Syllabus
Post Graduate Diploma in Computer Application (PGDCA)

Directorate of Distance Education
Mahatma Gandhi Antarrashtriya Hindi Vishwavidyalaya
Gandhi Hills, Post – Hindi Vishwavidyalaya,Wardha

Duration : 01 Year (Minimum) 03 Year (Maximum)

अवधि : 01 वर्ष (न्यूनतम) 03 वर्ष (अधिकतम)

Credit : 40 Credit

क्रेडिट : 40 क्रेडिट

Semester : Two Semester (20 Credit per Semester   )

सेमेस्टर : दो सेमेस्टर (20 क्रेडिट प्रत्येक सेमेस्टर)

Fees/शुल्क :

पाठ्यक्रम शुल्क	प्रवेश शुल्क	नामांकन शुल्क	परिचय पत्र	परीक्षा शुल्क	उपाधि/प्रमाणपत्र शुल्क
2500 (प्रथम सत्र)	200	200	100	250 प्रति प्रश्नपत्र	250
2500 (द्वितीय सत्र)					

निदेशालय के परिपत्र क्र.F.No.023/09/अ.बो.फा./41(पार्ट -1)1628 दिनांक 13/08/2015 के अनुसार

Medium : Hindi/English

माध्यम : हिंदी/अंग्रेजी

Eligibility/योग्यता : Any Graduate/ स्नातक उत्तीर्ण

First Semester:

Paper Code प्रश्नपत्र कोड	Paper Title /प्रश्नपत्र शीर्षक	Credit क्रेडिट
PGDCA-01	कम्प्यूटर: आधारभूत परिचय Fundamentals of Computer	04
PGDCA-02	ऑपरेटिंग सिस्टम एवं एप्लीकेशन प्रोग्राम Operating System and Application Program	04
PGDCA-03	प्रोग्रामिंग लैंग्वेज Programming Language	04
PGDCA-04	C# के साथ ऑब्जेक्ट ओरएंटेट प्रोग्रामिंग OOPS(Object oriented Programming) with C#	04
PGDCA-05	सी प्रोग्रामिंग का व्यावहारिक प्रशिक्षण Practical on C Programming	02
PGDCA-06	एप्लीकेशन प्रोग्राम एवं C# का व्यावहारिक प्रशिक्षण Practical on Application Program and C#	02
	कुलTotal	20 Credits

Second Semester:

Paper Code	Paper Title	Credit
PGDCA-07	डाटा बेस प्रोग्रामिंग Data Base Programming	04
PGDCA-08	विन्डोज और वेब प्रोग्रामिंग के साथ C# .NET C# .NET with Windows & Web Programming	04
PGDCA-09	इंटरनेट एवं वेबपेज डिजाइनिंग Internet and Web Page Designing	04
PGDCA-10	डीटीपी (डेस्क टॉप पब्लिशिंग)DTP (Desk Top Publishing)	04
PGDCA-11	परियोजना कार्य Project Work	04
	कुलTotal	20 Credits

First Semester

PGDCA-01   Fundamentals of Computer

Unit – I   Introduction to Computer
- History of development of computers
- Computer system concepts
- Characteristics
- Capabilities and limitations
- Generations of computers.
- Basic components of a computer system – Control Unit, ALU, I/ O Devices, memory – RAM, ROM, EPROM, PROM, Flash Memory and other types of memory.

Unit – II Storage Devices
- Storage fundamentals – Primary Vs Secondary
- 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 (Winchester Disk), Disks, Optical Disks, CD, VCD, CD-R, CD-RW, Zip Drive, DVD, SVCD.

