



RANI DURGA VATI VISWA VIDYALAYA, JABALPUR

SYLLABUS OF

Post Graduate Diploma in Computer Applications (PGDCA)

(Non CBCS for University affiliated colleges) (Regular)

(2017-2018) AND ONWARDS

Semester wise paper allocation is as following. The nature of the papers-Theory, Theory and Practical has been mentioned below:

PGDCA Semester I				
Course	Subject	Theory Marks	Sessional Marks	Total
PGDCA-101	Computer Fundamentals	80	20	100
PGDCA-102	Operating Systems	80	20	100
PGDCA-103	PC-Packages	80	20	100
PGDCA-104	Introduction to Programming and Problem Solving Using C++	80	20	100
PGDCA-105L	Practicals based on Operating System and PC-Packages	Practical		50
PGDCA-106L	Practicals based on C++ Programming	Practical		50
TOTAL MARKS		500		
PGDCA Semester II				
PGDCA-201	Internet Concepts and Web Design	80	20	100
PGDCA-202	Programming with VB.Net	80	20	100
PGDCA-203	DBMS/RDBMS with MS Access	80	20	100
PGDCA-204	Financial Accounting and Tally	80	20	100
PGDCA-205L	Practicals based on Web-Design and Tally	Practical		50
PGDCA-206L	Practicals based on Visual Programming and MS-Access	Practical		50
PGDCA-207P	Project Work (Valuation + Viva)			100
TOTAL MARKS		600		

Note:-

- Minimum passing marks in each theory paper is 40% and for practical it is 50%. The Internal assessment/ Sessional will consist of two class tests of 08 Marks each, rest 04 marks are for attendance. First test will be from first two units of the course after their completion and second class test will be from third and fourth units after their completion.
- 75% attendance is compulsory in theory and Practicals. Break-up marks of attendance in theory / Practicals classes will be as follows:

90% and above:	04 Marks	90% to less than 85%	03 Marks
85% to less than 80%	02 Marks	75% to less than 80%	01 Mark
- For the final practical examination conducted by the internal and one external examiner, break up of marks will be as follows:

(a) Practical	35 Marks	(b) Viva-Voce	10 Marks	(c) Sessional	5 Marks
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- Project Work :** To provide the experience in analyzing, Designing, Implementing and evaluating information system students are assigned a project work based on the techniques /software they have learned. Student with consultation to their teacher can select a problem and develop software. Based on the work done a project report is written under the guidance of faculty and submitted to department for valuation. This Project Report shall be evaluated in the department by both internal and external examiner appointed by the university as in the case of practical examination. The distribution of Marks will be as follows:

(a) Project report evaluation	70 Marks	(b) Viva-voce	30 Marks.
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Detailed Syllabus for Semester I

PGDCA-101 Computer Fundamentals

Max. Marks for theory: 80 Internal Assessment: 20 (Min Passing Marks 40% in each)

UNIT-I : Introduction to Computer: Definition, Brief History of Development of Computers, Computer System Concepts, Computer System ,Characteristics, Capabilities And Limitations, Types of Computers, Basic Components of A Computer ,System - Control Unit, ALU, Input/output Functions and Characteristics, Memory Introduction, Classifications- Volatile Memory and Non-Volatile , Flash Memory, ROM, RAM, EPROM, PROM, EEPROM other types of memory. Number systems Binary, Octal, Hexadecimal, Binary Coded Decimal (BCD), Conversion of bases. Complement notations, Binary Arithmetic, fixed and floating points representation of number, Binary Codes: Gray, Alphanumeric, ASCII, EBCDIC codes

UNIT-II : Input/Output & Storage Units-: Keyboard, Mouse, Trackball, Joystick, Digitizing tablet, scanners, Digital Camera, MICR, OCR, OMR, Barcode Reader, Voice Recognition, Light pen, Touch Screen, Monitors - characteristics and types of monitor -Digital, Analog, Size, Resolution, Refresh Rate, Interlaced / Non Interlaced, Dot Pitch, Video Standard - VGA, SVGA, XGA etc,

UNIT-III: Printers And Its Types -Dot Matrix, Inkjet, Laser, Plotter, Sound Card And Speakers, Storage Fundamentals - Primary Vs Secondary Data Storage And Retrieval Methods - Sequential, Direct And Index Sequential, Various Storage Devices - Magnetic Tape, Magnetic Disks, Hard Disk Drives, Floppy Disks ,Optical Disks, Flash Drives Video Disk, MMC Memory Cards, Physical Structure of Floppy & Hard Disk, Drive Naming Conventions In PC.

