MAJOR COURSE
CAP122J   COMPUTER APPLICATIONS (COMPUTER FUNDAMENTALS)
CREDITS: THEORY – 04; PRACTICALS - 02

Course Objectives:
1. *To introduce to the students the basic understanding of the working of a computer system.*
2. *To familiarize the students with the basic notations and data representation methods used.*
3. *To familiarize the students with the various software and hardware aspects of computers.*
4. *To make the students understand the need and working of the interconnection and communication between computers.*
5. *To make the students familiar with the basic internet technology and concepts.*

THEORY (4 CREDITS)

Unit – I

Introduction to Computers, History, Generation of Computers, Data Processing, Memory Hierarchy. Input/ Output devices, BIOS, VDU
Data Representation – Binary, Decimal, Octal, Hexadecimal and their conversions, 1's and 2's compliment.
Block Diagram of a Basic Computer and its working.

Unit – II

Application Software and System Software, Open-Source Software and Proprietary Software.
Computer Languages and its types (Machine Language, Assembly Language, High Level Language) Translators, Compiler, Interpreter
Operating System and its functions, Types (Single-User, Multi-User, Multi-Tasking, Time-Sharing, Distributed, Real-Time)

Unit – III

Data Communication – Need for Network Communication, Modes of Communication-Simplex,
Duplex, Half-Duplex; Introduction to Networks, LAN, MAN, WAN
Protocols – Ethernet, IP, TCP, UDP, HTTP
Networking Elements – Switch, Router, Server, Firewall

Unit – IV

Introduction of Internet and WWW, Basic working of a Web Browser, Introduction to popular web browsers.
Concepts of URL, Domain Name, Web Server, Smartphone Apps, Email, Instant Messaging, ISP
Communication and Collaboration: Using e-governance, search engines, Webhosting, netiquettes.

COMPUTER FUNDAMENTALS LAB. (2 CREDITS)

MS Word Basics:

1. Basics of Word Processing, Create, Save, Edit, open files.
2. Using the Interface (Menu Toolbars), Editing Text (Copy, Delete, Move Etc.). Finding and replacing text.
3. Insert: Table, images, textbox, word art, symbols.
4. Auto correct Feature, Grammar check Facility, Formatting and Editing, Font, Size, alignment paragraph, Bullets and numbering.
5. Table: Insert and Draw, changing cell width and height, insert/delete rows in columns.
6. Borders and shadings, Mail merge.

MS Excel Basic:

Creating and opening worksheets, saving and data entry in cells.

7. Entry of Numbers, Text and Formulae, Moving Data in the Worksheet.
8. Selecting Data Range, Using the Interface (Toolbars, Menus).
9. Editing basics, working with Workbooks Saving, Cell Reference, Formatting, Editing.
10. Working with Data, charts, graphs.

MS Power Point Basics:

11. Creating, opening and saving a PowerPoint slide.
12. Creating presentations using existing templates.
13. Entering and editing text. Inserting and deleting slides.
14. Use of fonts and drawing, inserting images, graphics., viewing and printing.
15. Creation of animated slides, adding images, graphics and sound in slides. Adding Timing, auto slide changes.

REFERENCES:

1. Fundamentals of Computers, V Rajaraman 6th edition PHI Learning Private Limited 2014
2. Computer today, Donald H. Sanders, McGraw Hill Publishing Company.
3. Microcomputers Software and Applications, Dennis P. Curtin and Leslie R. Portel, PHI.
4. Data Processing: An Introduction, Donald P. Spencer and Charles R. Merril Pub. And Co.
5. Computers and Their Applications, Larry Joel Goldestein, PHI.
6. Computer Fundamentals. P. K. Sinha
7. Internet Basics. E. Douglas Commer PHI.