Unit – III   Computer Software
- Types of Software – System software, Application software, Utility Software, Demoware, Shareware, Freeware, Firmware, Free Software.
- Operating Systems – Functions, Types – Batch Processing, Single User, Multi User, Multi-programming, Multi-Tasking.
- Programming languages – Machine, Assembly, High Level, 4 GL.
- Data representation in computers.
- Number System of computers – Binary, Octal, Hexa Decimal – Representation & their conversion.
- Coding System – ASCII, BCD, and EBCDIC etc.
- Computer Viruses

Reference Book:

1 Sinha, P.K.(2007). *Computer Fundamentals*. New Delhi: BPB Publications.
2. Mukhi, Vijay (2008).*Working with UNIX*. New Delhi: BPB Publications.
3. Rajaraman, V. (2014). *Fundamental of Computer*. New Delhi: Prentice Hall India Pvt. Limited.
4. Rajoriya, Sheetanshu (2013). *Computer Fundamentals*. Indore: Kamal Prakashan.

PGDCA-02 Operating System and Application Program

Unit – I   Disk Operating System (DOS)
•   Introduction, History & Versions of DOS
DOS basics
•   Physical structure of disk, drive name, FAT, file & directory structure and naming rules, booting process, DOS system files.
Basic DOS Commands
•   Internal – DIR, MD, CD, RD, Copy, DEL, REN, VOL, DATE, TIME, CLS, PATH, TYPE etc.
•   External – CHKDSK, PRINT, DISKCOPY, DOSKEY, MOVE, LABEL, FORMAT, SORT, FDISK, BACKUP, EDIT, MODE, ATTRIB, HELP, SYS etc.
•   Executable V/s Non executable files in DOS

Unit –II   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.

Unit – III   Linux
•   Introduction, History & Versions of Linux
Linux basics
•   Physical structure of disk, drive name, FAT, file & directory structure and naming rules, booting process, Linux system files.
Basic Linux Commands
•   Internal – LS, Make Directory, CD, CP,MB, DEL, REN, DATE, TIME, CLEAR, etc.
•   Executable V/s Non executable files in Linux

Unit –IV Microsoft Office (MS Word, Excel, Power Point)

Word Processing: MS Word
•   Introduction to Word Processing
•   Introduction to MS Word: features, Creating, Saving and Opening documents in Word, Interface, Toolbars, Ruler, Menus, Keyboard Shortcut.
•   Editing a Document – Moving, Scrolling in a document, Opening Multi document windows, Editing Text – Selecting, Inserting, deleting, moving text.
•   Previewing documents, Printing documents – Print a document from the standard toolbar, Print a document from the menu, shrinking a document to fit a page, Reduce the number of pages by one.
•   Formatting Documents: Paragraph formats, Aligning Text and Paragraph, Borders and Shading, Headers and Footers, Multiple Columns.

Worksheet: MS Excel
•   Worksheet basics
•   Creating worksheet, entering data into worksheet, heading information, data, text, dates, Cell formatting values, saving & protecting worksheet.
•   Opening and moving around in an existing worksheet
•   Toolbars and Menus, keyboard shortcuts

- Working with single and multiple workbook – coping, renaming, moving, adding and deleting, coping entries and moving between workbooks
- Working with formulas & cell referencing.
- Autosum
- Coping formulas
- Absolute & Relative addressing
- Working with ranges – creating, editing and selecting ranges, sorting.
- Formatting of worksheet – Auto format, changing – alignment, character styles, column width, date format, borders &colours, currency signs.
- Previewing & Printing worksheet – Page setting, Print titles, Adjusting margins, Page break, headers and footers.
- Graphs and charts – using wizards, various charts type, formatting grid lines & legends, previewing & printing charts.

Presentation Graphics: MS Power Point
- Features and various versions
- Creating presentation using Slide master and template in various colour scheme
- Working with different views and menus of power point
- Working with slides – Make new slide, move, copy, delete, duplicate, lay outing of slide, zoom in or out of a slide.
- Editing and formatting text: Alignment, editing, inserting, deleting, selecting, formatting of text, find and replace text.
- Bullets, footer, paragraph formatting, spell checking.
- Printing presentation – Print slides, notes, handouts and outlines.
- Inserting Objects – Drawing and inserting objects using Clip Art's pictures and charts.
- Custom Animation – slide transition effects and other animation effects.
- Presenting the show – making stand alone presentation

Reference:

1. Mansoor, A. *I.T. Tools and Applications*. Matura : Pragya Publications .
2. Norton, Peter (2000.). *Peter Norton Complete Guide to Linux*. New Delhi : Techmedia Publications .
3. Dubey, Manoj (2013). *P C Packages*. Indore : Kamal Prakashan.