UNIT-IV: Use of Communication and IT, Communication Process, Communication Types-Simplex, Half Duplex, Full Duplex, Serial And Parallel Communication, Types Of Network - LAN, WAN, MAN ,Internet, Topologies of LAN - Ring, Bus, Star, Mesh And Tree Topologies, Components of LAN -Media, , World Wide Web and Applications and Internet Services.

UNIT-V: Software and Its Need, Types of Software - System Software, Application Software, OPERATING SYSTEMS: Introduction, Types of O.S. – Single User, Multi User – Multi Programming, Multi Tasking, Real Time, Time Sharing, Batch Processing, Parallel Processing, Distributed Processing.

Programming Languages- Machine, Assembly, High Level, 4GL, Their Merits And Demerits, concepts of Assembler, Compiler, Interpreter. Application Software and its Types - Word-Processing, Spreadsheet, Presentation Graphics, Data Base Management Software, Characteristics, Virus-Working Principles, Types of Viruses, Virus Detection and Prevention Methods .

TEXT & REFERENCE BOOKS:

1. COMPUTERS TODAY, BY S.K BASANDRA, GALGOTIA PUBLICATIONS.
2. FUNDAMENTALS OF INFORMATION TECHNOLOGY ALEXIS LEON & MATHEWS LEON, VIKAS PUBLISHING

PGDCA-102 Operating Systems

Max. Marks for theory: 80 Internal Assessment: 20 (Min Passing Marks 40% in each)

UNIT-I: DISK OPERATING SYSTEM (DOS): Introduction, History & Versions of DOS, DOS Basics - Physical Structure of Disk, Drive Name, FAT, File and Directory Structure and Naming Rules, Booting Process, DOS System Files. DOS Commands: Internal - DIR, MD, CD, RD, COPY, COPY CON, DEL, REN, VOL, DATE, TIME, CLS, PATH, TYPE, VER etc. External - CHKDSK, XCOPY, PRINT, DISKCOPY, DOSKEY, TREE, MOVE, LABEL, FORMAT, SORT, FDISK, BACKUP, EDIT, MODE, ATTRIB, HELP, SYS etc, Executable V/s Non Executable Files in DOS.

UNIT-II: WINDOWS Introduction to Windows XP and its Features, Hardware Requirements of Windows. Windows Concepts, Windows Structure, Desktop, Task bar, Start Menu, My Pictures, My Music, My Documents, Working with Recycle Bin - Restoring a deleted file, Emptying the Recycle Bin. Managing Files, Folders and Disk - Navigating between Folders, Manipulating Files and Folders, Creating New Folder, Searching Files and Folders. My Computer – Exploring Hard Disk, Copying and Moving Files and Folder from One Drive to Another, Formatting Floppy Drive, Windows Explorer and its Facilities, Using Floppy, CD, DVD, Pen Drive, Burning CD. Windows Accessories - Calculator, Notepad, Paint, WordPad, Command Prompt. Entertainment- Media Players, Sound Recorder, Volume Control, Movie Maker.

UNIT-III: WINDOWS Managing Hardware & Software - Installation of Hardware & Software, Using Scanner Web Camera, Printers. SystemTools - Backup, Character Map, Clipboard Viewer, Disk Defragmenter, Drive Space, Scandisk, SystemInformation, System Monitor, Disk Cleanup, Using Windows Update. Browsing the Web with Internet Explorer, Multiple User Features of Windows, Creating and Deleting User, Changing User Password, etc. Accessibility Features of Windows - Sharing Folders and Drives, Browsing the Entire Network, Using Shared Printers. OLE - Embed/Link Using Cut and Paste an Embed/ Link, Using InsertObject Manage Embedded/Linked Object.

UNIT-IV : LINUX: History & Features of Linux, Linux Architecture, File System of Linux, Hardware Requirements of Linux, Various flavors of Linux, Linux Standard Directories, Functions of Profile and Login Files in Linux, Linux Kernel.

