

COMPUTER SCIENCE 11TH

(CBSE / ICSE / STATE BOARD)



Syllabus for Computer Science

11th

Unit 1: Computer Systems and Organization

- Basic Computer Organization: Input and output devices, CPU, memory, storage.
- Memory Units: Bits, bytes, primary memory, secondary memory.
- Types of Software: System software, application software.
- Operating System: Functions, types (Batch, Time-sharing, etc.).
- Boolean Logic: NOT, AND, OR, XOR gates, truth tables.

Unit 2: Computational Thinking and Programming (Python)

- Introduction to Programming: What is programming, introduction to Python.
- Python Basics: Syntax, variables, data types, operators, control structures (if, else, for, while).
- Functions: Definition, function calls, parameters, return values.

- Lists, Tuples, and Dictionaries: Operations, traversals, built-in functions.
- Strings: Manipulation, operations, slicing, indexing.
- File Handling: Opening, reading, writing, and closing files in Python.
- Data Structures: Introduction to stacks and queues.

Unit 3: Societal Impacts of Technology

- Digital Footprints: Data privacy and protection.
- Cyber Ethics: Ethical use of technology.
- Intellectual Property Rights: Copyright, patents, plagiarism.
- Cybersecurity: Concepts, malware, phishing.
- E-waste Management.

Unit 4: Database Management

- Database Concepts: What is a database, its types (relational, hierarchical, etc.).
- Introduction to SQL: Basic SQL queries (SELECT, INSERT, DELETE, UPDATE).
- Relational Database: Tables, rows, columns, keys (primary, foreign).
- Normalization: Concepts and need for normalization.

- Introduction to DBMS software: Hands-on with MySQL or other database software.

Practical and Project Work

- Python Programming: Simple projects using Python.
- SQL Queries: Practical database management tasks using SQL.
- Case Study: Projects analyzing real-world applications of database and computing technologies.