DOEACC SKILL CERTIFICATION- DIPLOMA IN COMPUTER APPLICATION

(DCA)

Total duration: 6 months part time (360 Hrs)

Sl.No	Subject	Duration in hrs
1	Computer Fundamentals and Business System	80
2	Introduction to Multimedia	60
3	Internet Technology and Web Design	80
4	Introduction to System Maintenance & Information Security	80
5	Data Base - Concepts, Operations and Management	60
	Total	360

Eligibility:

Graduation in any subject from a recognized University.

Examination Pattern:

Theory and Practical examination is conducted to make an in-depth assessment of the knowledge and skills of the candidate in each of the module.

Marks for the questions/Number of questions will be distributed proportional to the hours indicated in the syllabus. Detailed guidelines will be as per general examination procedure.

Theory Examination

There will be two theory examinations.

　　　Theory Exam 1 : Papers 1 and 4 Combined.

　　　Theory Exam 2 : Papers 2, 3 and 5 Combined.

Duration of Examination:

Theory Exam 1 : Two Hours , Max Marks : 100

Theory Exam 2 : Three Hours, Max Marks : 200

To qualify for a pass in a paper, a candidate must have obtained at least 50% marks in the examination (D Grade).

Practical Examination

There will be one practical examination covering all the five papers.

Duration of Examination: Three and half hours.

Max. Marks: 200.

To qualify for a pass in practical exam, a candidate must have obtained at least 50% marks in the practical examination (D Grade).

Project Evaluation and Viva:

The project evaluation for all the papers will be done by the examiner along with practical examination. Practical examination carries 100 marks, Project 80 Marks and viva caries 20 marks.

Pass criteria

To qualify for a pass in the course, a candidate must have obtained at least 55% marks (C Grade) aggregate in theory and practical examination.

Grade details:
       S - 85% and over (superior)
       A - 75% - 84%
       B - 65% - 74%
       C - 55% - 64%
       D - 50% - 54%
       F - Fail

General

Hours shown against each of topics are only indicative

References: Given as part of syllabus

Infrastructure required:
(By Training Institute for a batch of 10 students)

Sl No	Item	Quantity
1.	PC with Windows XP or later and Linux with internet connection	10
2.	MS office	10
3.	Open office	10
4.	All relevant application soft wares	10 License
5.	UPS	(suitable for supporting 10 PCs)
6.	Printer	1

Detailed Syllabus

I. Computer Fundamentals and Business System

1. **Computer Organization:** Introduction to Computers, Basic Applications of Computer; Components of Computer System, Central Processing Unit (CPU), VDU, Keyboard and Mouse, Other input/output Devices, Computer Memory, Concepts of Hardware and Software; Concept of Computing, Data and Information; Applications of IECT; Connecting keyboard, mouse, monitor and printer to CPU and checking power supply.

   [5 hours]

2. **Operating Computer using GUI Based Operating System:** Introduction to Operating System; Basics of Popular Operating Systems; The User Interface, Using Mouse; Using right Button of the Mouse and Moving Icons on the screen, Use of Common Icons, Status Bar, Using Menu and Menu-selection, Running an Application, Viewing of File, Folders and Directories, Creating and Renaming of files and folders, Opening and closing of different Windows; Using help; Creating Short cuts, Basics of O.S Setup; Common utilities.

   [10 hours]

3. **Word Processing using MS Word:** Word Processing Basics; Opening and Closing of documents; Text creation and Manipulation; Formatting of text; Table handling; Spell check, language setting and thesaurus; Printing of word document.

   Word Processing using Open Office Writer: Working with documents, Formatting documents, Working with Tables, Inserting Pictures/Files etc, Tools-Spell check, macros, mail merge etc

   [24 hours]

4. **Spread Sheet:** Basics of Spreadsheet; Manipulation of cells; Formulas and Functions; Editing of Spread Sheet, printing of Spread Sheet.

