

Punjab Board

SYLLABUS

2024-2025

Syllabus - Computer Science

Session 2024-25

Class 9th

❖ Networking

- Networking, Need of Networking, Advantages and Disadvantages of Network
- **Components of Computer Networks**: Computer (clients, servers), Network Interface Card (Ethernet Card, Wireless Card), HUB / Switch, Router, Transmission Media
- **Types of Networks**: Personal Area Network (PAN), Local Area Network (LAN), Metropolitan Area Network (MAN), Wide Area Network (WAN)
- **Network Topologies:** Topologies and its types - Bus Topology, Advantages and Disadvantages of Bus Topology, Ring Topology (Single Ring and Dual Ring), Advantages and Disadvantages of Ring Topology, Star Topology, Advantages and Disadvantages of Star Topology, Mesh Topology, Advantages and Disadvantages of Mesh Topology, Tree Topology, Advantages and Disadvantages of Tree Topology, Hybrid Topology, Advantages and Disadvantages of Hybrid Topology
- **Data Communication:** Components of Data Communication (Sender, Medium, Receivers, Protocol), Modes of data transmission (Simplex, Half duplex, Full duplex**)**

❖ Internet Applications

- Introduction to Internet, E-mail, CAPTCHA Code
- Concept of Downloading and Uploading
- Cloud Networking and Cloud Printing
- **Google Apps:** Gmail - Creating new account, Log-in to Gmail account, How to send E-mail, How to Read E-mail, Google Calendar, Google Maps, Google Translate, Google Docs, Google Sheets, Google Slides, Google Form, Google Sites, Google Photos, Google Lens, Google Meet, Google Play Store, Google Drive - Benefits of Google Drive, How to share file(s) from google drive

- **Digital Locker:** Objectives of Digital Locker
- **Internet Threat**s: Virus, Spyware, Trojan horse, Phishing Scams
- **Internet Security:** Anti-virus, Anti-Spyware, Prevention from Trojan Horse, Prevention from Phishing Scam
- **Cyber Crime & Cyber Ethics:** Cyber Crime - Computer as a Target, Computer as a Weapon, Preventive measures against Cyber Crime, Cyber Ethics - Principles of Cyber Ethics, Don'ts and Do's

❖ Microsoft Excel

- Introduction of MS Excel, Feature of MS Excel, Common uses of MS Excel, How to Start MS Excel
- **Components of MS Excel Window:** Quick Access Toolbar, Title Bar, Control buttons, File Tab, Tabs, Ribbon/Toolbar, Dialog Box Launcher, Name box, Formula bar, Scrollbars, Spreadsheet Area, Leaf Bar, Status Bar, View Buttons, Zoom Control, Active Cell
- **MS Excel Terminology:** Workbook, Worksheet, Row, Column, Cell, Active Cell, Cell Address, Comparison between Worksheet and Workbook
- **Working with Data in Excel Worksheets:** Basic functioning in Worksheet - Entering Data (Entering Formula or Function, Entering Contents other than formula or function), Editing a Cell Data, Deleting Data, Selecting Cells, Entering Same Data in a Row or Column - Using Fill Command, Using Copy and Paste, Using Fill Handle
- **Working with Series in Excel Worksheets:** Series of Month/Day Names, Series of Numbers
- **Operations on Workbook and Worksheets:** Operations on Worksheets- Inserting new Worksheet, Renaming Worksheet, Removing Worksheet, Copying a Worksheet, Operations on Workbooks- Creating New Workbook, Saving Workbook, Opening an Existing Workbook
- **Formatting in MS Excel:** Changing the text styles (Font, Size, Font Color, Text Background color, Basic styles), Changing the Cell styles (Cell Borders, Changing cell width, Changing cell height, Merging Cells, Aligning Text, Changing Orientation of Text, Wrapping Text, Applying Number Formats), Conditional Formatting, Formatting as Tables
- **Inserting rows, columns & objects in MS Excel:** Inserting Cells, Inserting Rows, Inserting Columns, Using AutoSum, Inserting Charts

