

Govt. College for Girls , Sector-14, Gurugram

Name of the Assistant Professor : Mrs. Vanita Saini

Class : BCA Ist Semester

Subject & Code : COMPUTER & PROGRAMMING FUNDAMENTALS (BCA-101)

Month	Syllabus
13 July to 21 July	Computer Fundamentals: Generations of Computers,
23 July to 28 July	Definition, Block Diagram along with its components, characteristics & classification of computers,
30 July to 4 August	Limitations of Computers, Human-Being VS Computer, Applications of computers in various fields.
6 August to 11 August	Memory: Concept of primary & secondary memory, RAM, ROM, types of ROM, Cache Memory, flash memory,
13 August to 18 August	Secondary storage devices: Sequential & direct access devices viz. magnetic tape, magnetic disk, optical disks i.e. CD, DVD, virtual memory.
20 August to 25 August	Computer hardware & software: I/O devices, definition of software, relationship between hardware and software, types of software.
27 August to 1 Sept	Overview of operating system: Definition, functions of operating system, concept of multiprogramming, multitasking, multithreading, multiprocessing,

3 Sept to 8 Sept	time-sharing, real time, single-user & multi-user operating system. Computer Virus: Definition, types of viruses, Characteristics of viruses, anti-virus software.
10 Sept to 15 Sept	Computer Languages: Analogy with natural language, machine language, assembly language, high-level languages, forth generation languages, compiler,
17 Sept to 22 Sept	interpreter, assembler,
1 Oct to 6 Oct	Loader , characteristics of a good programming language, Planning the Computer Program: Concept of problem solving, Problem definition, Program design, Debugging,
8 Oct to 13 Oct	Types of errors in programming, Documentation. Structured programming concepts, Programming methodologies viz. top-down and bottomup programming,
15 Oct to 20 Oct	Overview of Networking: An introduction to computer networking, Network types (LAN, WAN, MAN),
22 Oct to 27 Oct	Network topologies, Modes of data transmission, Forms of data transmission
29 Oct to 3 Nov & 5 Nov.	Advantages and disadvantages of Structured programming. Transmission channels(media),
6 Nov. To 13 Nov.	Introduction to internet and its uses, Applications of internet, Hardware and Software requirements for internet, Intranet, Applications of intranet

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Name of the Assistant Professor : Mrs. Vanita Saini

Class : M.Sc. (Computer Sc.) Ist Semester

Subject & Code : COMPUTER ORGANISATION AND ARCHITECTURE (16MCS21C4)

Month	Syllabus
1 August to 4 August	Representation of Information: Number Systems: Binary, Octal and Hexadecimal, Integer and Floating-point representation,.
6 August to 11 August	Character codes: ASCII and EBCDIC. Basic Building Blocks and Circuit Design: Boolean Algebra and Logic Gates: OR, AND, NOT, XOR Gates;

13 August to 18 August	De Morgan's theorem; Universal building blocks; Simplifying logic circuits : sum of product and product of sum form; Karnaugh Map simplification;
20 August to 25 August	Combinational logic blocks (Adders, Multiplexers, Encoders, Decoder), Sequential logic blocks (Latches, Flip-Flops, Registers, Counters)
27 August to 1 Sept	Register transfer and Micro-operations: Register Transfer Language; Bus and memory Transfer; Micro operations: Arithmetic, Logic & Shift Micro operations.
3 Sept to 8 Sept	Basic Computer Organization and Design: Instructions Codes, Register reference, Memory Reference & Input-Output instructions,
10 Sept to 15 Sept	Instruction Cycle, Timing and Control, Interrupts; Design of Control unit: Hardwired control unit, Micro-programmed control unit.
17 Sept to 22 Sept	Memory Organization: Memory Hierarchy, Main Memory, Auxiliary Memory, Cache Memory, Virtual Memory.
1 Oct to 6 Oct	Register Organization and Parallel Processing: General Register Organization, Stack Organization,
8 Oct to 13 Oct	Instruction Formats, Addressing Modes; Data Transfer & Manipulation Instructions, CISC and RISC: Features and Comparison, Pipeline and Vector Processing: Parallel processing, Pipelining, Arithmetic Pipeline, Instruction pipeline and Arrays Processors.
15 Oct to 20 Oct	Input-Output Organization: Peripheral Devices, Input-Output interface, Asynchronous Data Transfer,
22 Oct to 27 Oct	Modes of transfer, Priority interrupt, Direct Memory Access (DMA)
29 Oct to 3 Nov & 5 Nov.	, input-output processors (IOP), Serial communication. Multi-processors, characteristics of multi-processors,
6 Nov. To 13 Nov.	Interconnection structures, Inter-processor Arbitration, Inter-processor Communication and Synchronization, Cache Coherence.

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July	
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