PGDCA-03 Programming Language

Unit – I   C Language : Introduction
•   Introduction
•   C Character Set , Constants, Variables and Key words

Unit – II   Decision and Control Structure
•   if ,if-elses, forms of if-elses statement
•   Operator
•   Types of Loops
•   Case and Switch

Unit –III Arrays and Functions
•   Arrays
•   C Functions – Call by values and Call by reference

Reference:

1 Balaguruswami, E. (2008). *Programming with C*. New Delhi : Tata McGraw Hill.
 2 Kernighan,Brian W. & Ritchie, Dennis M. (1988). *The C Programming Language ANSI C*.Prentice Hall PTR
3 Singh, Minakshi & Singh,VishnuPriya .*C Programming*. Delhi : Asian Publisher .
4 Jain, Abhinav. *The Ocean of C*. Indore : Nakoda Publishers & Printers. (7th Edition)

PGDCA-04 OOPS(Object oriented Programing) with C#

Unit 1 Introduction : C# and .NET Framework

What is C#, Characteristics, Overview of C#, .NET Framework, CLR&CTS, Visual Studio.NET, Name Spaces, Programme Structure.

Unit 2 Operator, Expressions and Data Types

Variable Declaration, Value type and reference type, initialization of variables, Default values, Arithmetic, Relational, Logical, Assignment, Increment and Decrement, Conditional Operators, Arithmetic Expression, Evaluation of Expression, Type conversions.

Unit 3 Decision Making, Branching and Looping

 If Statement, else if statement, Nested if else statement, Switch statement, While, do , for, foreach statement.

Unit 4 Arrays, Strings, Classes and Objects

 Array list, Class, String Methods, Inserting Strings, finding substrings, Regular expressions, Defining a class, Member Access Modifiers, Constructors, Overloaded Constructors, Static Constructors, Read-only Members, Properties, Defining a Subclass, Multilevel Inheritance, Overriding Methods, Hiding Methods, Abstract Class, Sealed Classes, Preventing Inheritance, Sealed Methods, Polymorphism.

Unit 5 Windows Application and Visual Interface

Introduction to Visual Studio
Controls
Tools
Properties
Solution Explorer

Reference:
Murach, Joel & Boehm, Anne (2012). *Murach's C# 2012*.Mike Murach & Associates Inc
Khadanga, G.(2004). *C# Programming – Beginners to Advanced* , New Delhi : BPB Publication.
Kanetkar, Yashvant. *C#.NET Fundas*. New Delhi : BPB Publication.
Balaguruswamy(2010). *C#*.New Delhi: Tata McGraw-Hill Education.

PGDCA-05   Practical on C Programming

Each candidate will present a small program with the help of C Programming. Evaluation will be done on the basis of written program, Practical presentation on Computer and Viva.

PGDCA-06   Practical on Application Program and C#

Each candidate will present a small program with the help of Application Program each. Evaluation will be done on the basis of written program, Practical presentation on Computer and Viva.

Second Semester

PGDCA -07 Data Base Programming

Unit–I SQL Basic
- A Brief History of SQL, RDBMS, Creating Database, Table, adding record, T-SQL, Constants, Expression, T-SQL variable, T-SQL Function, String, Math function, aggregate function, Date Time function, conversion function, T-SQL – flow control – if …else, case, while, Go To and return.

Unit –II SQL Command
- DDL Command, DCL command, MDL command, TCL command, Select, having, group by join.

Unit–III RDBMS/DBMS Package
- Introduction to My SQL, Installation, PhP My Admin, Introduction to MS – SQL server, SQL server management, Studio.