UNIT-V : WORKING WITH LINUX: KDE & Gnome Graphical Interfaces, Various Types of Shell Available in Linux, Multi-User Features of Linux, Login and Logout from Linux System, Linux commands - bc, cal, cat, cd, clear, cmp, cp, mv, date, find, ls, pwd, mkdir, more, rm, rmdir, chgrp, chmod, chown, tty, wc, who, whois, grep, telnet, vi editor, Using Floppy, CD-ROM and Pen Drive in Linux, Permissions and Ownerships,

TEXT & REFERENCE BOOKS:

1. DOS QUICK REFERENCE BY RAJEEV MATHUR, GALGOTIA PUBLICATIONS
2. LINUX COMPLETE BY BPB PUBLICATIONS.
3. PETER NORTON COMPLETE GUIDE TO LINUX BY PETER NORTON, TECHMEDIA PUBLICATIONS
4. LEVEL MODULE M 1.1 INFORMATION TECHNOLOGY BY KHANNA BOOK PUBLICATIONS, NEW DELHI,
5. WINDOWS XP COMPLETE REFERENCE, BPB PUBLICATION

PGDCA-103 PC Packages

Max. Marks for theory: 80 Internal Assessment: 20 (Min Passing Marks 40% in each)

UNIT – I : MS Windows: Introduction to M.S. Windows; Features of Windows; Various versions of Windows & its use; Working with Windows; My Computer & Recycle bin ; Desktop, Icons and Windows Explorer; Screen description & working styles of Windows; Dialog Boxes & Toolbars; Working with Files & Folders; simple operations like copy,delet,moveing of files and folders from one drive to another, Shortcuts & Autostarts; Accessories and Windows Settings using Control Panel- setting common devices using control panel, modem, printers, audio, network, fonts, creating users, internet settings, Start button & Program lists; Installing and Uninstalling new Hardware & Software program on your computer.

UNIT – II: Office Packages-Office activates and their software requirements, Word-processing, Spreadsheet, Presentation graphics, Database, introduction and comparison of various office suites like MSOffice, LotusOffice, StarOffice, OpenOffice etc.

MS Word Basics: Introduction to MS Office; Introduction to MSWord; 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.

UNIT-III: Advanced Features of MS-Word: Spell Check, Thesaurus, Find & Replace; Headers & Footers ; Inserting – Page Numbers, Pictures, Files, Autotexts, Symbols etc.; Working with Columns, Tabs & Indents; Creation & Working with Tables including conversion to and from text; Margins & Space management in Document; Adding eferences and Graphics; Mail Merge, Envelops & Mailing Labels. Importing and exporting to and from various formats.

UNIT – IV: 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 Views 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.

UNIT – V: MS PowerPoint: Introduction & area of use; Working with MS PowerPoint; Creating a New Presentation; Working with Presentation; Using Wizards; Slides & its different views; Inserting, Deleting and Copying of Slides; Working with Notes, Handouts, Columns & Lists; Adding Graphics, Sounds and Movies to a Slide; Working with PowerPoint Objects; Designing & Presentation of a Slide Show; Printing Presentations, Notes, Handouts with print options. Outlook Express: Features and uses, Configuring and using Outlook Express for accessing e-mails in office.

Text & Reference Books:

1. Windows XP Complete Reference. BPB Publications
2. Joe Habraken, Microsoft Office 2000, 8 in 1 by, Prentice Hall of India

PGDCA-104 Intro. to Programming and Problem Solving Using C++

Max. Marks for theory: 80 Internal Assessment: 20 (Min Passing Marks 40% in each)

UNIT- I:- Principles of Object Oriented Programming, Software Evolution, Procedure-Oriented programming language Vs Object oriented programming paradigm, Basic concepts of object oriented programming, Benefits of OOP, Applications of OOP.

UNIT -II:- Basic C++ program structure with example, C++ statements, Data types (Basic, user defined, derived) in C++, Operators (Arithmetic, Assignment, Increment, Relational, logical) in C++, type conversions, Looping and decision statements in C++, Programming examples based on unit II.

UNIT- III:- Structures, Functions in C++, function prototyping, call by reference, return by reference, Inline function, default arguments, Const. arguments, Function overloading, friend and virtual function, Arrays in C++, Programming examples based on unit III.

UNIT- IV:- Classes and Objects in C++, Specifying a class, Defining member functions, Nesting of member functions, private member functions, Arrays within a class, memory allocation for objects, Static data members, Static member functions, Arrays of objects, Objects as function arguments, Constructors and Destructors. Programming examples based on unit IV.

UNIT- V:- Inheritance, Derived class and Base class, Single inheritance, Multilevel, Multiple, Hierarchical, Hybrid Inheritance, Virtual base classes, Abstract classes. Concept of Polymorphism, Operator overloading, Programming examples based on unit V.

