

GUJARAT TECHNOLOGICAL UNIVERSITY

MASTERS IN COMPUTER APPLICATION (Integrated MCA)

Year – I (Semester – I) (W.E.F. JULY 2013)

Subject Name & Code: Fundamentals of Computers (4410601)

1. Objectives: Students will learn

- Internal components and peripheral devices of computer, and their inter-play
- Basics of DOS, Types of Software, Virus
- Introduction to OpenOffice and Linux

2. Prerequisites: None

3. Course Contents:

Sr. No.	Course Content	No. of Sessions
1	Need of Computers Definition of Computer, Importance of Computer, Classification of Computer: According to Purpose, Technology, Size and Storage Capacity, and Historical Advancement; Popularity of Computers, Uses of Computers	04
2	Structure of Computers Input/Output System, CPU, Memory Unit: ROM, RAM, CMOS; Logic Gates/Circuits, Bits and Bytes, Number System for Data Representations, Coding Schemes, Difference Between Data and Information, Machine Cycles: Fetch, Decode, Execute, Store; Flash Memory, Factors Affecting Speed, Bus and Types of Bus, Cache Memory, USB, Serial and Parallel Ports, Expanding Computer with Ports, Slots and Boards	12
3	Hardware Concepts Components of Motherboard, Peripheral Devices, Basic Input Devices, Special Input Devices, PDA, Monitors, LCD, Printers and their classifications, Storage Devices, Cards, Ports and Cords, Power-supply: SMPS, CVT, Stabilizer, UPS	09
4	How Hardware Works Inside the PC, How Circuit Boards Work, POST, Disk Boot, The Processor and Interrupts, BIOS, Drivers, Plug-n-Play, RTC	06
5	Software Concepts Classification of Software, Introduction about Operating Systems, Introduction to Programming and Types of Programming Languages, Language Translators, Software Tools and Utilities, General and Special Purpose Application Software, Limitations of Computers	06

6	Introduction to DOS Importance of DOS, File Structure and Referencing, Naming Conventions, Wildcards, Internal and External Commands	03
7	Introduction to Computer Viruses Definition and Characteristics of Virus, How Viruses Spread, Types of Virus, Prevention from Virus and Software Solutions	02
8	Introduction to OpenOffice What is OpenOffice.org: Writer, Calc, Impress, Draw?, Getting Started, Facing the Interface, Closing OpenOffice, What OpenOffice can do?, Getting Help	03
9	Introduction to Linux General purpose utilites: cal, date, echo, bc, script, mailx, passwd, who, uname, tty and stty, What is File and Filename?, HOME, pwd, cd, mkdir, rmdir, ls, Absolute and Relative Filenames, Unix File System	05

4. Text Books:

1. Ashok Arora and Shefali Bansal, “Computer Fundamentals”, Excel Books Publications
2. Ron White, “How Computers Work”, TechMedia Publications
3. Peter Norton, “Introduction to Computers”, Tata McGraw Hill
4. Gurdy Leete, Ellen Finkelstein and Mary Leete, “OpenOffice.org For Dummies”, Wiley Publishing Inc.
5. Sumitabha Das, “Unix Concepts And Applications”, Tata McGraw-Hill Education

5. Chapter-wise Coverage from Text Books:

Text Book	Chapter(s)	Unit(s)
1	1, 2, 3, 4, 5, 6	1, 2, 3, 5, 6, 7
2	1, 2, 3, 4	4
3	7	2
4	1, 2	8
5	3, 4	9

6. Reference Books:

1. Pradeep K. Sinha and Priti Sinha, “Computer Fundamentals”, BPB Publications
2. V. Rajaraman, “Fundamentals of Computers”, PHI Learning
3. E. Balagurusamy, “Fundamentals of Computers”, Tata McGraw Hill
4. Alexis Leon and Mathews Leon, “Introduction to Computers”, Vikas Publishing House Pvt. Ltd.

Note: (a) It is highly recommended that students be encouraged for usage of completely open source solutions like Linux for Operating System and OpenOffice for day-to-day activities like text-editing, calculations and preparing presentation shows. **(b)** It is recommended that students be shown physical computer hardware parts and peripheral devices in the laboratory. **(c)** Laboratory sessions for practical knowledge of DOS, Linux and OpenOffice are recommended.

7. Accomplishment of the student after completing the course:

The student will be able to identify and internal and external components of the computer as well as understand their working. They will be able to work with open source softwares like Linux Operating System and OpenOffice.