Unit – IV Data Integrity
- Database and Table integrity, Entity integrity, Referential integrity, Transaction integrity, Default Value, Check, constraints, foreign key, Primary key, Triggers, Altering Triggers, Dropping Trigger.

Unit – V Stored Procedure and Functions
- Type of stored Procedure, calling stored procedure, passing value, creation use define function .
-

Reference :

1. Cox, Joyce & Lambert, Joan (2013).*Microsoft Access 2013*.Microsoft Press.
2. Web Link
   http://www.pdfiles.com/pdf/files/English/Software/Microsoft_Access_2013_Step_By_Step.pdf)
3. Bayross, Ivan. *Mastering Database Technologies*. New Delhi : BPB Publications.
4. Majumdar, Arun K & Bahttacharya, P. (2008). *Database Management System*. New Delhi : Tata McGraw Hills Publishing Company Limited.
5. Maheshwari, Sharad & Jain, S.(2007). *Database Management System*. New Delhi : firewall Media.
6. Bansal, V& Bhatia, A.B.(2015). Database Management System. New Delhi : Narosa Publishing House.
7. Silberschatz, A. , *Korth*, *H. F. &* Sudarshan, S.(2006). *Database System Concepts*., New Delhi : McGraw Hill.

PGDCA -08 C# .NET with Windows & Web Programming

Unit- 1 Introduction Windows Applications
- Windows Control – Text Box, Label, List – box, combos, radio button , message box, dialogue box , directory control.

Unit-2 ADO.Net
- ADO.Net object, connection, Data Adaptor, Data set server, explorer, Data Bound controls, grid view, data row, data list, data repeater.

Unit-3 Introduction Web Programming
- Introduction ASP.Net, Inline code Model, code behind, server control, application state, session state, view state.

Unit-4 Web forms
- Button, text box, label, file upload control, image control, drop down list, hyperlink, link button, check box, check list box, menu control, validation control, java –script, Range validators, Regular expression, concept of master page, user control, globalization, localization, ASP.Net web services, Forms based authentication, Authorization, Ajax Control, Ajax web services and control, CSS, thems.

Reference :
1 Jerke, Noel (1998). Visual Basic 6.0 The complete Reference. New Delhi : Tata McGraw Hill Publishing Company Limited.
2 Smilly, John(2001). *Visual Basic Database* .New Delhi : Firewall Media.
3 Mauer, Lowell. Visual Basic 6.0 (Hindi). New Delhi: B.P.B. Publisher
4 Naik, Nitin K.(2013). *Basics of Visual Basic*. Indore : Kamal Prakashan.

PGDCA-09 Internet and Web Page Designing

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, Basic of Sending & Receiving, E-mail Protocols, Mailing List, and Free E-mail services, FTP.

Unit – II   World Wide Web (WWW)
- History, Working, Web Browsers, Its functions, Concept of Search Engines. Searching the Web, HTTP, URLs, Web Servers, Web Protocols.

Unit – III   Web Publishing
- Concepts, Domain name Registration, Space on Host Server for Web site, HTML, Design tools, HTML editors, Image editors, Issues on Web site creations & Maintenance, FTP software for upload web site.

Unit – IV   HTML
- Concepts of Hypertext, Versions of HTML, Elements of HTML syntax, Head & Body Sections, Building HTML documents, Inserting texts, Images, Hyperlinks, Backgrounds and Colour controls, Different HTML tags, Table layout and presentation, Use of font size & Attributes, List types and its tags.

Reference :

1 Pawel, Thomas A(2010). *HTML Complete Reference*. New Delhi: Tata McGraw Hill.
2 Web & Graphics .New Delhi: B.P.B Publisher.
3 Singh, Minakshi & Singh,VishnuPriya. Web Designing Course. Delhi : Asian Publisher .
4 Naik, Nitin K.(2014). *Internet Web Technology E- Commerce*. Indore : Kamal Prakashan.