Text Books :-

1. Object- Oriented Programming with C++ by E. Balaguruswamy.
2. Basics of C++ programming Nishant Kundalia, Firewall Media
3. C++ made simple by M.Kumar (Tata McGraw Hill public.)

Detailed Syllabus for Semester II

PGDCA-201 Internet Concepts and Web Design

Max. Marks for theory: 80 Internal Assessment: 20 (Min Passing Marks 40% in each)

UNIT I: History of the internet, internetworking concepts, architecture, and protocol: switch, router, protocols for internetworking, internet address and domains. Introduction World Wide Web (WWW), working of web browser and web server, Web server and its deployment, N-tier architecture, services of web server, Common gateway interface (CGI), Uniform Resource Locator (URL), format of the URL, Hyper Text Transfer Protocol (HTTP), feature of HTTP protocol HTTP request-response model, Hyper Text Transfer Protocol Secure (HTTPS).

UNIT II: Principles and planning of Web Design: Design for the medium: craft the look and feel, portable design, design for low band width, plan for clear presentation and easy access, Design the whole site: smooth transition, grids for visual structure, active white space, Design for the user: design for interaction, location, flat hierarchy, power of hypertext linking, content decision, Design for the screen, Planning the site, site specification, identity and content goal, analyzing audience, building website development team, filename and URLs, Directory structure, diagram the site.

UNIT III: Introduction to HTML: Introduction to HTML, Elements of HTML syntax, Head and Body sections, Building HTML documents, Inserting text, images, hyperlinks, Backgrounds and Color Control, meta tags, ordered and unordered lists, Table Handling: Table layout & presentation, constructing tables in a web page, Frames: Developing Web pages using frames. Forms and its elements, special tags like COLGROUP, THEAD, TBODY, TFOOT, IFRAME, LABEL etc.

UNIT IV: Introduction to JAVASCRIPT: JavaScript variables and data types, statement and operators, control structure object-oriented programming: Functions, Executing deferred scripts, objects, Messaging in a JavaScript: dialog boxes, Alert boxes, confirm boxes, prompt boxes, JavaScript with HTML, Events, Events Handlers, Forms, Forms array.

UNIT V: Site Navigation and Publishing of Website: Crating usable navigation, Using text based navigation: Linking with text based navigation bar, linking to individual files, linking to document/external document fragments, contextual linking, Using graphics based navigation: using text image for navigation, using icon for navigation. Website Publishing: choosing an internet service provider, buying a domain name, using FTP to upload files, Website testing: testing consideration, user testing, feedback form. Refining and updating contents, working with search engines submitting URLs to search engines.

Text Books:-

1. Joel Sklar: Principles of Web Design, Thomson Learning, Vikas Publisher.
2. Web Technologies- A computer science perspective By Jeffrey C. Jackson, Pearson Education .
3. Thomas A. Powell: HTML complete Reference, TMH
4. The Complete Reference Web Design, Thomas A. Powell
5. Internet and Web Design, Vikas Gupta, DreamTech.
6. B Underdahl and K Underdahl, Internet and Web Page/ WebSite Design, Second Edition, 2001, IDG Books India (P) Ltd.
7. D Comer, The Internet Book, Second Edition, 2001, Prentice Hall of India.

PGDCA-202 Programming with VB.Net

Max. Marks for theory: 80 Internal Assessment: 20 (Min Passing Marks 40% in each)

UNIT-I : Introduction to .NET, .NET Framework features & architecture, CLR, Common Type System, MSIL, Assemblies and class libraries.

Introduction to visual studio, Project basics, types of project in .Net, IDE of VB.NET- Menu bar, Toolbar, Solution Explorer, Toolbox, Properties Window, Form Designer, Output Window, Object Browser. The environment: Editor tab, format tab, general tab, docking tab. Visual development & event driven Programming -Methods and events.

UNIT-II : The VB.NET Language- Variables -Declaring variables, Data Type of variables, Forcing variables declarations, Scope & lifetime of a variable, Constants, Arrays, types of array, control array, Collections, Subroutines, Functions, Passing variable Number of Argument Optional Argument, Returning value from function. Control flow statements: conditional statement, loop statement. MsgBox & Inputbox.

