

DETAILED SYLLABUS

POST GRADUATE DIPLOMA IN COMPUTR APPLICATION (PGDCA)



Department of Computer Sciences & Application

Sardar Patel University, Balaghat
Sardar Patel Knowledge City, Dongariya, Balaghat (M.P.)

Semester-I**PGD101- Fundamentals of Computers & Information Technology****UNIT-I**

Computer System concepts, Application area, advantage & disadvantage . Components of a Computer system –Control unit, ALU, Input /Output, Memory, Mother Board, Generation of computers, Configuration of Computer system , Types of PCs- DESKTOP, Laptop, Notebook, Palmtop, PDA, Special Purpose computers Supercomputers Characteristics and area of Uses, Primary Vs Secondary Memory, RAM, ROM, EPROM, PROM.

Various Storage Devices, Magnetic Disks, Hard Disk Drives, Floppy, Disks zip Drive, Optical Disks, CD, VCD, CD-R, CD-RW, DVD, DVD-RW , Blue Ray Disc , flash drives SD/MMC Memory cards, solid-state Drive (SSD)

UNIT – II

Input Devices: Keyboard, Mouse Trackball, Joystick , Scanners, Digitizing tablet, Digital Camera, MICR, OCR ,OMR, Light Pen , Barcode & Barcode Reader, Quick Response Code(QR Code), Voice Recognition, Touch Screen.

Output Devices: Monitors – Characteristics and types of monitor, Size, Digital, Analog,, Resolution, refresh Rate, Interlaced/Non-Interlace, Dot Pitch, Video Standard –VGA, SVGA, XGA etc. Printers and its types impact and non-Impact printer, Dot Matrix, Inkjet, Laser, Plotter, #D Printers, Sound Card and Speakers.

UNIT-III

Software and its Need, Types of Software – System Software, Application software, System Software - Operating System – definition & function, Device Drivers & Utility Programs, Introduction & Features of DOS, Windows. Programming Languages- Machine, Assembly, High Level, 4GL, their merits and demerits, Uses of Assemblers, Compilers and Interpreter.

Application Software and its Types- Word Processing, Spreadsheet, Presentation Graphics, Data Base Management, Desktop Publishing , communication, Educational, Graphics & Multimedia, Business Accounting, MIS, Gaming and ERP Software etc.

Computer coding System, _ASCII, ISCII and Unicode, Number system of computer Binary, Octal, Decimal, Hexadecimal their conversion.

UNIT-IV

Use of communication and IT, Communication Process, Component of communication –sender, receiver, transmission medium & protocol, Communication types-Simplex, Half Duplex, Full Duplex. Communication Channels – Twisted, Coaxial, Fiber Optic, Modern –Working and characteristics. Types of network – client/server and peer-to-peer networks, Types of connections – Dialup, Leased Lines, ISDN, DSL, RF, Broad band uses, advantages & disadvantages.

Types of Network – LAN, WAN, MAN, Internet, VPN etc., Topologies of LAN-Ring, Bus, Star, Mesh and Tree topologies – Structure, Use, advantages & disadvantages, Components of LAN-Media, NIC, NOS, Network devices - Bridges, HUB, Routers, Repeater,, Gateways uses, advantages & disadvantages.

UNIT-V

Disk Operating System (DOS) : Introduction, DOS Basics – 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, External-TREE, FORMAT, SORT, FDSIK , MODE, ATTRIB, HELP, SYS etc., Concepts of Free/Open source and proprietary software, applications and use of computer in various fields.

LINUX : History & features, Hardware requirements of Linux, Various flavors of Linux, Linus Standard Directories, Functions of Profile an Login Files in Linux, Linux Kernal, Login and Logout From Linux System, Linux commands –bc, cal, cat, cd, clear, cmp, cp, mv, date, find, ls, pwd, mkdire, more, rm, rmdir,chgrp, chmod, who, whois

Reference Books:

- Fundamentals of Computers, Paperback by Reema Thareja, Oxford University Press.
- Computer Fundaments- 6th Edition by Pradeep K. Sinha, Priti Sinha, BPB Publications.
- Computers Today, A. Ravichandran, Khanna Book Publishing.
- Handbook of Computer Fundamentals by Nasib Singh Gill, Khanna Publishers.