   [12 hours]

5. **Presentation Tool:** Creating, Opening and Saving Presentations, Creating the Look of Your Presentation, Working in Different Views, Working with Slides, Adding and Formatting Text, Formatting Paragraphs, Checking Spelling and Correcting Typing Mistakes, Making Notes Pages and Handouts, Drawing and Working with Objects, Adding Clip Art and other pictures, Designing Slide Shows, Running and Controlling a Slide Show, Printing Presentations.

   [10 hours]

6. **Multilingual Word processing applications:** Packages and tools available under Windows for Indian languages

   [4 hours]

7. **Project on Electronic Document preparation:**

   [15 hours]

Reference

1. P.K. Sinha and P. Sinha, " Foundations of Computing" , BPB Publication, 2008.

2. Sagman S, "MS Office for Windows XP", Pearson Education, 2007.

3. ITL Educational Society, "Introduction to IT", Pearson Education, 2009.

4. Miller M, "Absolute Beginners Guide to Computer Basics", Pearson Education, 2009.

5. Turban, Mclean and Wetherbe, "Information Technology and Management" John Wiely & Sons.

6. Mansfield Ron, "Working in Microsoft Office", 2008, Tata McGraw-Hill

7. Balagurusamy E, "Fundamentals of Computers", 2009, Tata McGraw-Hill

8. Mavis Beacon, "All-in-one MS Office" CD based views for self learning, BPB Publication, 2008

9. Perry G, "MS Office 2007", Pearson Education, 2008.

10. D'Suoza & D'souza, "Learn Computer Step by Step", Pearson Education, 2006.

11. Kulkarni, "IT Strategy for Business", Oxford University Press

II. Introduction to Multimedia

1. **Introduction:** Basics of multimedia, components of multimedia, web and internet multimedia applications,transition from conventional media to digital media.

[4 hours]

2. **Computer Fonts and Hypertext:** Usage o f text in multimedia, families and faces of fonts, outline fonts, bitmap fonts, international character sets and hypertext, digital fonts techniques.

[4 hours]

3. **Audio Fundamentals and Representations:** Digitization of sound, frequency and bandwidth, decibel system, data rate, audio file format, sound synthesis, MIDI, wavetable, compression and transmission of audio on Internet, audio software and hardware.

[10 hours]

4. **Image Fundamentals and Representations:** Colour science, colour, colour models, colour palettes, dithering, 2D graphics, image compression and file formats :GIF, JPEG, JPEG 2000, PNG, TIFF, EXIF, PS, PDF, basic image processing using photoshop, use of image editing software, white balance correction, dynamic range correction, gamma correction, photo retouching.

[10 hours]

5. **Video and Animation :** Video basics , broadcast video standards, analog video, digital video,video recording and tape formats, shooting and editing video using Adobe, video compression and file formats. video compression based on motion compensation, MPEG-1, MPEG-2, MPEG-4, MPEG-7, MPEG-21, animation: cell animation, computer animation, morphing.

6. **Multimedia Authoring.** Multimedia authoring basics, authoring tools, Macromedia Director & Flash.

[10 hours]

7. **Project on Multimedia Authoring**

[12 hours]

Reference

1. Tay Vaughan, "Multimedia making it work", Tata McGraw-Hill, 2008.
2. Rajneesh Aggarwal & B. B Tiwari, " Multimedia Systems", Excel Publication, NewDelhi, 2007.
3. Li & Drew, " Fundamentals of Multimedia" , Pearson Education, 2009.
4. Parekh Ranjan, "Principles of Multimedia", Tata McGraw-Hill, 2007
5. Anirban Mukhopadhyay and Arup Chattopadhyay, "Introduction to Computer Graphicsand Multimedia", Second Edition, Vikas Publishing House.

III. Internet Technology and Web Design

1. **Introduction to Internet :** Internet, growth of Internet, owners of the Internet, anatomy of Internet, ARPANET, and Internet history of the World Wide Web, basic Internet terminology, Net etiquette.

