COMPUTER SYLLABUS

Class – 10

10th Class Computer Syllabus – An Overview

In Class 10, the NCERT Computer Science syllabus emphasizes more advanced concepts in computing, programming, and digital technologies, preparing students for higher studies and practical applications in technology. Here's a comprehensive breakdown of the topics and sub-topics typically covered:

Here our chapters for ITSE Examination :-

Chapter – 1 (*Introduction to Computer Systems*)

Chapter – 2 (*Understanding Software*)

Chapter – 3 (Data Management and Databases)

Chapter – 4 (Internet and Networking)

Chapter - 5 (Programming and Problem Solving)

Chapter - 6 (Web Development and Design)

Chapter – 7 (Cyber Security and Ethics)

Chapter – 8 (*Digital Communication and Collaboration*)

Chapter - 9 (*Multimedia and Graphics*)

Chapter - 10 (*Practical Applications and Projects*)

Chapter – 1 (Introduction to Computer Systems)

Topics and Sub – Topics :-

- **Overview of Computer Architecture**
    - Basic components: CPU, Memory, Input/Output devices.
    - Understanding the function and interaction of hardware components.
- **Types of Computers**
    - Classification based on size and functionality: Desktop, Laptop, Tablet, Smartphone.
    - Introduction to specialized systems: Embedded systems, IoT devices.

Chapter – 2 (Understanding Software)

- **System Software**
    - Functions and types: Operating systems, Utility software, Device drivers.
    - Operating system basics: Windows, Linux, macOS.
- **Application Software**
    - Categories: Productivity software, Educational software, Media software.
    - Examples: Word processors, Spreadsheets, Graphics software.
- **Open Source vs. Proprietary Software**
    - Understanding the differences, advantages, and limitations.
    - Examples of open-source software: Linux, GIMP, Libre Office.

Chapter – 3 (Data Management and Databases)

Topics and Sub – Topics :-

- **Introduction to Databases**
  - Understanding data, databases, and Database Management Systems (DBMS).
  - Examples of DBMS: MySQL, PostgreSQL, SQLite.
- **Database Concepts**
  - Tables, records, fields, and primary keys.
  - Relationships between tables: One-to-one, one-to-many, many-to-many.
- **Basic SQL Queries**
  - Introduction to SQL: SELECT, INSERT, UPDATE, DELETE.
  - Using SQL to manage and manipulate data in databases.

Chapter – 4 (Internet and Networking)

Topics and Sub – Topics :-

- **Basics of Networking**
  - Types of networks: LAN, WAN, MAN, PAN.
  - Network topologies: Star, Ring, Bus, Mesh.
- **Internet Technologies**
  - Understanding IP addresses, DNS, and protocols (HTTP, FTP).
  - Basics of wireless communication: Wi-Fi, Bluetooth.
- **Web Services and Cloud Computing**
  - Introduction to web hosting and domain registration.
  - Basics of cloud computing and popular cloud services (AWS, Google Cloud, Azure).

Chapter - 5 (Programming and Problem Solving)

Topics and Sub – Topics :-

- **Advanced Programming Concepts**
    - Data types, variables, operators, expressions.
    - Control structures: If-else, loops (for, while), switch-case.
- **Python Programming**
    - Introduction to Python: Syntax, IDE, basic commands.
    - Writing and executing Python scripts.
    - Functions and modules in Python.
- **Object-Oriented Programming (OOP)**
    - Basic concepts of OOP: Classes, objects, inheritance, polymorphism.
    - Implementing OOP in Python: Creating classes, objects, and using methods.

Chapter - 6 (Web Development and Design)

Topics and Sub – Topics :-

- **HTML and CSS**
    - Advanced HTML tags and attributes.
    - Using CSS for advanced styling and layout.
- **JavaScript Basics**
    - Understanding JavaScript syntax and usage.
    - Adding interactivity to web pages with JavaScript.
    - Simple scripts for dynamic content and user input validation.
- **Building Web Applications**

- Combining HTML, CSS, and JavaScript to create functional web pages.
- Basics of web hosting and deploying web applications.

Chapter – 7 (Cyber Security and Ethics)

Topics and Sub – Topics :-

- **Understanding Cyber Security**
  - Types of cyber threats: Malware, Phishing, Hacking.
  - Basic security measures: Antivirus, Firewalls, Encryption.
- **Safe Online Practices**
  - Importance of strong passwords and secure browsing.
  - Recognizing and avoiding online scams and frauds.
- **Digital Ethics and Laws**
  - Understanding intellectual property rights and copyright laws.
  - Ethical behaviour in digital environments.
  - Basics of data privacy and protection regulations (e.g., GDPR).

Chapter – 8 (Digital Communication and Collaboration)

Topics and Sub – Topics :-

- **Effective Use of Digital Communication Tools**
  - Advanced use of email and instant messaging.

- Introduction to professional networking platforms (LinkedIn).

- **Online Collaboration Tools**
  - Using tools like Google Workspace, Microsoft Teams for collaborative work.
  - Basics of project management software (Trello, Asana).

- **Virtual Meetings and Conferencing**
  - Tips for effective online meetings.
  - Introduction to video conferencing tools (Zoom, Google Meet).

Chapter - 9 (Multimedia and Graphics)

Topics and Sub – Topics :-

- **Digital Image Creation and Editing**
  - Advanced image editing techniques using software like Photoshop, GIMP.
  - Understanding vector vs. raster graphics.

- **Audio and Video Production**
  - Basics of audio recording and editing.
  - Introduction to video editing software and techniques.

- **Creating Multimedia Projects**
  - Integrating text, images, audio, and video into projects.

- Using multimedia authoring tools for presentations and storytelling.

Chapter - 10 (Practical Applications and Projects)

Topics and Sub – Topics :-

- **Comprehensive Projects**
  - Developing a website, creating a database application, designing a multimedia presentation.
  - Real-world applications and case studies.
- **Hands-on Activities**
  - Practical tasks to apply theoretical knowledge.
  - Group projects to enhance collaboration and innovation.