Semester -I**PGD102- PC Packages****UNIT-I**

Operating system (Windows 8.1): Overview of Windows Operating System, Basic Operations-How to start a computer, login, logoff, hibernate, shutdown etc, Personalizing Desktop-Desktop Background, Screen Saver Themes, Setting date & time, Task bar, Files & Folders, Create, Copy, Rename, Moving & Delete Files & Folders, Create & Using Shortcuts, Recycle Bin.

Accessories-Ms Paint, Notepad, Word pad Windows Media Player, Calculator, Games, Math Input Panel, Language Settings-How to set other languages on Computer using Control Panel to add, remove or configuring new or existing devices and software programmes and fonts, Enhance the performance of computer- using Disk Clean-up, using Disk Defragmenter, Using Windows Update, Protecting your computer against viruses.

Using Internet in Windows: Basic Operations using Internet Browser-Working with browser Know about WWW, URL Search Engines, Searching information on Wikipedia Subscribing and reading newspapers online, Typing text in the regional language, Using Google Maps, Working with Google Apps, Online Ticket Booking, Apply for PAN Card/Passport/ Aadhaar Card online, pay electricity bill and service tax online, Booking gas refill online, Downloading eBooks.

UNIT-II

Modern office activities and their software requirements, Introduction to Office Automation Suit, Elements of office suit & area of use, Word-Processing, Spreadsheet, Presentation graphics, Database, Introduction and comparison of various office suites like Apache Open Office, Libre Office, Calligra Suite, WPS office, KOffice, Google Docs & Microsoft Office.

MS Word Basics: Introduction to MS Office (2013) Introduction to MS Word, Features & area of use. Various versions of MS Office and their requirements, Working with MS Word Menus & Commands, Ribbon, Toolbars & Buttons, Shortcut Menus, Wizards & Templates, Creating a New Document, Different Page Views and layouts, Applying various Text Enhancements- Fonts, Styles, Text Attributes, Formatting your Text and Documents: Auto format, Paragraphs and Page Formatting, Line spacing, Margins, Borders and Shading, Tabs and Indents, Text Editing using various features, Bullets, Numbering, Working with Styles, Printing & various print options, Spell Check Working with Headers and Footers.

Tables: Creating a simple table, Creating a table using the table menu, Entering and editing text in a table, selecting in table adding rows, changing row heights, Deleting rows, Inserting columns Deleting columns, changing column width, conversion to and from text.

UNIT-III

Advanced Features of MSWord-Spell Check, Thesaurus, Find& Replace, Files, Auto texts, Symbols etc., Working with Columns Tabs& Indents, Margins,& Space management in Document, Page,

Column & Section Breaks, Adding References, Using footnote and endnote in documents. creating automatic Table of Contents, Using Themes, Watermarks, Inserting Equations & Symbols.

Graphics: Importing graphics, Clipart, Insert Picture, Using Clip Art, Shapes and Smart Art in documents, using drawing features, drawing objects, text in drawing. Taking and inserting Screenshots in Documents, Using WordArt and Drop Cap features in documents. Templates, modifying templates.

Mail Merge in MS Word, Mail Merge concept Envelops & Mailing Labels, Importing and exporting to and from various formats, Macros in MS Word: Macro introduction and their use, recording macros, editing macros, running a macro.

UNIT-IV

MS Excel Spreadsheet Basics & Features , concepts of Workbook & Worksheets, Getting started, Creating a new worksheet, Using Wizards, various Data Types, Selecting cells, Entering and editing text, Entering and editing Numbers, Removing & Resizing of Columns & Rows, entering and editing Formulas, Referencing cells, Moving cells, Deleting parts of a worksheets clearing, parts of a worksheet, Different Views of Worksheets.

Formatting: Page setup, Cell Formatting, changing column widths and Row heights, auto format, changing font sizes and Attributes, centering text across columns, using border buttons and Commands, changing colors and shading, hiding rows and columns, Working with Data & Ranges, Column Freezing, Labels, Hiding, Splitting, Merging, etc.

UNIT-V

MS Power point: Introduction & area of use, Working with MS Power point, 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, shapes, screenshots, Smart Art and chart in Designing & Presentation of a Slide Show, change Slide backgrounds, Change Slide Size, Using Animation and Transitions in presentation, Advanced Slide options Manual & Automatic, Printing Presentations, Notes, Handouts with print option Slide Master, Handout Master and Notes Master.

Outlook Express: Features and uses, Configuration and using Outlook Express for accessing emails in office, Add e-mail accounts to Outlook, Create emails, send and receive emails in outlook.

