



Bharat Shikshan Sanstha's

Shri Chhatrapati Shivaji College, Omerga

Tq. Omerga Dist. Osmanabad - 413606 (MS), India

(Affiliated to Dr. Babasaheb Ambedkar Marathwada University, Aurangabad) | NAAC Reaccredited 'B' Grade

Name of Subject : Computer Fundamental

Course Code : CS01

Class :B.Sc. First Year

Subject :Computer Sci.(Gen).

Fundamentals of Computer System : Introduction, Characteristics & features of Computers

Part-1

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Objective

- **To impart basic introduction to computer Hardware & Software Component .**


Computer Fundamental: Introduction

- **Comuter are now affecting every human activity and bringing many changes in**

- **Industry**
- **Government**
- **Education**
- **Medicine**
- **Scientific research**
- **Soccial Science**
- **Arts like music and painting etc.**

- They are presently used ,among other applications ,to
- Design building,bridges and machines
- Control Space vehicles

- Assist in railway reservation
- Control inventories to minimize material cost.
- Grade Examinations and process results
- Aid in teaching
- Systematically store and quickly retrieve data on land records
- Play games like chess and video games

- **The areas of application of computers are confined only by limitations on human creativity and imagination.**
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- **In fact any task that can be carried out systematically ,using a precise step-by-step method, can be performed by a computer.**
 - **Therefore it is essential for every educated person today to know about Computer.**
 - **Its strengths ,its weakness and its internal structure.**
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Computer

- Computer comes from compute words .
- Compute means calculations.
- Computer is a **electronic device** which process **arithmetic**($-$, $+$, $*$ and $/$) as well as **logical**(AND,OR) calculations.
- Computer can be defined as a machine which process the given data to arrive at useful information.
- The processing (execution of instruction) it does is with the help of relevant software,which is set of instructions ,given to the computer.
- These set of instructions are called software programs ,which make computer work and get the required task done.



- Computer works basically on **data**, which is collection of raw facts and figures which is relevant to the organisation.

- Data may be text,numbers,audio,Pictures and video type.
- These **five** types of data processed by computer using relevant softwares.
- This processed data is known as information,it helps in the process of decision making.
- For example students marks,pay slips,attendance ,sales report.

Computers Science

- Computer science is a branch of science and technology that includes all aspects of a computer system including computer software, hardware, and networking.
- Computer Science is the study of computing, programming and computation in correspondence with Computer System.
- Computer Science is the study of Computers and computational system.
- The science that deals with the theory and methods of processing information in digital computers, the design of computer hardware and software, and the applications of computers.

Characteristics of Computers

- Computers are becoming very popular and used in each field because of their characteristics.
- **Fastness :**

- The speed at which the Computer operates is very High.
- It is usually measured in MIPS(Million Instructions per Second),
- Computer speed is measured in micro seconds (10^{-3}), Milliseconds (10^{-6}), nanoseconds (10^{-9}) and even Picoseconds (10^{-12}).
- A powerful computer is capable of performing about 3-4 million simple operations per second.
- Computer is able to process the data and give the output in fractions of seconds in form of information. This information helps the user to take right information on right time.
- The fastness of a computer is a characteristics which gives it the power to manage the extreme data demands.

- **Accuracy :**
- Computers perform calculations with 100% accuracy.

- The errors in computer are due to human and inaccurate data.
- **Reliability :**
- A computer is reliable as it gives consistent result for similar set of data i.e., if we give same set of input any number of times, we will get the same result.

- **STORAGE**

- Computer system give high storage capacity.

- The storage capacity of computer is measured in Bytes, KB(Kilo Bytes, MB(Mega Byte) ,GB(Giga Bytes),TB (Tera Bytes) and ZB (Zeta Bytes) which can store large amount of data.
- Computer not only store large amount of data but it also can store data for long period of time.
- For example we stored songs on the disk of the computer system. This songs will remain on the disk until we remove it or disk crash.

- **Versatile**
- Computer system can work upon numbers, graphics ,audio, video etc. making it versatile.

- A computer is capable of performing almost any task according to given instructions.
- **Diligence: -**
- A computer is free from tiredness, lack of concentration, fatigue, etc.
- It can work for hours without creating any error.
- If millions of calculations are to be performed, a computer will perform every calculation with the same accuracy.
- Due to this capability it overpowers human being in routine type of work.

- **No IQ: -**
- Computer is a dumb machine and it cannot do any work without instruction from the user.

- It performs the instructions at tremendous speed and with accuracy.
- It is you to decide what you want to do and in what sequence.
- So a computer cannot take its own decision as you can.
- **No Feeling: -**
- It does not have feelings or emotion, taste, knowledge and experience.
- Thus it does not get tired even after long hours of work.
- It does not distinguish between users.

Unit No.	Topic Name	Ref.	No. of Lecturers
1	Fundamentals of Computer System : Introduction, Characteristics & features of Computers, Components of Computers ,Organization of Computer.	1/1	3
2	Algorithm and Flowcharts : Algorithm: Definition , Characteristics, Advantages and disadvantages , Examples Flowchart : Definition ,Define symbols of flowchart ,Advantages and disadvantages ,Examples	2/1 3/3 3/4	3 3
3	Computer Generation & Classification Generation of Computers : First to Fifth , Classification of Computers ,Distributed & Parallel computers	2/12	3
4	Computer Languages Types of Programming Languages :Machine Languages ,Assembly Languages ,High Level Languages • Assembler, Linker, Loader, Interpreter & Compiler	2/9 2/9	3

Unit No.	Topic Name	Ref.	No. of Lecturers
5	Computer Memory : <ul style="list-style-type: none"> Memory Cell & Organization Types of Memory (Primary And Secondary) : RAM ,ROM ,PROM ,EPROM, Secondary Storage Devices (FD, CD, HD, Pen drive, DVD, Tape Drive, DAT) 	2/4 2/4	3
6	I/O Devices: Input Devices : Touch screen , OMR, OBR , OCR, Light pen , Scanners , Digitizers Output Devices :Plotters, LCD , Plasma Display, Printers	1/4 1/4	3
7	Processor : Structure of Instruction, Description of Processor , Processor Features ,RISC & CISC	2/5	6
8	Operating system Concepts : Why Operating System , Functions of Operating System, Types of Operating ,System , Batch O.S. , Multiprogramming O.S. , Time Sharing O.S ,Personal Computers O.S. ,Network O.S.	2/9 2/9	3
Core Ref.	1. Fundamentals of Information Technology By Chetan Srivastava, Kalyani Publishers 2. Fundamentals of Computers By V. Rajaraman, PHI Publication, IVth Edition. 3. 3. Fundamentals of Programming By Raj K. Jain, S. Chand Publication		

Fundamentals of Computer System

Core References

1. Fundamentals of Information Technology By Chetan Srivastava, Kalyani Publishers
2. Fundamentals of Computers By V. Rajaraman, PHI Publication, IVth Edition.
3. Fundamentals of Programming By Raj K. Jain, S. Chand Publication

Additional Reference:

1. Computer Today By Suresh K. Basandra, Galgotia Publication, Updated Edition
2. Computer Fundamental By B. Ram, BPB Publication.

Thank you !
