

DCA First Semester Syllabus:

FUNDAMENTALS OF COMPUTERS AND INFORMATION TECHNOLOGY

Unit – I

Introduction to Computer and Information Technology

- History of development of computers
- Computer system concepts
- Characteristics
- Capabilities and limitations
- Types of computers – Analog, Digital, Hybrid, General, Special Purpose, Micro, Mini, Mainframe, Super.
- Generations of computers
- Personal Computer (PCs) – IBM PCs, Characteristics, PC/PCXT/PCAT – Configurations, Pentium and Newer PCs Specifications and Main Characteristics.
- Types of PC's – Desktop, Laptop, Notebook, Palmtop, Workstations etc. their characteristics.

Computer Organizations

- Basic components of a computer system – Control Unit, ALU, Input/Output functions and characteristics, memory – RAM, ROM, EPROM, PROM and other types of memory.

Unit – II

Input Devices

- Keyboard, Mouse, Trackball, Joystick, Digitizing tablet, Scanners, Digital Camera, MICR, OCR, OMR, Bar-code Reader, Voice Recognition, Light pen, Touch Screen.

Output Devices

- Monitors – characteristics and types of monitor – Digital, Analog, Size, Resolution, Refresh Rate, Interlaced/Non-Interlaced, Dot pitch, Video Standard – VGA, SVGA, XGA, LCD Screens etc.
- Printers – Daisy wheel, Dot Matrix, Inkjet, Laser, Line Printer
- Plotter
- Sound Card and Speakers

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 Softwares

- Need, Types of Soft wares – System software, Application software.
- System Software – Operating System, Utility Programme, Programming languages, Assemblers, Compilers and Interpreter.
- Operating Systems – Functions, Types – Batch, Single, Multi-programming, Multi-processing.
- Programming languages – Machine, Assembly, High Level, 4 GL, their merits and demerits (Theory).

- Application Software – Word-processing, Spreadsheet, Presentation Graphics, Data Base Management Software, Characteristics, Uses and examples and area of applications of each of them.

Number System

- Data representation in computers.
- Number System of computers – Binary, Octal, Hexa – Representation & their conversion.
- Coding System – ASCII, BCD, and EBCDIC etc.

Computer Virus

- Virus working principals
- Types of Viruses
- Virus detection and prevention
- Viruses on network

Unit – IV

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.

DOS Commands

- Internal – DIR, MD, CD, RD, Copy, DEL, REN, VOL, DATE, TIME, CLS, PATH, TYPE etc.
- External – CHKDSK, SCOPY, PRINT, DISKCOPY, DISKCOMP, DOSKEY, TREE, MOVE, LABEL, APPEND, FORMAT, SORT, FDISK, BACKUP, EDIT, MODE, ATTRIB, HELP, SYS etc.

Executable V/s Non executable files in DOS

Unit –V

Data Communication and Networks

- Analog and Digital Signals
- Modulations – Amplitude Modular (AM), Frequency Modulation (FM), Phase Modulation (PM).
- Communication Process
- Direction of Transmissions Flow – Simplex, Half Duplex, Full Duplex.
- Communication Software
- Communication Protocols, Http, Hp, Sntp, NNtp, gophar, etc
- Communication Channels–Twisted, Coaxial, Fiber Optic, Serial and Parallel Communication.
- Modem – Working and Characteristics
- Types of Connections – Dialup, Leased Lines, ISDN
- Types of Network – LAN, WAN, MAN, etc.
- Topologies of LAN - Ring, Bus, Star, Mesh and Tree topologies
- Components of LAN – Media, NIC, Nos, Bridges, HUB, Routers Repeater and Gateways.
- Use of Communication in daily life.

PC PACKAGES (WINDOWS XP, WORD, EXCEL, POWER POINT)

Unit – I

Windows XP

- 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.
- Managing Hardware & Software – Installation of Hardware & Software, Using Scanner.
- Communication – Dial up Networking, Hyper terminal, Phone Dialer.
- Sharing Information between Programs.
 - Understanding OLE
 - Embed/Link Using Cut and Paste
 - Embed/Link Using Insert Object
 - Manage Embedded/Linked Object

Unit – II

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.

Unit – III

Word Processing: Advanced Features of MS Word

- Find and Replace, Checking the grammar and spelling.
- Using the Thesaurus, Using Auto Correct, Auto Complete and Auto Text, Word Count.
- Mail merge, mailing labels, Wizards and Templates, Handling Graphics
- Table Insert and Modification
- Conversion of Tables
- Converting a word document into various formats like – Text, Rich Text Format, Word Perfect, and HTML etc.

Unit – IV

Worksheet: MS Excel

- Worksheet basics
- Creating worksheet, entering data into worksheet, heading information, data, text, dates, alphanumeric, values, saving & quitting 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.
- Formatting of worksheet – Auto format, changing – alignment, character styles, column width, date format, borders & colours, currency signs.

Unit – V

Worksheet: MS Excel

- 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.
- Database – creation, sorting, query & filtering a database
- Functions – Database, Date and Time, Maths & Trigonometry, Statistical, Text and Logical functions.
- Creating and Using Macros
- Multiple worksheets – concepts, Creating and Using

Unit – VI

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.
- Slide sorter, slide transition effects and other animation effects.
- Presenting the show – making stand alone presentation, Pack and go wizards