Reference Books:

- Introducing Windows 8.1 for IT Professionals Technical Overview, ED BOTT, Microsoft Press e-book download from [http:// blogs.msdn.microsoft.com/Microsoft press/2013/10/14/free-ebook-introducing-windows-8-1-for-it-professionals/](http://blogs.msdn.microsoft.com/Microsoftpress/2013/10/14/free-ebook-introducing-windows-8-1-for-it-professionals/)
- Windows 8.1 by Pert Mason, Bookboon Download online at <http://bookboon.com/en/windows-8-1-english-ebook>.
- Windows 8.1 in Depth, by Knittel PEARSON

- Windows 8.1 Plain and Simple by Joli Ballew, NancyMuir, PHI
- MCSA Microsoft Windows 8.1 complete Study guideL Exams 70-687, 70-688, Jeffrey R. Shapiro, Darril Gibson, Wiley India
 - Windows 8.1 for Dummies By Andy Rathbone, Wiley India
- Office 2013 in Simple steps, Kogent Learning Solutions Inc., Wiley India.
- Microsoft Office 2013 Bible, Lisa A. Bucki, John Wlkenbach, FaitheWempen, Michael Alexander, Dick Kushleika, Wiley India
- Microsoft Office:2013 Edition Inside Out, Bott Ed, Siechert,Carl, Prentice Hall Of India(PHI)
- Microsoft Office professional 2013 step by step, Melton, Beth, Dodge, Mark, Swinford, Echo, Couch, Andrew, Legault, Eric, Schorr, Ben M., Rusen, Ciprian Adrian, Prentice Hall Of India(PHI)
- Learning Microsoft Office 2013, Paperback by Ramesh Bangia, Khanna Book Publishing.
- Microsoft Office 2013 : Digital Classroom, Paperback by Walter Holland, ACI Creative Team, WILEY
- Load Microsoft Word & type the following text and do the following tasks:

Semester-I

PGD102P- PC Packages

Television

How does television affect our lives? It can be very helpful to people who carefully chose the shows that they watch. Television can increase our knowledge of the outside world, there are high quality programmers that helps us to understand many fields of study, science, medicine, the arts and so on. Moreover, television benefits very old people, who can't often leave the house as well as patients in hospitals. It also offers non native speakers the advantage of daily informal language practice. They can increase their vocabulary and practice listening.

On the other hand, there are several serious disadvantages of television. Of course., it provides us with a pleasant way to relax and spend our free time, but in some countries, people watch the 'blood tube' for an average of six hours or more a day. Many children stare at a television screen for more hours each day than they do anything else including studying & sleeping. It's clear that the tube has a powerful influence on their lives and that its influence is often negative.

1. Save your work as "Television" on Desktop.
2. set the heading : Font Times New Roman size 18, Align centre & Bold,
3. Set the remaining text with font Calibri & size 12.
4. Underline the heading & change all letters to uppercase
5. Run the spell checker.
6. Apply indentation to the first line of the second paragraph.
7. Change the line spacing of the paragraphs to 1.5
8. Replace the word "Screen" with monitor.
9. Apply a 6pt width page border to the document.
10. Change the Page orientation to landscape.

Q. Type the given text in similar format using list in the word:

1. Select the first, then hold CTRL whilst selecting the rest.
 - Right click on them
 - double click on them
 - Double click on them
 - Use the TAB button
2. How do you get capital letters using just one finger?
 - Use the SHIFT LOCK key
 - Use the TAB Key
 - Use the ESCAPE key
 - use the CTRL key

3. What is the short cut for copying data to the clipboard?

- CTRL + C
- CTRL + X
- CTRL + Z
- CTRL + V

• Create a table as shown below

STUDENT NAME		MARKS1	MARKS2
First name	Last Name		

1. Enter the detail in the table
2. Insert one row after marks 2 and name its heading as Total
3. Calculate total of Marks1 & Marks2 and enter in Total Column
4. Bold the student name, Marks1, Marks2, & Total.
 - Send a letter to you classmates using mail merge.
 - Write about introduction of computer and insert pictures related to it.
 - Open Microsoft Excel and perform the following
5. Input experimental data into Microsoft Excel worksheet.
6. Property format and organize data inserted
7. Perform calculations in Microsoft Excel using formulas and various built-in functions.
8. Generate simple and effective tables and graphs to describe experimental data in Microsoft Excel.
9. Integrate both graphs and tables created in Microsoft Excel into Microsoft word document.
10. Present Power Point Slides to explain various input devices.
11. Present Power Point Slides to explain various output devices.
12. Present Power Point Slides to show various tourist places of Madhya Pradesh.
13. Apply text and slide transitions.
14. Insert image & sound file in Presentation.

