INSTITUTE OF HUMAN RESOURCES DEVELOPMENT

DIPLOMA IN COMPUTER APPLICATIONS
(6 Months)

Subjects of study and Scheme of Assessment

(Scheme-2011)

Code	Subject	No. of Hrs/Week		Minimum Marks			Maximum Marks		
		L	P	W/P	CE	T	W/P	CE	T
DCA101	PC Hardware & Operating Systems	2	-	25	25	50	50	50	100
DCA102	Office Automation Packages	2	-	25	25	50	50	50	100
DCA103	Networking & Web Technology	2	-	25	25	50	50	50	100
DCA104	Computer Lab-1 *(Windows,Linux,PC Hardware)*	-	3	25	25	50	50	50	100
DCA105	Computer Lab-2 *(Office Automation Packages)*	-	3	25	25	50	50	50	100
DCA106	Computer Lab-3 *(Network,PCSkills,Internet)*	-	3	25	25	50	50	50	100
Total Duration : 300 Hrs*(in 6Months)*				TOTAL MARKS :			300	300	600

* L - Lecture   P - Practical   W - Written   CE – Continuous Evaluation   T – Total

[SCHEME 2011]

DCA101   PC HARDWARE & OPERATING SYSTEMS

Duration: 40 Hrs

Module 1 – Computer Fundamentals   **(10 Hrs)**

Concept of Hardware and Software - Block diagram - functional units - Input, Output, Memory, CPU. (2 hrs)
IO-Devices - Familiarization of IO-Devices - Keyboard, mouse (optical, wireless), scanners – Monitor - Type of monitors(CRT, LCD) - LCD projector – Printers -Type of printers - Dot matrix, Inkjet, Laser, Thermal. (4 hrs)
Memory - Primary memory - RAM, ROM, Flash memory - Secondary Storage - Hard disk - concept of track, sector, cylinder, Storage capacity, SMART(concept only), Hard disk types - SATA,SCSI, SAS - Optical storage devices - CD, DVD - Flash disk. (2 hrs)
Central Processing Unit – Microprocessor - concept of ALU and control unit - familiarization of latest processors (Intel, AMD etc.), Multi core processors - Concept of Cache memory.(2 hrs)

Module 2 - Windows   **(8 Hrs)**

Operating system Overview – Definition - Functions-as a resource manager, as an Interface - CUI,GUI - Structure of OS - Kernel, Shell - POST and Bootstrapping. (2hrs)
Windows - Shell commands - (DATE, TIME, DIR, COPY, REN, DEL,MD, CD, RD, TYPE, etc.),
Files and Folder manipulation - create, copy, move, rename, delete - Sharing of folder and printer - Managing user accounts. (6hrs)

Module 3 – Linux   **(7 Hrs)**

Concept of open source software - Linux – Different distribution of Linux - Features of Linux - login, Shell commands in linux (ls, date, cp, mv, rm, mkdir, rmdir, cd, cat, man, who etc.) - Files and folder manipulation in Linux GUI - User management - Concept of Linux directory structure. (5hrs)
Comparison of Windows and Linux operating systems.(2hrs)

Module 4 - PC Hardware   **(10 Hrs)**

Identification of Hardware components - motherboard, processor, memory (DDR1,DDR2,DDR3), HDD, DVD writer, Graphic system(AGP,PCI Express) - SMPS - NIC (2hrs)
Ports - serial, parallel, USB, PS2, audio ports, Ethernet. (1hrs)
Device Driver installation (Printers, scanners etc.) (3 hrs)
Device connectivity - Ethernet, Blue tooth, wireless, mobile connectivity, modem.
Sample system specification for home, office and special purpose computers. (4hrs)

Module 5 - OS Installation   **(5 Hrs)**

Configuring system - Hard disk Partitioning – formatting - CMOS setup – Display and audio configuration. (2hrs)
Case study of OS installation (windows, Linux) - Service pack - OS updation - concept of boot loader - software installation (3hrs)

Reference:-
   1. Computer Fundamentals - B RAM
   2. O'Level computer fundamentals – V K Jain – BPB
   3. Upgrading and repairing PC's – Que publications
   4. http://www.pctechguide.com
   5. http://en.wikipedia.org/wiki/linux

