

S.E.C.- BASIC IT TOOLS

Dr Ashok

August 2026

From **06 August to 31 August 2026**, the teaching will focus on **Unit-I: Introduction to Computer**. The topics covered will include introduction to computers and the latest IT gadgets, evolution and applications of computers, basics of hardware and software, application software, system software and utility software. Students will also learn about the Central Processing Unit (CPU), input and output devices, computer memory and storage, and mobile applications. The teaching will include classroom explanation, demonstrations, identification of computer components and practical activities to develop basic computer knowledge.

September 2026

During **September 2026**, the focus will be on **Unit-II: Introduction to Operating System**. Students will learn the meaning and functions of an operating system and different operating systems used on desktops, laptops, mobile phones and tablets. The topics will include user interface, taskbar, icons and shortcuts, running applications, simple operating system settings, changing system date and time, changing display properties, and adding or removing programs and features. Practical demonstrations will be conducted to help students understand and perform these operations.

October 2026

During **October 2026**, the remaining topics of **Unit-II** and the beginning of **Unit-III: Internet and World Wide Web** will be completed. Students will learn about adding, removing and sharing printers and file and folder management, including creating, renaming, copying, moving and deleting files and folders. After completing the Operating System unit, students will be introduced to computer networks, LAN, WAN and network topologies. The concepts of the Internet, World Wide Web and applications of the Internet will also be explained through examples and practical demonstrations.

November 2026

During **November 2026**, **Unit-III** will be completed and **Unit-IV: E-mail and Social Networking** will be taught. Students will learn about website addresses and URLs, popular web browsers such as Microsoft Edge, Google Chrome, Mozilla Firefox and Opera, popular search engines and effective searching on the Internet. The e-mail section will cover opening an e-mail account, Inbox and Outbox, creating and sending e-mails, replying to and forwarding messages, searching e-mails, attaching files and creating an e-mail signature. Students will also be introduced to social networking platforms such as Facebook, Twitter/X, LinkedIn and Instagram, along with instant messaging applications such as WhatsApp, Facebook Messenger and Telegram.

December 2026

From **01 December to 08 December 2026**, the remaining topics of **Unit-IV** will be completed, including blogs and Digital Locker (DigiLocker). The entire syllabus will then be revised through question-answer sessions, practical demonstrations and important topic discussions. Students will be given opportunities to clarify their doubts and practise important computer operations. A comprehensive assessment covering **Units I to IV** will be conducted on **08 December 2026** to evaluate students' theoretical understanding and practical knowledge.

Ashok

Lesson Plan: MDC COMPUTER SCIENCE (Fundamentals of CS)

Dr Ashok

Period: 06.08.2026 to 08.12.2026

During the month of **August 2026 (06.08.2026 to 31.08.2026)**, **Unit-I: Computer Fundamentals** will be covered. The topics will include the introduction and evolution of computers through different generations, characteristics of computers, strengths and limitations of computers, classification of computers, functional components of a computer system, and applications of computers in various fields. Students will be introduced to the basic concepts of computers through classroom discussions, demonstrations, diagrams, and identification activities. The month will conclude with short questions, revision, and a basic assessment.

During **September 2026 (01.09.2026 to 30.09.2026)**, the remaining topics of Unit-I and the beginning of **Unit-II: Memory Systems** will be taught. Students will learn about system software, application software, and utility software. The concepts of bit, byte, word, nibble, storage locations and addresses, units of storage capacity, access time, and memory hierarchy will then be introduced. Primary memory, including RAM, ROM, PROM, and EPROM, will also be explained. Practical examples, storage-unit exercises, comparisons between different types of memory, and classroom activities will be conducted, followed by an assessment of Unit-I.

During **October 2026 (01.10.2026 to 31.10.2026)**, Unit-II will be continued with **Secondary Memory and I/O Devices**. Students will study different types of storage devices such as magnetic tape, hard disk, optical disk, and flash memory. The concepts of I/O ports, device controllers, and device drivers will also be explained. Different input devices, including keyboard, mouse, touch pad, trackball, joystick, magnetic stripes, scanner, digital camera, and microphone, will be discussed along with their uses. Demonstrations and practical identification activities will be used to help students understand these devices. A quiz or test will be conducted at the end of the unit.