Semester-I**PGD103 –DATABASE USING MYSQL****UNIT-I**

Introduction to database concept , Need of database, Flat Database, Database Management System, Characteristics of DBMS, Relational Database, Entity and Referential Integrity, Database Concept of primary key, Database Application Example, Banking Railways, School, Retail Store, Database Elements- Tables, Query, Form, Report, Introduction to client Server Paradigm

UNIT-II

My SQL Database, Its Features, Installation on Windows, Making it works on Command Line, Using the Built in Database, Running and Shutting down My SQL Server, Setting up My SQL user account. Create and DROP database, Important Administrative My SQL database commands Commands- SHOW DATABASE, USE DATABASE, SHOW TABLES, SHOW COLUMN, and SHOW INDEX

UNIT-III

Database Query Commands DDL,DML, DCL Creating Tables Using SQL Commands, Using various Data Types, Applying constraints on Tables, Updating, Deleting My SQL Tables , Inserting Data, Updating and Deleting Data – Retrieving Data From a My SQL Database- Sorting Data Retrieved from a My SQL Database- Where to Filter data SQL Functions and Operator control flow functions- My SQL Users and Security- Administering and Monitoring My SQL using the My SQL Commands.

UNIT-IV

Examples Applications for My SQL database Workbench and PhpMyAdmin Graphical user Interface of PhPMyAdmin, PhPMyAdmin Features, Installation, Use of different section of phP my Admin Managing database with PhP MyAdmin, Browse, Structure Search, Insert, Empty, Drop, Create new tables and add data, execute My SQL with SQL tab.

Reference Books:

- A Guide to MySql Philip J Pratt
- Learning My Sql Seyed MM Tahaghghi O' Reilly Publications
- <http://dev.mysql.com/doc/refman/5.6/en>
- <http://www.analysisandsolutions.com/code/mysql-tutorial.htm>

Semester-I**PGD103P –DATABASE USING MYSQL**

Q. Create New Database name "Student" (with relevant data type) and add following records:

Roll No.	FNAME	SNAME	CITY	COURSE	FEE-DEPOSITED
100	ANIL	VRCE	BHOPAL	DCA	1000.00
101	SUNIL	RANA	DELHI	DCA	500.00
102	MEHUL	KOSHIK	BOMBAY	PGD	1500.00
104	MADHURI	CHANDI	PATNA	BCA	1200.00
105	PRAMOD	MEHRA	NAGPUR	DCA	2000.00
106	SANDIP	DHEER	NAGPUR	PGD	1200.00
107	SHIVANI	VIRAR	SURAT	PGD	1000.00
108	KRANTI	NEHRU	NEHRU	DELHI	500.00
109	MINU	POWAI	BHOPAL	PGD	700.00
110	VINOD	SINHA	BHOPAL	BCA	800.00

Perform the following operation on above database.

- To display all records in the database.
- To display records based on some conditions.
- to display the structure of the database.
- To display FNAME and city whose course name is DCA
- To delete current record
- To delete records based on some condition
- To delete all the records in current database
- To replace all BOMBAY with MUMBAI
- To Give detail of FNAME & SNAME having fees deposited between 1400 and 3000.
- Modify the table and one more field "INSTITUTE_NAME" and all the data.
- Sort/Index with city.
- Sort/Index with FNAME & SNAME
- To count the number of records in the database.
- To calculate the total fees deposited.
- To input records and add them in the database.
- Find the name of the student who deposited minimum fees.
- To display the sum of fees deposited by all DCA students
- To display the sum of fees deposited in each course

- Add one more column "FINE" in table and insert 50 Rs. in each record.
- Add one more column "TOTAL" in table and update the table as $TOTAL = FEE_DEPOSITED + FINE$
- Delete the column "TOTAL"
- Create two tables with attribute of your choice and perform the Join operation create form to input data using various controls.

SEMESTER – I**PGD104 - Programming With VB.NET****UNIT –I**

Object Oriented Programming Language – Object Oriented Programming Concepts, Object Oriented programming compared to Traditional Programming Objects, Messages, Methods and Classes. Control Structures, Inheritance and Polymorphism, Advantages, Usage, Usage, Program development environment.