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[SCHEME 2011]

DCA102 OFFICE AUTOMATION PACKAGES

Duration: 40 Hrs

Module 1 - Word Processing   (10 Hrs)

Introduction – Menu – Tool bar – Document – creation, editing, saving, opening- Text – editing , deleting, inserting, selection, moving, copying, converting case, find & replace, redo/undo - Formatting document – paragraph formatting – applying styles , header and footer, bullets and numbering, format painter ,line spacing – page layout – numbering pages - inserting section break – spell check - news paper column - Printing Document - page setup, inserting picture
Tables - creation, editing, formatting, insertion, merging, splitting rows and columns, document with tables. Mailmerge and template creation.

Malayalam computing
Familiarization of Malayalam fonts, Malayalam Transliteration, Enabling Malayalam in Windows and Linux.

Module 2 - Spreadsheets   (13 Hrs)

Electronic spreadsheet features, work book, work sheet, menu, cells - entering data, text, functions – selecting cell – ranges- saving work sheet- editing work sheet data – copying , cut & paste - inserting , deleting rows, columns, cell ranges- find and replace data – Formatting work sheet – Changing column width, row height , aligning data – controlling text within a cell - changing font size, style - applying border, pattern styles.
Charts - different types - titles and legend, saving , moving and copying between sheets.
Formulas, functions - entering formulas- cell references –functions (sum, average, if, count, max, min, sin, sumif, hyperlink) - working with range names
Printing – print preview - setting print area - headers and footers- inserting, removing page break - cell protection, freezing columns - data - auto filter, sorting - hiding and displaying data .

Module 3 - Presentation Software   (7 Hrs)

Create presentation with back ground – inserting pictures and images - change position or lay out of pictures – Apply 3D effect, shadows, back ground fill colors, textures and pattern. – multimedia – insert sounds and movies - slide transition - introduce animated objects.
Slide show set up - insert navigation to slides- presentations and URL's – apply and edit timings – create a customized slide show.

Module 4 - DTP   (6 Hrs)

Desktop publishing software and its functionality - working with publication, new publication, opening a publication, drawing tools- grouping and ungrouping, control palette, power pasting, paste multiple, Importing graphics, place commands, cropping tools, text tools – adding, changing and manipulating text – importing text – placing text, threaded text, master pages, character specification and paragraph specification.

Module 5 - Introduction to Database   (4 Hrs)

 Introduction to database, tables, data types, fields, rows, columns – creation of a database - adding , editing, deleting and saving data , displaying data.

References:

1. Office 2003 All-in-One Desk Reference For Dummies
2. Office 2003 Bible
3. Adobe PageMaker 7.0 Classroom in a Book
4. Pagemaker 7: The Complete Reference

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[SCHEME 2011]

DCA103   NETWORKING & WEB TECHNOLOGY

Duration: 40 Hrs

MODULE 1.   Networking Concept   **(10 Hrs)**

Concepts of computer network - need and advantages -   concept of LANs   & WANs - serial & parallel data transmission – networking components-wired & wireless - Transmission media - bounded and unbounded media - UTP cables, fiber optic, microwave & satellite link - NIC cards, Ethernet port ,switches, Modems – Concept of IP addresses , subnet mask.

Module 2. Internet   **(5 Hrs)**

Internet Basics - URL,Domain - concept of DHCP,DNS,router & gateway. Internet Access methods (DSL, Cable, wireless) - www - Web protocols (HTTP, HTTPS, FTP) – Internet configuration – Linux & Windows - Concept of firewall, Proxy server, Web server.

Module 3. Email & Search Engines   **(8 Hrs)**

Browsers - different browsers, managing web browser , Options and settings , plugins - Search engines - search techniques (site, type,date, range, domain, country etc) - downloading and saving web documents - download managers - Instant messengers - ftp client software(Cute FTP, FileZilla etc)
Email - email id creation,compose,attach,send,inbox,spam,trash,CC,BCC,address book,reply& forward , searching - Blog creation.
Introduction to Web Forms (Familiarisation of Online Forms like PSC application, E-grantz, Keralapsc.org, mvd.org)

Module 4. HTML   **(15 Hrs)**

Introduction to Hyper Text Mark-up Language - Concepts of HTML, The structure of a HTML page.
HTML tags - HTML Headings – Paragraphs –Font - List - Links – Images - Line Breaks - Text Formatting Tags – Embedding video/audio in HTML– Tables .
HTML Forms and Input - Colours - Colour Values, Web Standard Colour Names –Form Tag.