UNIT - III : Working with Forms : Loading, showing and hiding forms, controlling One form within another. GUI Programming with Windows Form: Textbox, Label, Button, Listbox, Combobox, Checkbox, PictureBox, RadioButton, Panel, scroll bar, Timer, ListView, TreeView, toolbar, StatusBar. There Properties, Methods and events. OpenFileDialog, SaveFileDialog, FontDialog, ColorDialog, PrintDialog. Link Label. Designing menus : ContextMenu, access & shortcut keys.

UNIT-IV : Object oriented Programming: Classes & objects, fields Properties, Methods & Events, constructor, inheritance. Access Specifiers: Public Private, Protected. Overloading, My Base & My class keywords. Overview of OLE, Accessing the WIN32 API from VB.NET. COM technology, advantages of COM+, COM & .NET, Create User control, register User Control, access com components in .net application.

UNIT-V : Database programming with ADO.NET – Overview of ADO, from ADO to ADO.NET, Accessing Data using Server Explorer. Creating Connection, Command, Data Adapter and Data Set with OLEDB and SQLDB. Display Data on data bound controls, display data on data grid.

TEXT & REFERENCE BOOKS :

1. VB.NET PROGRAMMING BLACK BOOK BY STEVEN HOLZNER –DREAMTECH PUBLICATIONS
2. MASTERING VB.NET BY EVANGELOS PETROUTSOS- BPB PUBLICATIONS
3. INTRODUCTION TO .NET FRAMEWORK-WORX PUBLICATION
4. MSDN.MICROSOFT.COM/NET/ WWW.GOTDOTNET.COM

PGDCA-203 DBMS/RDBMS with MS Access

Max. Marks for theory: 80 Internal Assessment: 20 (Min Passing Marks 40% in each)

UNIT I : Introduction to database -What is a Database ,Why use a Relational Database, Overview of database design -Data Normalization(Determining tables, Determining Fields, Determining Relationships)Integrity Rules (Primary/Foreign Key, One-to-Many, Many-to-Many, One-to-One) Introduction to MS Access (Objects, Navigation).

UNIT II : Create a Table in MS Access -Data Types, Field Properties , Fields: names, types, properties--default values, format, caption, validation rules Data Entry Add record delete record and edit text Sort, find/replace, filter/select, re-arrange columns, freeze columns . Edit a Tables- copy, delete, import, modify table structure find replace.

UNIT III : Setting up Relationships- Define relationships, add a relationship, set a rule for Referential Integrity, change the join type, delete a relationship, save relationship Queries & Filter – difference between queries and filter ,filter using multiple fields AND,OR ,advance filter Queries create Query with one table ,find record with select query, find duplicate record with query ,find unmatched record with query, run query ,save and change query.

UNIT IV : Introduction to Forms Types of Basic Forms: Columnar, Tabular, Datasheet, Main/Subforms, add headers and footers, add fields to form, add text to form use label option button, check box ,combo box, list box Forms Wizard, Create Template.

UNIT V : Introduction to Reports ,Types of Basic Reports: Single Column, Tabular Report Groups/Total, single table report multi table report preview report print report, Creating Reports and Labels, Wizard .

1. Ms Office XP complete BPB publication
2. Ms Access 2002 fast&easy by Faithe Wempen

PGDCA-204 Financial Accounting and Tally

Max. Marks for theory: 80 Internal Assessment: 20 (Min Passing Marks 40% in each)

UNIT-I :

Meaning and objects of accounting, accounting concepts and conventions, accounting equations, rules of Journalizing; Cash-book, Ledger posting, preparation of trial balance,

UNIT-II :

Trading and profit and loss account and balance sheet with adjustments relating. to closing stock, outstanding expenses, prepaid expenses , accrued income depreciation, bad debts, provision for bad. debts, provision for discount on-debtors and creditors.

UNIT-III :

Inventory pricing , FIFO and LIFO methods; Simple problems of funds flow statement, cost volume, profit analysis.

UNIT-IV:

Standard costing, computation of material and labour variances, budgetary control, preparation of cash budget and flexible budget.

UNIT-V :

Introduction to Tally, Installation, creating a company, various features (accounting, Inventory, Statutory, Taxation etc.) of tally, Accounts Masters creation, Inventory Masters creation, Entering Accounts Vouchers, Entering Inventory Vouchers, Display/Reports in Tally.

BOOKS:

1. Bhattacharya S.K. and Deardan John "Accounting for Management PHI
2. Chadwick "The essence of financial accounting" PHI
3. Dinesh Maidasani. Tally 9.0, Firewall media,
4. Grewal "Introduction to Book -, keeping"
5. Subhash Sharma "Managementcontrol systems" TMH