UNIT-II

Introduction to .NET, .NET Framework features & architecture, CLR, Common Type System, MSIL, Introduction to visual studio, Visual BASIC, visual BASIC, visual development & event drive Programming, Methods and events, Variables, Data Type of variables, Classes & Objects, Simple project in VB.NET, constructor, inheritance, Access Specifiers, Overloading.

UNIT-III

Scope & lifetime of a variable, Arrays, Collections, Subroutines, Functions, Control flow statements conditional statement, loop statement. MsgBox & Input box, Forms: Loading, showing and hiding forms, Methods and events, GUI Programming with Windows Form, Textbox, Label, Button, Simple projects in VB.NET using these controls.

UNIT-IV

More advanced tools, List box, Combo box, Checkbox, Picture box, Radio Button, Panel, scroll bar, Timer, Dialog boxes, Designing menus, Advanced projects in VB.NET using these controls.

UNIT-V

Database programming with ADO.NET Accessing Data using Server Explorer, Creating Connection, Accessing Data using data Adapters and datasets, using command & Data Reader, data bind Controls, displaying data in data grid. Processing Access database using ADO.NET Object model, Connection object, Command object, Add, delete, move & update records to dataset. Projects in VB.NET using database.

Reference Book (Based on Visual Studio 2010 or Above):

- Vb.Net Programming Black Book By Steven Holzner Dreamtech Publications
- Mastering Vb.Net Evangelos Pet Routsos - Bpb Publications
- Introduction To .Net Framework – Worx Publication MSDN. Microsoft.Com/Net Www.Gotdotnet.Com
- Vb.Net Back Book By Steven Holzner Dreamiech.

PGD104 - PROGRAMMING WITH VB.NET

- Design the digital watch using Timer Control.
- Write a program for Book Issue module of Library Management System.
- Write a program to input marks of 3 subject ENGLISH,HINDI, and MATHS as input on console. Display total marks, percentage and find the subject in which lowest marks is obtained.
- Design the following form. So that when user selects and clicks the arrow button it performs the required result.
- write a program for performing the functions of a simple & Scientific Calculator.
- Write a VB.NET program to accept any character from keyboard and display whether it is vowel or not.
- Write a Program to Add, Subtract., Multiply and Divide any two numbers by using Input and Message box.
- Design the following form. So that when user clicks on Radio Button then select appropriate check box.
- Write a Program to find smallest number using array.
- Write a Program Using a list box and combo box.
- Create one Text Box and one Button When you click Button, Text Box will show "HELLO WORLD"
- Design the following Tic-tac toe game:
- write an application to swap any two elements of array. Take index numbers of both as input.
- Design the following Login Form and make it functional
- Write a program for creating a new Word Editor.
- Write a Program to Add, Subtract, Multiply and Divide any two numbers by using Input and Message box.
- Write a Program to print any number table with standard format.
- Write a program to display first 10 even numbers and add them using five formats of looping.
- Create a Program for launch of a rocket on the screen.

Department policies on admission to and graduation from Computer Science Specializations. Please note the following department policies regarding admission through the department's application process and graduation from CPSC specializations. Note that these policies do not apply to the Science Second Year application process (<https://science.ubc.ca/students/degree/apply>). As of July 1 2020, the department will not accept applications from students who: have 4th year standing. have 3rd year standing and have completed more than 90 credits in their degree program. These criteria will be based o Department of Computer Science. Our highly-ranked department offers excellent graduate prospects and strong links to industry. Undergraduate study. Join us in a supportive, well-equipped and creative environment to help you reach your full potential. You'll develop a sound knowledge base and a range of skills that are valuable to a career in computer science. Undergraduate courses in computer science. Our research is strongly interdisciplinary and combines practical application with a theoretical understanding. People in the Department of Computer Science. Find a member of staff in the department. Centre for the Analysis of Motion, Entertainment Research and Applications (CAMERA). Computer Science is suitable for students who wish to develop sophisticated application programs, especially with regard to communication and automation. Media Informatics: Students learn to design and realize multimedia applications in the field of new media (e.g. Internet). Business Information Systems is suitable for students interested in the basics of information technology, topics regarding the value chain in enterprises and their IT-support. Mobile Computing " during the last years Mobile Computing has become a new part of Computer Science. Ina Guenther. Departmental Adviser. Department of Computer Science Media Informatics. Hochschule Hof Alfons-Goppel-Platz 1 95028 Hof. Room: B 131 Phone +49 (0) 9281 / 409 4930 Fax: +49 (0) 9281 / 409 55 4930 E-Mail: ina.guenther.