Creating a web site using FrontPage/Dreamweaver .

Module 5.   WEB   Utilities & PC Skills   **(12 Hrs)**

Font Installation in windows and Linux (including Malayalam) - Concept of Unicode.
File formats (html,Jpeg,GIF,tiff,bmp,avi,mp3,mp4,3gp,doc,zip,tar,swf,flv etc.) - File conversion utilities (eg:-DOC to PDF, HTML to DOC, RTF to PDF etc) - Web Documents – PDF document creation ,Google Docs.
Video conferencing - WEB Cam & Microphone, Concept of Web Casting - Anti virus software - DVD Burning using software like Nero , CD/DVD creator in Linux etc.
Concept of Cyber security (phishing, id theft,spoofing,Denial of Service etc) and Cyber laws.
Image Editing - image resize, crop, rotate etc using paint/GIMP/Photoshop or any other software.

Refferences :

1.   http://www.internet101.org/
2.   http://en.wikipedia.org/wiki/Internet
3.   http://www.internet101.org/welcome-to-internet-101/terminology
4.   http://www.internet4classrooms.com/index.htm
5.   http://www.comptechdoc.org/independent/networking/guide/netguide.pdf
6.   http://www.lantronix.com/resources/networking.html
7.   http://www.networktutorials.info/
8.   http://file-convert.com/onl_ff.htm
9.   http://en.wikipedia.org/wiki/Antivirus_software
10. http://www.us-cert.gov/cas/tips/
11. http://www.cyberlawsindia.net/
12. http://malayalam.kerala.gov.in/index.php
13. http://wiki.smc.org.in/

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[SCHEME 2011]

DCA104   COMPUTER LAB -1
(Windows,Linux,PC Hardware)

Duration : 60 HRS

Module 1 – Windows **(20 Hrs)**

Familiarization of windows Desktop, taskbar, icons, mouse operations, utilities - paint , notepad etc.
Shell commands - DATE, TIME, DIR, COPY, REN, DEL, MD, CD, RD, TYPE etc.
Files and Folder manipulation - create, copy, move, rename, delete

windows explorer - control panel - recycle bin - Sharing of folder and printer –
Managing user accounts - Desktop management - Searching files.

Module 2 – Linux **(15 Hrs)**

Shell commands in linux (ls, date, cp, mv, rm, mkdir, rmdir, cd, cat, man, who etc.) –
Files and folder manipulation in linux GUI - User management - Familiarisation of Linux file system -
Mounting Windows partitions.
Familiarisation of Linux utilities - Calculator, Text editor etc.

Module 3– PC Hardware **(10 Hrs)**

Identification of Hardware components - motherboard, processor, memory(DDR1,DDR2,DDR3), HDD, DVD writer, SMPS - NIC.
Identification of connecters and slots in motherboard.
Ports - serial, parallel, USB, PS2, audio ports.
Identifying configuration of a system (Through CMOS, Windows or any other software).
Installing and connecting various Devices   -   Printers, scanners, Ethernet, Blue tooth, wireless, mobile, modem, projector - Install printer cartridges

Module 4 – OS Installation **(15 Hrs)**

Familiarizing Hard disk Partitioning – formatting - CMOS setup – Display and audio configuration.
OS installation (windows & Linux)

Configuring Windows - Service pack installation - OS updation - software installation – network configuration.

Configuring Linux system – creating user accounts – configuring networking.

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[SCHEME 2011]

DCA105   COMPUTER LAB - 2
(Office Automation Packages)

Duration : 60 HRS

Module 1: Word Processing (Word and Writer)   (20 Hrs)

Word processing packages – features – Menu – Tool bar – window parts , creating a document, saving, editing – formatting text – selection, copying, Moving, Deleting, Inserting , Undo, Redo, News paper column – Formatting paragraph – Margins and gutters, applying styles, Find & Replace, headers, footers, line spacing, page layout, page numbering, inserting section break – spell check, Tables – creation,merging,splitting rows and columns, formatting - Converting doc file to pdf format - Manipulating downloaded web documents using word processor- mailmerge - printing a document.