PGDCA-10   DTP (Desk Top Publishing)

Unit 1 PageMaker
Creating a New Document, Entering Text, Saving document, Developing a Paragraph, Formatting Paragraph, Creating a Frame, Inserting & Removing pages, Adjusting Hyphenation, Adjusting Indents and Tabs, Adding Shapes, Changing lines and fill specifications, Changing Round Corner, Creating Header & Footer, Defining Style, Developing a long Document, Using Color, Printing.

Unit 2 Corel Draw
Introduction of CorelDraw, The CorelDraw Menus, The Draw Toolbox, Arranging Objects, Type Casting, Colour & Fills, Special Effects, Printing Document, Save & Close & open file, Export file.

Unit 3 Photoshop
Introduction of Photoshop, Creating a New File, Color Mode, Foreground & background, Using Brushes, Rubber Stamp Options, Using the Editing Tool, Selection Tools, Introduction of layers, Creating Layer Mask, Adding Fills and Gradients, Applying Filters, Printing document, Save file as a **JPEG, TIFF, GIF, PNG.**

Reference:
Bangia, Ramesh (2011). Learning Desk Top Publishing. Delhi : Khanna Book Publishing.
Gupta, Vikas (2004).Comdex Desk Top Publishing Course List. Delhi : Dream tech Press.
Jain, Satish. BPB's DTP Course. New Delhi : BPB Publications.
Dream Tech Press (2012). Photoshop CS6 in Simple Steps. Delhi : Dream tech Press.
Dayley, L D & Dayley, B.(2012). Adobe Photoshop CS6. Wiley.
BPB Adobe Photoshop (2009). New Delhi : BPB Publications.
Sharma, M.C.(2009). Corel Draw : Graphics Suite X4. New Delhi : BPB Publications.
Singh, Vishnupriya (2008). Corel Draw. Delhi : Asian Computech books.
Kogent Learning Solution Inc.(2013). Corel Draw X6 in Simple Steps. Delhi : Dream tech Press.
BPB (2012). BPB Adobe PageMaker 7. New Delhi : BPB Publications.
Behera, S R. & Mishra Debasis (2013). Smart DTP Course. B. K. Publications Pvt. Ltd.

PGDCA-09 Project Work

All the students must submit a project with the help of applications given below :
1. C Language
2. Visual Basics and DBMS
3. HTML

प्रथम सेमेस्टर

PGDCA-01 कम्प्यूटर: आधारभूत परिचय

इकाई 1 – कम्प्यूटर: परिचय
इकाई 2 – संग्रहण डिवाईसेस
इकाई 3 – कम्प्यूटर साफ्टवेअर

PGDCA-02 ऑपरेटिंग सिस्टम एवं एप्लीकेशन प्रोग्राम

इकाई 1 – डिस्क ऑपरेटिंग सिस्टम
इकाई 2 – विंडोज
इकाई 3 – लिनक्स
इकाई 4 – माइक्रोसाफ्ट ऑफिस (एमएस वर्ड, एक्सेल, पॉवर पांइट)

PGDCA-03 प्रोग्रामिंग लैंग्वेज

इकाई 1 – सी लैंग्वेज : परिचय
इकाई 2 – डिसीजन एवं कंट्रोल संरचना
इकाई 3 – ऐरे और फंक्शन्स

PGDCA-04 C# के साथ ऑब्जेक्ट ओरएंटेट प्रोग्रामिंग

इकाई 1 – C# और का परिचय
इकाई 2 – ऑपरेटर्स, एक्सप्रेशन्स और डाटा टाइप्स
इकाई 3 – डिसीजन मेकिंग, ब्रांचिंग और लूपिंग
इकाई 4 – ऐरे, स्ट्रिंग, क्लासेज और ऑब्जेक्ट्स
इकाई 5 –विंडोज एप्लीकेशंस और विजुअल इंटर फेस

PGDCA-05 सी प्रोग्रामिंग का व्यावहारिक प्रशिक्षण
PGDCA-06 एप्लीकेशन प्रोग्राम एवं C#   का व्यावहारिक प्रशिक्षण

