PGDCA

Syllabus

Dr. Anita Singh
Incharge NAAC Criteria-I
PSSOU, CG Bilaspur

Pt. SUNDARLAL SHARMA OPEN UNIVERSITY CHHATTISGARH. BILASPUR(C.G.)

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Pt. Sunderlal Sharma (Open)
University Chhattisgarh
BILASPUR (C.G.)

POST GRADUATE DIPLOMA IN COMPUTER APPLICATION (PGDCA)

DURATION OF THE COURSE: 01 YEAR

ELIGIBILITY: GRADUATION

COURSE SYLLABUS

YEAR 1

SUBJECT CODE	SUBJECT TITLE	CREDIT
PGDCA01	Fundamentals of Computer and Information Technology	4
PGDCA02	Operating System	4
PGDCA03	RDBMS Programming in FoxPro	4
PGDCA04	PC Packages	4
PGDCA05	Internet and Web Development	4
PGDCA06	Object Oriented Programming in C++	4
PGDCA07	Computer Lab-I (Based on PGDCA 03 and PGDCA 04)	2
PGDCA08	Computer Lab-II (Based on PGDCA 06)	2

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Incharge NAAC Criteria-I
PSSOU, CG Bilaspur

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DIPLOMA PROGRAMME

POST GRADUATE DIPLOMA IN COMPUTER APPLICATION (PGDCA)

CODE – PGDCA01
FUNDAMENTALS OF COMPUTER AND INFORMATION TECHNOLOGY

Unit – I **Introduction to Computer and Information Technology**

Brief history of development of computer & Generations of computers, Computer system concept, Computer system characteristics, Capabilities and limitations, Types of computers- Analog. Hybrid. General purpose, Special purpose, Micro, Mini, Mainframe, Super. Personal Computer (PCs)-Personal Computer family, Pentium and Newer PCs specification and their main characteristics. Types of PCs-Desktop, Laptop, Notebook, Palmtop etc. their characteristics. Computer Organisations and Working, Basic components & block diagram of computer system-Control unit, ALU, Input/output and memory their functions and characteristics.

Unit - II **Input/output Devices and Storage Devices**

Keyboard, Mouse, Trackball, Joystick, Digitizing table, Scanners, Digital Cameras, MICR, OCR, OMR, Bar-code Reader, Voice Recognition, Light pen, Touch Screen. Output devices: Monitors-types-Digital, Analog, characteristics-Size, Resolution, Refresh Rate, Interlaced Non Interlaced, Dot Pitch, Video Standard- VGA, SVGA, XGA etc. 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 Disks, Optical Disks-CD, VCD, CDR, CDRW, DVD, Zip Drive, DAT drive, Pen drive. Number system Data representation in computers. Numbers System of computers binary, Octal, Hexa, Representation & their conversion. Coding System ASCII, BCD, EBCDIC etc.

Unit III **Computer Software**

Computer Software Need - Types of Software - System Software, Application software. System Software - Operating System. Utility program. Assemblers, Compilers and Interpreter. Operating System Functions- Types Batch, Single User, Multi User, Multiprogramming, Multiprocessing. Programming languages- Machine, Assembly, High level, 4GL, their merits and demerits. Application Software- Word processing, Spreadsheet, Presentation graphics, Database management software their characteristics, uses. examples & area of applications of each of them, Computer Virus - Types of Virus, Virus detection & prevention, Virus on network.

Unit IV **Data Communication and Network**

Analog and Digital Signals. Modulations - Amplitude Modular (AM), Frequency Modulation (FM), Phase Modulation (PM), Communication Process- Use of

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Communication in Daily life. Direction of Transmission flow - Simplex, Half Duplex, Full Duplex. Communication Software. Types of network - LAN, WAN, MAN etc. Topologies of LAN Ring, Bus, Star, Mesh and Tree Topologies, Communication Protocols - TCP/IP protocol suit. Communication Channels / Media - Twisted, Coaxial Fibre Optic, serial and parallel communication. Components of LAN - NIC, Network operating system (NOS), Bridges, HUB, Routers, Repeater and Gateways. Modem - working and characteristics. Types of Connections - Dialup leased lines, ISDN, Broadband.

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Incharge NAAC Criteria-I
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CODE – PGDCA02

PGDCA-02 OPERATING SYSTEM

UNIT -I Operating System

Operating system: Introduction. Purpose of operating system, Functions of operating system, Processor management, Memory management, Device management, Interfacing, Kinds of operating system.