Malayalam computing : Installation of Malayalam fonts like rachana, meera, kartika etc.- enabling Malayalam in windows and linux. - get phonetic keyboard using varamozhi in Windows and using swanalekha   in linux

Module 2 : Spreadsheet (Excel and Calc)   (20 Hrs)

Electronic spread sheet, features, Menus, Cells, Rows, Columns, Saving worksheet, Workbook – selecting cells, entering, copying formula, Autosum, functions, Rearranging worksheet – moving, copying, deleting, filtering data , sorting – Formatting Cells & cell content, find & replace, spell check, insert / delete row, column, freezing , splitting, Hide / Unhide, cell protection – drawing graph, Title, legends, saving, if command, moving and copying between sheets- formula, functions (sum, average, if, count, max,min, sin, sumif, hyperlink) and macros – entering formula – cell reference –- working with range names . Transferring spreadsheet information to a word document. Printing worksheet-setting Print area.

Module 3 : Presentation (Power Point and Impress)   (8 Hrs)

Starting presentation software, menu bar, title bar, status bar, tool bar – creating new presentation by using blank presentation , by using template- viewing presentation – slide- insertion, deletion – enter, edit and create new text object – change and correct text, spell check- enhance a presentation – color, style, color schemes, add header and footer, add clipart picture , graphic objects, other objects, align objects – set transition , animate objects on a slide , add sound and movies, adding links to a slide. Printing slides.

Module 4 : Page maker   (10 Hrs)

Working with publication – new publication – opening a publication – drawing tools – grouping and ungrouping , control palette, power pasting, paste multiple – importing graphics , place commands , cropping tools, text tools- adding , changing and manipulating text – importing text- placing text , threaded text, master pages- character specifications – paragraph specification – Column and page break – Spelling check – style sheets – paragraph styles. Printing publication. Create pdf

Module 5 : Introduction to Database (Access or Base)   (2 Hrs)

Creation of a database- adding , editing, deleting and saving data , displaying records.

References:
1. http://www.free-training-tutorial.com/
2. http://www.malayalam.kerala.gov.in

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[SCHEME 2011]

DCA106   COMPUTER LAB - 3
(Network,PCSkills,Internet)

Duration : 60 HRS

Module 1. Networking Concept   (5 Hrs)

Familirisation of Network Components- cable, connector, switches, hub, access point, NIC
Installation of network driver demo.
Connecting a system to a network
Assignment of IP address and subnet mask, Gateway in Windows & Linux.
Usage of trouble shooting commands (ping, ipconfig, ifconfig, traceroute, mii-tool)

Module 2. Internet   (6 Hrs)

Demonstration of Internet connection methods(DSL, Cable, Wireless) -Linux& Windows.
Demonstration of Proxy server and firewall configuration.
Demonstration of Webserver (Apache/IIS) installation & configuration.

Module 3. E-mail & Search Engines   (15 Hrs)

Browser settings - Plug-in installation
Searching - Google (Filetype, image, site, date, country, domain, range etc)
E-mail- email id creation, compose, attach, send, inbox, spam, trash, CC, BCC, address book, reply, forward &
searching.
Blog creation.
Familiarization of sites like www.IRCTC.com, www.Keralapsc.org, www.mvd.org,
http://civilsupplieskerala.gov.in,http://www.ceo.kerala.gov.in/eregistration.html,
http://www.cyberkeralam.in:8888/berker/ etc.
Downloading and saving web documents - download managers - Instant messengers – ftp client software(Cute
FTP, FileZilla etc)

Module 4. HTML   (20 Hrs)

HTML tags - HTML Headings – Paragraphs –Font - List - Links – Images - Line Breaks - Text Formatting Tags.
Embedding video/audio in HTML– Tables .
HTML Forms and Input - Colours - Colour Values, Web Standard Colour Names –Form Tag.

Creating a web site using FrontPage/Dreamweaver .

