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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Subject</th>
<th>Theory Marks</th>
<th>Sessional Marks</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGDCA-101</td>
<td>Computer Fundamentals</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>PGDCA-102</td>
<td>Operating Systems</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>PGDCA-103</td>
<td>PC-Packages</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>PGDCA-104</td>
<td>Introduction to Programming and Problem Solving Using C++</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>PGDCA-105L</td>
<td>Practicals based on Operating System and PC-Packages</td>
<td>Practical</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>PGDCA-106L</td>
<td>Practicals based on C++ Programming</td>
<td>Practical</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TOTAL MARKS</td>
<td>500</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Subject</th>
<th>Theory Marks</th>
<th>Sessional Marks</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGDCA-201</td>
<td>Internet Concepts and Web Design</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>PGDCA-202</td>
<td>Programming with VB.Net</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>PGDCA-203</td>
<td>DBMS/RDBMS with MS Access</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>PGDCA-204</td>
<td>Financial Accounting and Tally</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>PGDCA-205L</td>
<td>Practicals based on Web-Design and Tally</td>
<td>Practical</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>PGDCA-206L</td>
<td>Practicals based on Visual Programming and MS-Access</td>
<td>Practical</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>PGDCA-207P</td>
<td>Project Work (Valuation + Viva)</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TOTAL MARKS</td>
<td>600</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note:-

1. 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.

2. 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

3. 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

4. **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.
Detailed Syllabus for Semester I

PGDCA-101 Computer Fundamentals

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


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.


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, ATTIRIB, HELP, SYS etc. Executable V/s Non Executable Files in DOS.


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
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 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:-
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.
PGDCA-202 Programming with VB.Net

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


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–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 recode 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 ,fiend 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.


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 "Management control systems" TMH