- Introduction of Formulas and Functions, Elements of formulas – Operators and Operands, Operators used in MS Excel Formulas (Arithmetic operators, Comparison operators, String concatenation operator), The Operator Precedence in Excel, Cell Referencing - Relative References, Absolute Reference, Mixed Reference
- Uses of Formula and functions, Using Formulas - Simple use of Arithmetic Operators, Advanced use of Arithmetic Operators with operator precedence, Using formula for calculating the percentage, Using caret (^) operator Using ampersand (&) operator, Using Functions- Mathematical Function (SUM, COUNT , COUNTA , COUNTBLANK, AVERAGE, MIN, MAX, RANK, LARGE, ROUND), Conditional Functions (IF, SUMIF, COUNTIF), String Functions (LEN, LEFT, RIGHT, MID, LOWER, UPPER, PROPER), Date Functions (TODAY, NOW, DAY, MONTH, YEAR)
- **Sorting and Filtering Data:** Sorting Data - Sorting using Home tab ribbon, Sorting Data using Data Tab Filtering Data- Filtering by Data Items, Filtering according to range of data, Filtering by color
- **Working with Data Tools:** Text to columns, Remove Duplicates, Data Validation
- **Setting Page Layout in MS Excel:** Margin- Setting Margins, Applying standard margin, Orientation-Landscape orientation**,** Portrait Orientation, Changing page orientation from Page Layout Tab Ribbon, Size- Changing Size from Page Layout Tab Ribbon, Print Area- Set Print Area Clearing Print Area, Page Break, Scaling- Setting Scaling using Print Preview option (Fit Sheet on One Page, Fit All Columns on One Page, Fit All Rows on One Page, No scaling), Setting Header and Footer, Setting Page Layout using Print Preview Window (Orientation, Size, Margin, Scaling**)**
- **Working with different views in MS Excel:** Normal View (Default View), Page Layout View, Page Break Preview, Custom Views, Full Screen View
- **Protecting Worksheet and Workbook:** Protecting Worksheet, Protecting MS Excel Workbook

❖ E-Governance

- Introduction, Characteristics of Good Governance. What is E – Governance, Four pillars of E-Governance-Connectivity, Knowledge, Data Content, Capital
- Governance vs. E-Governance, History and development of E – Governance, Objectives of E – governance
- **E–Governance Models**- Government to citizens (G2C), Government to businessman (G2B), Government to employees (G2E), Government to government (G2G)
- **Services of E – Governance:** E-Governance Services at National Level, E-Governance Services at State Level, E-Governance Services at Local Level (E-Governance Services in Urban Areas, E-Governance Services in Rural Areas)

❖ Database Management System

- Introduction, Data and Information (Data (or Raw Data), Information (or Processed Data)), Data vs. Information
- **Database Terminology:** Attribute, Record, Table, Database
- File Processing System
- **DBMS:** Definition, Advantages and disadvantages of DBMS
- File Processing System vs DBMS
- **Components of DBMS Environment:** Software, Hardware, Procedures, Data, Users (Application Programmers, Database Administrators (DBA), End-Users)
- **Database Operations:** Data Definition Operations, Data Manipulation Operations, Data Control Operations

Study Materials

aglasem.com

Model Papers

Sample Papers

Half Yearly Sample Papers

Important Resources

Periodic Table

Writing Skills / Formats

Maps of India / World

Notes

- [ ] Class 6 Notes
- [ ] Class 7 Notes
- [ ] Class 8 Notes
- [ ] Class 9 Notes
- [ ] Class 10 Notes
- [ ] Class 11 Notes
- [ ] Class 12 Notes

Books and Solutions

NCERT Books

NCERT Book Solutions

HC Verma Chapter Wise Solutions

RD Sharma Solutions

CGBSE Solutions