[3 hours]

2. Internet Applications – Commerce on the Internet, governance on the Internet, Impact of Internet on society – Crime on/through the Internet

[2 hours]

3. **Internet Technology :** TCP/IP – protocol, Internet connectivity, packet switching technology, Internet protocols: TCP/IP, Router, Internet addressing scheme:

Machine addressing (IP address), E-mail addresses, resources addresses connectivity types: level one, level two and level three connectivity, setting up a connection: hardware requirement, selection of a modem, software requirement, modem configuration, Internet accounts by ISP: telephone line options, protocol options, service options, telephone line options – dialup connections through the telephone system, dedicated connections through the telephone system, ISDN, protocol options – Shell, SLIP, PPP, service options – E-mail, WWW, Firewall etc.

[12 hours]

4. **Internet Network and Services on Internet (Definition and Functions) :** Network definition, Common terminologies: LAN, WAN, node, host, workstation, bandwidth, interoperability, network administrator, network security, network components: severs, clients, communication media, types of network: peer to peer, clients server, addressing in Internet: DNS, domain name and their organization, understanding the Internet protocol address. Network topologies: Bust, star and ring, Ethernet, FDDI, ATM and

Intranet. E-mail, WWW, Telnet, FTP, IRC and search engine

5. **Electronic Mail :** Email networks and servers, Email protocols –SMTP, POP3, IMAP4, MIME6, structure of an Email – Email address, Email header, body and attachments, Email clients: Netscape mail clients, Outlook Express, web based E-mail. Email encryption- address book, signature file.

[10 hours]

6. **Web Browsing and Current Trends on Internet:** Overview, SGML, web hosting, HTML. CGL, Documents Interchange Standards, components of web publishing, document management, web Page design consideration and principles, search and Meta Search Engines, WWW, browser, HTTP, publishing tools languages, Internet phone, Internet video, collaborative computing, e-commerce.

[10 hours]

7. **HTML Programming Basics :** HTML page structure, HTML text, HTML links, HTML document tables, HTML frames, HTML images, multimedia

[10 hours]

8. **Project on Browsing , sending emails , developing a simple website**

[20 hours]

Reference

1. Greenlaw R and Hepp E "Fundamentals of Internet and www" 2nd EL, Tata McGrawHill,2007.

2. Ivan Bayross, "HTML, DHTML, JavaScript, Perl CGI", 3rd Edition, BPB Publications.

3. D. Comer, "The Internet Book", Pearson Education, 2009.

4. M. L. Young,"The Complete reference to Internet", Tata McGraw Hill, 2007.

5. Godbole AS & Kahate A, "Web Technologies", Tata McGrawHill,2008.

6. Jackson, "Web Technologies", Pearson Education, 2008.

7. B. Patel & Lal B. Barik, " Internet & Web Technology ", Acme Learning Publishers.

8. Leon and Leon, "Internet for Everyone", Vikas Publishing House.

IV. System Maintenance & Information Security

1. **Computer hardware basics:** CPU's, Multiple Cores, Cache, FSB, Laptop CPU's, Desktop RAM, Laptop RAM, PATA & SATA configuration, floppy disk drives, optical drives. Troubleshooting computers**:** Identifying power problems, POST error codes, boot failures and peripheral failures.

[8 hours]

2. **Computer peripheral devices:** Installation and Trouble shooting of peripherals like Printers, Scanners. Modems, Monitors, USB, Bluetooth and Wireless Devices.

[7 hours]

3. **Trouble shooting OS & Application Software :** Advanced Boot Options, Stop Errors (BSOD), Safe Mode, CHKDSK, FIXBOOT, FIXMBR, Repair Install, MSCONFIG,

System Restore, Performance Issues, Application Problems, the Registry, Malware (Viruses)

[7 hours]

4. **Information Technology and Society:** Indian IT Act, Intellectual Property Rights – issues. Cyber laws.