द्वितीय सेमेस्टर

PGDCA-07 डाटा बेस प्रोग्रामिंग

इकाई 1 – एसक्यूएल बेसिक्स
इकाई 2 – एसक्यूएल कमांड
इकाई 3 – आरडीबीएमएस/डीबीएमएस पैकेज
इकाई 4 – डाटा इंटीग्रेशन
इकाई 5 – स्टोर प्रोसेड्यूर एंड फंक्शस

PGDCA-08 विन्डोज और वेब प्रोग्रामिंग के साथ C# .NET

इकाई 1 – विंडोज एप्लीकेशन्स : एक परिचय
इकाई 2 – एडीओ.एनईटी
इकाई 3 – वेब प्रोग्रामिंग : एक परिचय
इकाई 4 –वेब फॉर्म्स

PGDCA-09   इंटरनेट एवं वेबपेज डिजाइनिंग

इकाई 1 – इंटरनेट
इकाई 2 – वर्ल्ड वाइड वेब
इकाई 3 – वेब पब्लिशिंग
इकाई 4 – एचटीएमएल

PGDCA-10   डेस्क टॉप पब्लिशिंग

 इकाई 1 – पेजमेकर
इकाई 2 – कॉरल ड्रा
इकाई 3 – फोटोशॉप

PGDCA- 09   परियोजनाकार्य

सभी विद्यार्थियों को निम्नलिखित एप्लीकेशंस में से किसी एक की सहायता से परियोजना कार्य सम्पन्न करना होगा-
C Language,
Visual Basics and DBMS,
HTML.

Proposed Evaluation (PGDCA):

First Semester:

Paper Code/ प्रश्नपत्र कोड	Paper Title /प्रश्नपत्र शीर्षक	Assignment / सत्रीय कार्य	Minimum Passing Marks in Assignment	Semester End Exam/ सत्रांत परीक्षा	Minimum Passing Marks in Semester End Exam	**Total**
PGDCA-01	कम्प्यूटरआधारभूत : परिचय Fundamentals of Computer	30	12	70	28	100
PGDCA-02	ऑपरेटिंग सिस्टम एवं एप्लीकेशन प्रोग्राम Operating System and Application Program	30	12	70	28	100
PGDCA-03	प्रोग्रामिंग लैंग्वेज Programming Language	30	12	70	28	100
PGDCA-04	C# के साथ ऑब्जेक्ट ओरएंटेट प्रोग्रामिंग OOPS(Object oriented Programming) with C#	30	12	70	28	100
PGDCA-05	सी प्रोग्रामिंग का व्यावहारिक प्रशिक्षण Practical on C Programming			50 (10 no. for Program Writing in Copy) (30 no. for Presenting of Program on Computer) (10 no. for Viva)	20	50
PGDCA-06	एप्लीकेशन प्रोग्राम का व्यावहारिक प्रशिक्षण Practical on Application Program	-		50 (10 no. for Program Writing in Copy) (30 no. for Presenting of Program on Computer) (10 no. for Viva)	20	50
					Total	400

Second Semester:

Paper Code/ प्रश्नपत्र कोड	Paper Title / प्रश्नपत्र शीर्षक	Assignment / सत्रीय कार्य	Minimum Passing Marks in Assignment	Semester End Exam/ सत्रांत परीक्षा	Minimum Passing Marks in Semester End Exam	**Total**
PGDCA-07	डाटा बेस प्रोग्रामिंग Data Base Programming	30	12	70	28	100
PGDCA-08	विन्डोज और वेब प्रोग्रामिंग के साथ C# .NET C# .NET with Windows & Web Programming	30	12	70	28	100
PGDCA-09	इंटरनेट एवं वेबपेज डिजाइनिंग Internet and Web Page Designing	30	12	70	28	100
PGDCA-10	डीटीपी (डेस्क टॉप पब्लिशिंग) DTP (Desk Top Publishing)	30	12	70	28	100
PGDCA-11	परियोजना कार्य Project Work	-	-	100 (25 no. for Project Report(Hard Copy)) (50 no. for project Presentation and live demo of Program) (25 no. for Viva)	40	100
					Total	400