

# MITTAL INSTITUTE OF COMPUTER EDUCATION



## Computer Fundamental Syllabus

### Unit 1 : Computer their Origin and Applications

A bit of history highlighting the concepts, Abacas, Difference Engine, Electro-magnetic Computers, Discrete components, IC circuits, Current hardware Platforms, Description of current applications of computer highlighting role of computers, Limitations of Computers

Components of a computer and their role, Number system, Codes ASCII Unicode Concept of Instruction – a simple example, Role of ALU and CU with the help of an example

Type of memories and their characteristics, What is the need of memory hierarchy? Memory Hierarchy with examples of each level , Current trends in memory I/O devices, Current trends in I/O Explain the configuration of PC and its components in respect of identification of various components

Different type of software and its evolution, System and application software, Utility software, Perverse software, Open Source software, Some basic constructs, Editors, Compilers and interpreters, Assemblers

### Unit 2 : Operating System Concepts

Need and Functions, Type of OS starting from Batch, Multi-programming and real time Network and distributed OS, Web OS, Examples of OS and their features, Some basic constructs, Editors, Compilers and interpreters, Assemblers, Window-7 basics, Accessories of window OS, File Management.

### Unit 4 : MS-Word

Learn To Create Your New Document. Learn How To Change the Page Layout, Background, And Borders. Edit Pictures and Shapes. Insert Clip Art and Images into Your Document. Learn About Paragraphs. Managing content. Links, Header, and footer. References. Mail Merge. Protecting Your Documents.

### Unit-4 : MS-Excel

**Excel Introduction** - An overview of the screen, navigation and basic spreadsheet concepts • Various selection techniques • Shortcut Keys Customizing Excel • Customizing the Ribbon • Using and Customizing AutoCorrect • Changing Excel's Default Options Using Basic Functions • **Using Functions** – Sum, Average, Max,Min, Count, Counta • Absolute, Mixed and Relative Referencing. **Formatting and Proofing** - Currency Format • Format Painter • Formatting Dates • Custom and Special Formats • Formatting Cells with Number formats, Font formats Alignment, Borders, etc • Basic conditional formatting.

**Mathematical Functions** - SumIf, SumIfs CountIf, CountIfs AverageIf, AverageIfs, Nested IF, IFERROR Statement, AND, OR, NOT.

**Protecting Excel** - File Level Protection • Workbook, Worksheet Protection. Text Functions - Upper, Lower, Proper • Left, Mid, Right • Trim, Len, Exact • Concatenate • Find, Substitute.

**Date and Time Functions** - Today, Now • Day, Month, Year • Date, Date if, DateAdd • EOMonth, Weekday.

**Advanced Paste Special Techniques** - Paste For formulas, Paste Formats • Paste Validations • Transpose

Tables. Sorting and Filtering - Filtering on Text, Numbers & Colors • Sorting Options • Advanced Filters on 15-20 different criteria(s).

**Printing Workbooks** - Setting Up Print Area • Customizing Headers & Footers • Designing the structure of a template • Print Titles –Repeat Rows / Columns. Advance Excel - What If Analysis • Goal Seek • Scenario Analysis • Data Tables (PMT Function) • Solver Tool.

**Logical Functions** - If Function • How to Fix Errors – if error • Nested If • Complex if and or functions.

**Data Validation** - Number, Date & Time Validation • Text and List Validation • Custom validations based on formula for a cell • Dynamic Dropdown List Creation using. Data Validation Dependency List.

**Lookup Functions** - Vlookup / Hlookup • Index and Match • Creating Smooth User Interface Using Lookup • Nested VLookup • Reverse Lookup using Choose Function • Worksheet linking using Indirect • Vlookup with Helper Column.

**Pivot Tables** • Creating Simple Pivot Tables • Basic and Advanced Value Field Setting • Classic. Pivot table Choosing Field • Filtering PivotTables • Modifying PivotTable Data • Grouping based on numbers and Dates • Calculated Field & Calculated Items • Arrays Functions • What are the Array Formulas, Use of the Array Formulas? • Basic Examples of Arrays (Using ctrl+shift+enter). • Array with if, len and mid functions formulas. • Array with Lookup functions. • Advanced Use of formulas with Array. Charts and slicers - Various Charts i.e. Bar Charts / Pie Charts / Line Charts • Using SLICERS, Filter data with Slicers • Manage Primary and Secondary Axis

## **Unit-5 : MS-Powerpoint**

Navigate the PowerPoint interface

Create new presentations from scratch – or by using beautiful templates

Add text, pictures, sounds, movies, and charts to your presentations

Format the objects that you add to your presentations

Design slides using themes, colors, and special effects

Animate objects on slides to bring them to life.

Add special effects to slide transitions to spice up your presentations

Work with Master Slides to make editing your presentation easy

Set up slide shows and rehearse timings for your slides

Collaborate easier than before using PowerPoint

## **Unit-6 : Internet Technologies**

### **Introduction to Internet and WWW, E-mail, Social Networking and e-Governance**

**Services:** Basic of Computer Networks, Local Area Network (LAN), Wide Area Network (WAN), Network Topology , Internet, Concept of Internet & WWW, Applications of Internet, Website Address and URL, Introduction to IP Address, ISP and Role of ISP, Internet Protocol, Modes of Connecting Internet (HotSpot, Wifi, LAN Cable, BroadBand, USB Tethering), Identifying and uses of IP/MAC/IMEI of various devices, Popular Web Browsers (Internet Explorer/Edge, Chrome, Mozilla Firefox, Opera etc.), Exploring the Internet , Surfing the web, Popular Search Engines, Searching on Internet, Downloading Web Pages, Printing Web Pages.

### **Digital Financial Tools and Applications, Overview of FutureSkills & Cyber**

**Security:** Digital Financial Tools, Understanding OTP [One Time Password]and QR [Quick Response] Code, UPI [Unified Payment Interface], AEPS [Aadhaar Enabled Payment System], USSD[Unstructured Supplementary Service Data], Card [Credit / Debit], eWallet, PoS [Point of Sale], Internet Banking, National Electronic Fund Transfer (NEFT), Real Time Gross Settlement (RTGS), Immediate Payment Service (IMPS), Online Bill Payment