Module 5.   WEB   Utilities & PC Skills   (14 Hrs)

Font Installation in windows and Linux (including Malayalam) -
Enabling Unicode in Linux & Windows.
File formats (html,Jpeg,GIF,tiff,bmp,avi,mp3,mp4,3gp,doc,zip,tar,swf,flv etc.)
File conversion utilities(eg:- DOC to PDF, HTML to DOC, RTF to PDF etc)
Web Documents – PDF document creation ,Google Docs.
Video conferencing-WEB Cam & Microphone.
Anti virus installation.
DVD Burning using software like Nero , CD/DVD creator in Linux etc.
Image Editing-image resize, crop, rotate etc using paint/GIMP/Photoshop or any other software.
Image Scanning.
Network Printing

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[SCHEME 2011]   **DIPLOMA IN COMPUTER APPLICATIONS**

Question paper pattern

Duration of Exam. : 2 Hrs.

Maximum marks   : 50

Part - A   Multiple choice / fill in the blanks type questions

Part - B   Short Answer type Questions with answer size up to 1 page per question.   Each question in this part may have multiple parts with total 5 marks for full question.

Marks Distribution

Part	No. of questions.	Need to be answered	Marks/Question	Total marks
A	10	10	1	10
B	12	8	5	40
Total	22	18	…	50

Remarks:

1. Each part should cover questions from each module in the syllabus.

2. The level of difficulty shall be as follows

  i) Easy Questions   : 30% -40%
  ii) Intermediate level to difficult : 30% -40%
  iii) Difficult questions : 20% -30%

3. The question paper setters shall prepare and submit the question papers as per the following guidelines.

  i)   Question paper must be designed and prepared to fit in an A4 size paper with one inch margin on all four sides.
  ii)   Prepare the Question in MS-Word/Open office-Writer document format. Use "TimesNewRoman" font with size 10 only.   Align text to both left and right margins.
  iii)   Please leave 5 cm. free area at the top of the front page of each question paper to place examination details/Question paper header by the examination department.
  iv)   Avoid placing 1 or 2 questions in the last part in a fresh page, unless it is absolutely necessary. In such case, try to accommodate above questions in the previous page(s) by adjusting top/bottom margins and line spacing, if possible, to reduce printing expenses.
  v)   Specify marks for each question/part clearly.
  vi)   Clearly specify the number of questions to be answered for each Part.
  vii)   Avoid repeating questions in Part B from the immediate previous examination.
  viii) Key for evaluation must be prepared and enclosed in a separate cover and should be submitted along with the question paper set. Key for evaluation must specify evaluation guidelines for each part in the question paper, otherwise the key prepared will be treated as incomplete.
  ix)   Submit Question paper in Laser print out form only.   Hand written and printed in poor quality printers is not acceptable.

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[Scheme 2011]

DIPLOMA   IN   COMPUTER APPLICATIONS

A. Scheme for Continuous Evaluation.

1. For Theory Papers :   Weightage

a). Average of minimum Two test papers   :   40 %
b). Average of minimum Two Assignments   :   40%
c). Score for Class Attendance.   :   10%
d). Overall performance in the class.   :   10%

2. For Practical Papers :   Weightage

a). Average of minimum Two Lab tests   :   50 %
b). Maintenance of Lab record   :   20%
c). Score for Lab Attendance.   :   10%
d). Overall performance in the Lab.   :   20%

3. Teachers shall submit Mark list of Continuous Evaluation to the Head of Institution in the following format.

Subject:

Sl no.	Regno.	Name	a.Test	b.Assignment	c.Attendance	d.Performance	CE marks

4. Head of Institution/Coordinator shall forward CE marks to the Examination Department in the following format only.

Centre :

Sl no.	Regno.	Name	DCA101 50	DCA102 50	DCA103 50	DCA104 50	DCA105 50	DCA106 50

5. CE marks must be published in the notice board at least one week before the commencement of theory examinations after getting approval from the Head of Institution/Coordinator.

B. Scheme for Practical Evaluation.

a)   Problem solving : 20 marks
b)   Output   :   5 marks
c)   Viva   : 20 marks
d)   Record   :   5 marks

Total   : 50 marks

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