

CAP170:FUNDAMENTALS OF INFORMATION TECHNOLOGY

L:3 T:0 P:0 Credits:3

Course Outcomes: Through this course students should be able to

CO1 :: know about the basic concepts, peripheral devices and various type of memories of computing devices.

CO2 :: review various types of operating system and networking concepts to better understand the functioning of computer system

CO3 :: explain database concepts and programming languages to handle and process data

CO4 :: examine the advance technologies such as IoT and cloud computing to capture ,store, and process the data.

Unit I

Fundamentals of Computer : characteristics & generation of computers, block diagram of computer, application of computers in various sectors, data representation using number system, conversion in number systems

Unit II

Computer Storage, Processing and I/O Devices : types of memory, memory units, secondary storage devices: HDD, flash drives and optical disks: DVD, SSD, I/O devices such as keyboard, mouse, LCDs, scanner, plotter, printer; latest I/O devices in market

Unit III

Data Communication and Networks : local and global search of network, digital and analog transmission, components of data communication system, modes of communication (simple, half-duplex, duplex), network topologies, wireless networks, an overview of internet and its working, Internet connection types, network types, and their features,, use of appropriate networking tools

Unit IV

An Introduction to Operating Systems : basics of operating systems, purpose of operating systems, providing a user interface, types of operating systems, running programs, managing hardware, enhancing an OS with utility software

Unit V

Working with the Databases; Software Programming and Development : working with a database, data independence, database management systems, common corporate database management systems, introduction to programming, categories of programming languages, machine and assembly language, high level languages, SDLC of programming, web development languages

Unit VI

Advanced IT Technologies : introduction to cloud computing, cloud service models, cloud delivery models, concept of virtualization and virtual servers, cloud and database storage, basics of IoT & its applications, introduction to data analytics and big data, basic statistical learning and overview of various tools used for data analysis

Text Books:

1. COMPUTER FUNDAMENTALS PAPERBACK by PRADEEP K SINHA & PRITI SINHA, BPB PUBLICATIONS
2. FUNDAMENTALS OF COMPUTERS PAPERBACK by RAJARAMAN V, ADABALA N, PHI Learning

References:

1. OPERATING SYSTEM CONCEPTS PAPERBACK by ABRAHAM SILBERSCHATZ, PETER B. GALVIN, GREG GAGNE, WILEY
2. FUNDAMENTALS OF DATABASE SYSTEM- PAPERBACK by ELMASRI RAMEZ AND NAVATHE SHAMKANT, PEARSON