UNIT -II Disk Operating System

DOS: History & versions of DOS, DOS basics, Physical Structure disk, drive name, FAT, File & Directory structure and naming rules, booting process DOS system files. DOS commands : 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, RDISK, BACKUP, EDIT, MODE, ATTRIB, HELP, SYS, etc. Executable Vis Non-executable files in DOS.

UNIT -III Windows

Hardware requirements of windows. Windows concepts, features, windows structure, desktop, taskbar, start menu, my computer, recycle bin. Windows Accessories, Calculator, notepad, Paint, WordPad, Character map, Windows Explorer, Creating folders and other explorer facilities. Entertainment CD player, DVD player, Media player, Sound Recorder, Volume Control. Managing Hardware & Software Installation of Hardware & Software Using Scanner System Tool, Backup, Character map, Clipboard, Viewer, Disk Defragmenter, Drive Space, Scandisk System Information, System Monitor, Drive converter (FAT 32), Communication Dial up Networking, Direct Cable Connection, Hyper Terminal, Phone Dialer, Multiple Users Features of Windows, Accessibility Features of Windows. Sharing Information between Programs Understanding OLE. Embed/Link Using Cut and Paste, Embed/Link Using Insert Object, Manage Embedded Linked Object. Network concept and components. windows NT features & capabilities. Hardware are requirements of windows NT.

UNIT -IV LINUX

History & Features of Linux. Linux Structure, File system of Linux. Hardware requirements of Linux, Various flavours of Linux, Program & Process, Process

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creation and process Identifiers. Functions of profile and login files in Linux. Linux kernel. Login and logout from Linux system, Linux Commands bc, cal, cat, cd, chgrp, chmod, clear, cmp, copy, date, find, ps, kill, is, mail, mkdir, more, mv, rm, rmdir, tty, we, who, whois, grep, write, tel net. Pipeline concepts, Using floppy and cdrom in linux. Vi editor.

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DIPLOMA PROGRAMME
POST GRADUATE DIPLOMA IN COMPUTER APPLICATION (PGDCA)

CODE – PGDCA03
RDBMS PROGRAMMING IN FOXPRO

Unit - I FOXPRO - The RDBMS For PC

FoxPro - Versions 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. Data Displaying and Monitoring Commands-DISPLAY, LIST, LOCATE, EDIT, CHANGE, BROWSE, REPLACE, DELETE, RECALL, PACK. (All Commands with various Options), Modify structure, memo field and file utilities. File Utilities in FoxPro DISPLAY DIRECTORY, COPY, DELETE and RENAME.

Unit – II Sorting and Indexing

Sorting & Indexing Concept. Sort Commands Single & Multiple Key. Advantage & Disadvantages of Sort, Indexing Vs Sorting, Single & Multiple Key. Indexing FIND, SEEK, Rushmore Technology, Printing reports and labels, FoxPro Report its creation features & Utilities Preview, Printing Custom Report, grouping & Subgrouping, FoxPro Label Designing & Printing.

Unit-III Variables

Memory Variables Creation and Uses, Simples Vs Array, Saving and Restoring Memory Variables. ?/??/??? Commands. Time & Date Functions and Commands, Date, Arithmetic, Converting Defining Function Keys. Keyboard Macros Creating and Using, Mathematical commands and functions, Arithmetic Operations, Mathematical Functions, Mathematical Commands, Statistical Functions.

Unit-IV Programming with FOXPRO

Concepts of FoxPro commands file, Modify Commands, Conditioning Branching and Looping within Program files with Do-While End do. Concept of Multiple Database Files Using multiple database files. Relationing the database -SET RELATION, UPDATE, APPEND FROM, COPY TO, JOIN, Relation Query by Example and SQL. Custom screens & user define functions & Other tools. Create Custom Screen with @, @_GET, @_EDIT, @_SAY_GET_READ, Creating Box & Lines, User Define Functions, Custom Screen Designing and their Use, FoxDoc for

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documentation. Custom Design of Input Screens, Output Screens and Report formats in regional languages (like Hindi etc) in FoxPro 2.6 for windows and write some programs for this.

