system and parallel processing.
II	Disk Operating System (DOS): Booting process of DOS, Purpose of autoexec.bat and config.sys, internal commands and external commands, using wild card characters, Creating batch files, getting and setting date , time and prompt, Disk related commands: Format, Fdisk,Chkdsk, Scandisk, Defrag.
III	**Windows 95/98/2000/xp** Introduction to Windows and its features. Hardware requirements of Windows, Windows Structure, Desktop, Taskbar, Start Menu Programs, My Computer, Recycle bin, my documents. Windows Accessories – Calculators, Notepad, Paint, WordPad, Character Map, command Prompt. Windows Explorer – Exploring hard disk, coping and Moving files and folder from one drive to another, formatting floppy drive, and other explorer facilities. Managing files and folders – Creating New folder, searching of files & folders, sharing into b/w, programs, Making Shortcuts of files, folders & application programs, Add and Remove Programs, OLE. Entertainment – CD Players, DVD Players, Media Players, Sound Recorder, Volume – Control
IV	**System Tools –** Backup, Character Map, Disk Defragmenter, Scandisk, System information, Drive space, clipboard viewer, disk cleanup etc. Communication – Dial up Networking, Browsing the wet with Internet explorer. Multiple users Features of Windows – Creating and deleting user, changing user password etc.

Unit	Topics
V	**LINUX:** History & Features of Linux, Linux Structure, File System of Linux, Hardware requirements of Linux, Various flavors of Linux, Program & Process. Process creation and process identifiers, Functions of profile and login files in Linux, Linux Kernel Multiprocessing feature of Linux, Login & Logout from Linux System.,Linux Commands – bc, cal, cat, cd, chgrp, chmod, chown, clear, cmp, copy, date, find, ps, kill, ls, mail, mkdir, more, mv, rm, rmdir, wc, who, whois, grep, write, telnet, pipeline, concpt.VI editor
	Suggested Readings: 1. Rathbone," Windows for dummies", Pustakmahal. 2. Stan Kelly-Bootley,"Understanding UNIX", Sybex Tech asian edition. 3. Silverschatz,"Operating system concepts", Pearson Education India.

Unit	Topics
I	**Introduction to E-Commerce**: Electronic Commerce Frame work – Electronic commerce and Media convergence – The anatomy of E-Commerce Applications – Components of the IWay – Network Access Equipment – Global Information Distribution Networks – Internet Terminology – NSFNET : Architecture and Components - National Research and Educational Network
II	**Electronic Commerce and World Wide Web:** Architectural Frame work for E-Commerce – WWW Architecture – Hypertext Publishing – Consumer Oriented Applications – Mercantile Process Models – Consumer's Perspective – Merchant's Perspective – Electronic Payment Systems (EPS) – Types - Designing EPS - Smart Cards and EPS – Credit Cards and EPS
III	**Electronic Data Interchange (EDI) :** Applications – Security and Privacy Issues – Software Implementations – Value Added Networks – Internal Information System – Work-flow Automation and Coordination – Customization – Supply Chain Management
IV	**Marketing on the Internet:** Advertising on the Internet – Charting the On-Line Marketing Process – E-Commerce Catalogs or Directories – Information Filtering – Consumer-Data Interface: Emerging Tools
V	**Multimedia and Digital Video:** Concepts – Digital Video and E-Commerce – Video Conferencing – Frame Relay – Cell Relay – Asynchronous Transfer Mode – Mobile Computing Frame Work – Wireless Delivery Technology – Mobile Information Access Devices – Cellular Data Communication Protocols – Mobile Computing Applications.
	Books for Suggested Readings:: 1. Frontiers of Electronic Commerce - Ravi Kalakota, Andrew Winston 2. E-Commerce- A Managerial perspective - P.T.Joseph 3. Designing Systems for Internet Commerce- G.WinfieldTreese& Lawrence C.Stewart

Unit	Topics
I	**Introduction to MIS:** MIS concept – Definition – Role of MIS – Impact of MIS – MIS and the User – Management as a Control system – MIS: a support to Management - Management Effectiveness and MIS – Organization as a system – MIS: organization effectiveness. **E-business enterprise:** Introduction – Organization of Business in an E-enterprise – E-business – E-commerce – E-communication – E-collaboration
II	**Strategic Management of Business:** The concept of corporate planning – Essentiality of Strategic Planning – Development of Business Strategies – Types of Strategies – Short-range Planning – Tools of Planning – Strategic Analysis of Business. **Information Security Challenges in E-Business:** Introduction – Security Threats and Vulnerability – Controlling Security Threat and Vulnerability – Management Security Threats and Vulnerability – Disaster Management – MIS and Security Challenges
III	**Decision Making:** Decision-making concepts – Decision-making process – Decision Analysis by Analytical Modeling – Behavioural Concepts in Decision-making – Organizational Decision-making – MIS and Decision-making. **Information and Knowledge:** Information Concepts – Information: a quality product – Classification of Information – Methods of data and Information Collection – Value of Information – General Model of a Human as an Information Processor

Unit	Topics
IV	**Applications in Manufacturing Sector:** Personnel, Financial, Production, Raw Material and Marketing Managements. **Applications in Service Sector:** Service management System – MIS Application in Service Industry – MIS: Service Industry
V	**Enterprise Management Systems:** Enterprise Management Systems – ERP system – ERP Model and Modules – Benefits of ERP – ERP Product Evaluation – ERP Implementation. Technology of Information Systems: Introduction – Data Processing – Transaction Processing – Application Processing – Information System processing
	TEXTBOOKS: 1. MANAGEMNET INFORMATION SYSTEMS Text and Cases – Waman S Jawadekar, 3rd ed, PHI. (UNIT-I: 1.1-1.10, 2.1-2.6 UNIT-II: 3.1-3.7,4.1-4.6 UNIT III: 6.1-6.6,7.7-7.6 UNIT-IV: 12.2-12.6,13.6-13.8 UNIT-V: 15.1-15.6,16.1-16.6)