[10 hours]

5. **Information Security basics:** Introduction to Information Security, Goals of Information Security, Types of attacks

[9 hours]

6. **Workstation Security :** Windows Security , Choosing Strong Passwords, Virus, Worms and Malware, Spyware and Adware, Patches and Updates**,** Network Attacks, Firewalls, Intrusion Detection Systems

[9 hours]

7. Internet Security : Internet configurations, Internet protocols and security, application security WWW security – SHTTP, SMIME, PGP, SET, E-mail and IM security, access control – physical and logical biometrics introduction, Internet security protocols

[9 hours]

8. **Email Security** : Email client configuration, Sending email in another persons address, Browser Security configuration, Email header of fake message, Email header of real message, Email viruses

[7 hours]

9. **Backup and Disaster Management** : Security policies and procedures, business continuity planning, disaster recovery planning**,** business impact analysis, risk assessment methodologies, risk classification, asset classification, information classification, resource recovery strategy, crisis management plan – incident management, logging and analysis, data backs and recovery

[6 hours]

10. **OS Installation and Securing:** Installation and configuration of the Windows and Linux operating system, implementing and managing the network infrastructure, disk and file system management. Operating system security.

[8 hours]

Reference

1. Gollmann, Dieter, "Computer Security", First Edition, 1999, John Wiley & Sons Ltd.

2. Micki Krause, Harold F. Tipton, "Handbook of Information Security Management", 1999, Auerbach Publications

3. K.Mandia, Chris Prosise, Matt Pepe, "Incident Response and Computer forensics", 2nd edition, Tata Mc-grawhill

4. Simson Garfield, "Web Security, Privacy Commerce", Second Edition, 2002, O'Reilly Publications

5. Dr. R.K.Tiwari,P.K.Sastri,K.V.Ravikumar, "Computer Crime and Computer Forensics", First Edition, 2002, Select Publishers

6. Behrouz A. Forouzan , Cryptography and Network Security,The McGraw-Hill Edition, 2007

7. William Stallings, "Network Security Essentials", First Indian Reprint, 2000, Pearson Education Asia

8. **Web Sites -** 1. www.mit.gov.in - For IT Act details and www.cert.org

V. Data Base - Concepts, Operations and Management

1. **An Overview of Database Management System: Introduction to d**atabase, database system, database management system, (DBMS), advantages of DBMS.

[5 hours]

2. **Data Base Operations:** Data Manipulation-Concept: Database, Relational Database, integrity.

   Operations: Creating, dropping, manipulating table structure. Manipulation of Data, SQL

[15 hours]

3. **Backup and Recovery :** Transaction recovery, system recovery, SQL support

[5 hours]

4. **Security & Integrity:** General considerations, controls, audit trail, data encryption, SQL support. General considerations, integrity rules, SQL support.

[5 hours]

5. **Design and Development of Applications using MS Access:** Creation of Tables, Queries, , GUI, Creation of Forms – text box, labels, list box, combo box, buttons and controls, Generation of Reports.

[8 hours]

6. **Project on database application development**

[22 hours]

Reference

1. Silberschatz A, Korth H.F and Sudarshan S, "Database System Concepts", Fifth Edition, Tata McGraw-Hill, 2006.

2. C.J.Date, " An introduction to Database Systems", Pearson Education, 2007.

3. R. Elmasri, S. B Navathe, " Fundamentals of Database System", Pearson Education, 2007.

4. Desai C. Bipin, "An Introduction to Database Systems", Galgotia Publication, 2009.

5. Leon A and Leon M, "Fundamentals of DBMS", Vijay Nicole & Tata McGraw-Hill, 2007.

6. Gill P.S, "DBMS", I.K. International, 2008.

7. Singh S.K, "Database Systems: Concepts, Design & Applications", Pearson Education, 2008.

8. Leon A and Leon M, "Database Management Systems", Vikas Publishing House.