

Government PG College, Ambala Cantt

Course File(Session 2023-24)

Name of Professor: Dr. Poonam Dhiman

Class: BTM-I /1st Semester

Subject code: B23-CSE-104 (Common with B23-CAC-104)

Subject Name: Fundamentals of Computer Science

Credits	Theory	Practical	Total
	1	1	2
Contact Hours	1	2	3
Max. Marks:50(30(T)+20(P))	Time: 3 Hrs.(T), 3Hrs.(P)		
Internal Assessment Marks:15(10(T)+5(P))			
End Term Exam Marks:35(20(T)+15(P))			
Part B-Contents of the Course			
Unit	Topics	Contact Hours	
I	Introduction to Computers: Definition of Computers, History and Generations of Computers, Characteristics of computer, Classification of Computers. Fundamental Block diagram of Computer: CPU, Input & Output Unit.	4	
II	Software: Definition of Software, Types of Software-System software, Application software and Utility software. Types of Computer Languages, Assemblers, Interpreters, Compiler.	4	
III	Introduction to Operating Systems: Types of Operating System, Functions of Operating System. Windows: Introduction to Windows, Starting Windows, Desk Top, Task Bar, Opening and closing applications, icons-creating, renaming and removing. Date and Time setting, Working with files and folders-creating, deleting, opening, finding, copying, moving, and renaming.	4	
IV	Networking: Concept, Basic Elements of a Communication System, Data Transmission Media, LAN, MAN, WAN. Introduction of Internet and WWW, Basic working of a Web Browser, Introduction to popular web browsers.	4	

V*	<p>Practicum:</p> <p>Students are advised to do laboratory/practical practice not limited to, but including the following types of problems:</p> <ul style="list-style-type: none"> • Dismantling the system unit, recognize all major components inside a PC, describe function of each component and define the relationship of internal components • Explore and describe some system utility like regedit, memory portioning, control panel, window tools. • Understanding control panel • Date and Time setting. • Working with files and folders-creating, deleting, opening, finding, copying, moving, and renaming. 	25
Suggested Evaluation Methods		
<p>Internal Assessment:</p> <p>➤ Theory</p> <ul style="list-style-type: none"> • Class Participation: 4 • Seminar/presentation/assignment/quiz/class test etc.: NA • Mid-Term Exam: 6 <p>➤ Practicum</p> <ul style="list-style-type: none"> • Class Participation: NA • Seminar/Demonstration/Viva-voce/Lab records etc.: 5 • Mid-Term Exam: NA 		<p>End Term Examination:</p> <p>A three hour exam for both theory and practicum.</p>
Part C-Learning Resources		
<p>Text /Reference Books:</p> <ul style="list-style-type: none"> • Fundamentals of Computers, V. Rajaraman 6th edition PHI Learning Private Limited 2014 • Peter Norton: Computing Fundamentals. 6th Edition, McGraw Hill-Osborne,2007 • Alexis Leon and Marthews Leon: Introduction to Computers, Leon Vikas,1999. • Internet Basics. E. Douglas Commer PHI. 		

COURSE OBJECTIVES

The course objectives outlined are as follows:

- **Identifying typical computer and digital device components**, including processors, keyboards, monitors, speakers, power buttons, etc.
- **Understanding the function of basic digital components**, such as identifying and using a mouse, powering on external monitors, understanding inputs and outputs of different devices and more.
- **Associating hardware with digital devices**, such as being able to connect and use a printer, bluetooth, speakers, an external monitor and internet modems.
- **Navigating digital devices**, such as being able to select and use software or applications, using multiple windows or tabs and identifying and finding files.
- **Understanding cloud computing** and its uses.
- **Utilizing digital storage**, including identifying a variety of media storage devices as well as understanding basic use cases.
- **Troubleshooting basic digital issues**, including common hardware and software issues.
- **Understanding online safety and responsibility** including protecting privacy online and using information responsibly.

COURSE OUTCOMES

After the successful completion of the course, students will be able:

- Effectively using computer applications and hardware.
- Identifying and using a variety of media storage and understanding use cases.
- Developing an understanding of operating systems and graphic user interfaces.
- Identifying successful troubleshooting strategies for common hardware and software issues.
- Understanding transferrable functions between different types of software.
- Differentiating between software types and common use cases.
- Applying computer fundamentals knowledge to other technology, including mobile devices.
- Understanding network technology and applying knowledge in cross-platform connectivity uses.
- To introduce to the students, the basic understanding of the working of a computer system.
- To familiarize the students with the concept of algorithms and flowchart.
- To familiarize the students with the various types of software.
- To make the students familiar with the basic internet technology and concepts.

Lesson Plan

Week No	Scheduled Dates	Topics to be covered
1	July 24, 2023- July 26, 2023	Computer Fundamentals: Evolution of Computers through generations
2	July 31, 2023- Aug 02, 2023	Characteristics of Computers, Strength and Limitations of Computers
3	Aug 07, 2023- Aug 09, 2023	Classification of Computers, Fundamental Components of Computer System,
4	Aug 14, 2023- Aug 16, 2023	Application of computers in various fields, Types of Software, System Software, Application Software, Utility Software
5	Aug 21, 2023- Aug 23, 2023	Memory System: Concept of bit, byte, word, nibble, storage locations and addresses, measuring units of storage capacity, access time,
6	Aug 28, 2023- Aug 30, 2023	Concept of memory hierarchy, Primary Memory-RAM, ROM, PROM, EPROM,
7	Sept 04, 2023- Sept 06, 2023	Revision and Practice;
8	Sept 11, 2023- Sept 13, 2023	Secondary Memory- Types of Storage Devices, Magnetic Tape, Hard Disk, Optical Disk, Flash Memory
9	Sept 18, 2023- Sept 20, 2023	I/O Devices, Input – Output parts of Desktop Computers, Device
10	Sept 25, 2023- Sept 37, 2023	Controller, Device Driver, Input Devices- Classification and Use

11	Oct 02, 2023- Oct 04, 2023	keyboard, pointing Devices- Mouse, Touchpad, Track Ball, Joystick, Magnetic Strips, Scanner,
12	Oct 09, 2023- Oct 11, 2023	Digital camera, Micro phone, Output Devices- speaker,
13	Oct 16, 2023- Oct 18, 2023	Monitor, Printers, Classification , laser, inkjet, dot matrix, Plotters
14	Oct 23, 2023- Oct 25, 2023	Revision and Practice;
15	Oct 30, 2023- Nov 01, 2023	Introduction to Operating System- Definitions, function,
16	Nov 06, 2023- Nov 08, 2023	Features of OS, Icon, folder, files
17	Nov 20, 2023- Nov 22, 2023	Start button, task bar, folders, short cuts, recycle bin, desktop, my computer,
18	Nov 27, 2023- Nov 29, 2023	My documents, window explorer, control panel
19	Dec 04, 2023- Dec 06, 2023	Revision and Practice;
20	Dec 11, 2023- Dec 13, 2023	The Internet; introduction to networks and internet, history, internet
21	Dec 18, 2023- Dec 20, 2023	Working of the internet, modes of connecting to internet
22	Jan 01, 2024- Jan 03, 2024	Electronic mail- introduction , advantages and disadvantages, user ids, password, email addresses, message composition
23	Jan 08, 2024- Jan 10, 2024	Message component, mailer features, browsers and search engines, Revision and Practice;