During **November 2026 (01.11.2026 to 30.11.2026)**, the remaining topics of Unit-II and **Unit-III: Operating System** will be completed, followed by the beginning of Unit-IV. Students will learn about output devices such as speakers, monitors, printers, and plotters. Different types of printers, including laser, inkjet, and dot matrix printers, will be explained. Unit-III will cover the definition, functions, and features of an operating system along with icons, files, folders, shortcuts, the Start Button, Task Bar, Status Buttons, Recycle Bin, Desktop, My Computer, My Documents, Windows Explorer, and Control Panel. Practical activities such as creating, renaming, copying, moving, and deleting files and folders will be performed. Towards the end of the month, students will be introduced to computer networks, the Internet, its history, and the working of the Internet.

During **December 2026 (01.12.2026 to 08.12.2026)**, **Unit-IV: The Internet** will be completed. Students will learn about different modes of connecting to the Internet and electronic mail, including its introduction, advantages and disadvantages, user IDs, passwords, e-mail addresses, message components, message composition, and mailer features. Browsers and search engines will also be explained through practical demonstrations and Internet-based activities. Students will practice composing e-mails and performing searches using browsers and search engines. The remaining time will be utilized for **complete syllabus revision, doubt clarification, practice questions, and a model examination/final assessment.**

Ashok

Month-Wise Lesson Plan: logical organization of computer (Major)

Dr Ashok

Period: 06.08.2026 to 08.12.2026

During the month of **August 2026 (06.08.2026 to 31.08.2026)**, **Unit-I: Number Systems and Data Representation** will be covered. Students will be introduced to different number systems such as Binary, Octal, Decimal, and Hexadecimal, along with conversions from one number system to another. The BCD number system and different types of BCD codes, including Natural Binary Code, Weighted Code, Self-Complementing Code, and Cyclic Code, will be explained. The concepts of error-detecting and error-correcting codes will also be introduced. Students will further study character representation schemes such as ASCII, EBCDIC, and Unicode. Number representation will include integer numbers using sign-magnitude, 1's complement, and 2's complement representations. The month will conclude with an introduction to real numbers and normalized floating-point representation, supported by numerical exercises and classroom practice.

During **September 2026 (01.09.2026 to 30.09.2026)**, the remaining topics of **Unit-I** and **Unit-II: Binary Arithmetic and Boolean Algebra** will be covered. Students will practice binary addition, subtraction, multiplication, and division, including arithmetic using 1's and 2's complement representations. Addition and subtraction using BCD representations will also be discussed through numerical problems. The concepts of Boolean Algebra, its postulates, basic Boolean theorems, Boolean expressions, Boolean functions, and truth tables will then be introduced. Students will learn canonical representations of Boolean expressions, including Sum of Products (SOP) and Product of Sums (POS). Simplification of Boolean expressions using Boolean postulates and theorems will be practiced through various problems.

During **October 2026 (01.10.2026 to 31.10.2026)**, **Unit-II** will be completed and **Unit-III: Logic Gates and Combinational Circuits** will be taken up. Students will study Karnaugh Maps (K-Maps) for up to four variables and learn how to simplify Boolean expressions using K-Maps, including the handling of Don't Care conditions. Unit-III will begin with basic logic gates such as AND, OR, and NOT, followed by universal gates NAND and NOR, and other gates such as XOR and XNOR. Their symbols, truth tables, and Boolean expressions will be explained. Students will then be introduced to the design procedures of combinational circuits and will study Half Adder, Full Adder, Half Subtractor, and Full Subtractor circuits.

During **November 2026 (01.11.2026 to 30.11.2026)**, the remaining topics of **Unit-III** and the beginning of **Unit-IV: Sequential Circuits** will be covered. Students will study Multiplexers, Demultiplexers, Decoders, Encoders, Comparators, and Code Converters, including their working principles, truth tables, and applications. Design and analysis of combinational circuits will be practiced through numerical and circuit-based exercises. Unit-IV will then introduce sequential circuits and basic flip-flops. Students will learn about the working of synchronous and asynchronous flip-flops, triggering methods, and different types of flip-flops such as Clocked RS, D-type, JK, T-type, and Master-Slave flip-flops. State tables, state diagrams, and state equations will also be introduced.

During **December 2026 (01.12.2026 to 08.12.2026)**, **Unit-IV** will be completed. Students will study flip-flop characteristics and excitation tables and will learn the design of sequential circuits. Different types of registers, including Serial-In Serial-Out (SISO), Serial-In Parallel-Out (SIPO), Parallel-In Serial-Out (PISO), and Parallel-In Parallel-Out (PIPO) shift registers, will be explained with their working and applications. Suitable circuit diagrams, truth tables, and practical examples will be used to strengthen understanding. The remaining time will be utilized for **complete syllabus revision, numerical practice, doubt clarification, previous questions, and a model examination/final assessment**.