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DIPLOMA PROGRAMME
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CODE – PGDCA04
PC PACKAGES

Unit I **Windows and MS-Word**

Introduction to Microsoft windows operating system. Introduction to desktop components like icon, taskbar etc. using start menu, my computer, viewing your hard disk, windows explorer, network neighborhood. Using mouse and keyboard. Using recycle bin sending file, removing file, emptying recycle bin. Removing file Permanently without sending recycle bin. Introduction to MS-Office Suit word, power point, excel, access. The common element that integrate the suit, menu bar, toolbars, office assistance, help. Introduction to MS-Word features, creation, saving and opening document. Introduction to word processing, interface, toolbars, ruler menus, keyboard shortcut keys. Opening multiple document, selecting text, editing, inserting, deleting, moving text, previewing document, printing document, formatting document, paragraph formats, aligning, checking spelling and grammar, find and replace. Autocorrect, auto complete, word count, hyphenation, mail merge, templates, tables and charts. Converting a word document into various format like text, rich text format, html etc.

Unit II **MS- Excel**

Introduction to worksheet basics, creating, entering data in to worksheet, data, text, dates, alphanumeric, values. Saving, opening worksheet. Working with single and multiple workbook- coping, renaming, adding deleting and moving between workbook. Working with formulas, range, formatting, colours, border, previewing and printing worksheet. Page setting, print title, adjusting margin, page brake, header and footer. Graphics and charts using wizard, types for charts. Database creation, sorting, searching and filtering creating and using macros.

Unit III **MS-Power-Point**

Introduction to Power point, features and versions. Creating presentation using Slide master and temples in various colour scheme, working with different views and menus of power point, working with slides- make new slide, move, copy, delete, duplicate, layout slide, formatting text, bullets, spelling checking. printing presentation-print slide, notes, handbook and out line.

Unit IV **MS-Access**

Introduction to ms access, creating, Opening, renaming, deletion data base, working with tables, query, form, reports, macros, modules. Designing query using

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wizard and without wizard. Query design screen, OBE grid, field list, building query, adding and removing a table in a query. Designing form using wizard, views, switching views. Toolbar and controls, properties, navigation data in a form. Adding, deleting, filtering records. Designing a report using wizard, report header footer, page heeder footer, sorting and grouping, previewing report.

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Incharge NAAC Criteria-I
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CODE – PGDCA05

INTERNET AND WEB DEVELOPMENT

UNIT-I

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 E-mail services. INTERNET protocols Data Transmission protocols, Client/Server Architecture & its characteristics, FTP & its usages, Telnet Concept, Remote Logging, Protocols, Terminal Emulation, Massage Board, Internet chatting Voice chat, text chat.

UNIT-II

Word wide web(www) History, working, web browsers, Its functions, concept of search engines, searching the web, HTTP, URLs, Web Services, Web Protocols. Web publishing - Concepts, Domain name Registration, Space on host server for web site, HTML, Design tools, HTML editors, Image editors, Issues in web site creations & Maintenance, FTP software for upload web site. 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.

UNIT- III

JavaScript Overview, syntax & conventions. Variables, Expressions, Branching & Looping statements, Functions, Arrays. Objects, Events & Document Object Model- on Click, on Mouse Over, on Submit, on Focus, on Change, on Blur, on Load, on Unload. Alerts, Prompts & Confirms.

UNIT - IV

E-Commerce: What is Electronic Commerce? Historical development, Key success factors in e-commerce, e-commerce problems, Product suitability, B2B, B2C, Advertising Based Models, Community Based Models, Business-to-employee electronic commerce, electronic data interchange, Internet fraud, e-marketing, disermediation, Bricks and clicks business model, Reintermediation, Online action business model.

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Dr. Anita Singh
Incharge MSAC Criteria-1
PSSOU, CC Bilaspur

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CODE – PGDCA06

OBJECT ORIENTED PROGRAMMING IN C++

UNIT-I

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. Data Types : 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 differencing operators, manipulators, type cast operator, expressions and implicit conversions, operator precedence, control structure.

UNIT-II

Specifying a Class, Defining member functions, making an outside function Inline, nesting of member functions, 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, contractors, parameterized constructors, multiple constructors with default arguments, dynamic initialization of objects, copy constructors, dynamic constructors, constructing two dimensional arrays, destructor. Functions in C++: The Main function, function prototyping, call by reference, return by reference, Inline functions, default argument, constant arguments, function overloading, friend and virtual function.

UNIT-III

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, type conversions.

UNIT-IV

Inheritance: Extending class-Introduction defining derived, Classes, Single Inheritance, Making a Private Member, Inheritable, Multilevel Inheritance, Multiple

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Incharge NAAC Criteria-I
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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.

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REGISTRAR
Pt. Sunderlal Sharma (Open)
University Chhattisgarh
BILASPUR (C.G.)

5/9/17

04/09/17

Dr. Anita Singh
Incharge NAAC Criteria-I
PSSOU, CG Bilaspur