CERTIFICATE COURSE

COMPUTER HARDWARE AND NETWORKS

Certificate Course I	24CHN101	Basics of Hardware	Credits: 2

SYLLABUS

UNIT-I: Number systems – Decimal, Binary, Octal, Hexadecimal – Conversions – LOGIC GATES – Universal GATES – NAND - NOR – Karnaugh maps - Tabulation and Simplifications-

UNIT-II: Basics of Sequential and Combinational logic – Multiplexer and Demultiplexer basics - GRAY code – ASCII code representation

UNIT-III: Introduction to Memories – Types of memories – Registers – Caches – Primary and Secondary memory - Associative memory – Virtual memory– Optical discs – Flash memory systems

UNIT-IV: Basic computer hardware architecture - Functional units – Instruction formats – types – Addressing modes

UNIT-V: Basic I/O devices – Keyboard – Console systems – Mouse – Printer – plotters – Scanners – Basic CPU architecture

Text Books:

1. Charles H.Roth Jr. Fundamentals of Logic design – 4th edition – Jaico publishing house.
2. Hayes – Computer Architecture and organization – TMH 1998.
3. Carl Hamacher.V., Zvonko G. Vranesic, Safwat G.Zaky “Computer organization” TMH

Certificate Course II	24CHN102	Basics of Networks	Credits: 2

SYLLABUS

UNIT-I: Communication model - Data communications networking - Data transmission concepts and terminology

UNIT-II: Protocol architecture - Protocols - OSI - TCP/IP - LAN architecture - Topologies - MAC - Ethernet, Fast Ethernet, Token ring, FDDI, Wireless LANS.

UNIT-III: Network layer - Switching concepts - Circuit switching networks - Packet switching - Routing - Congestion control - IP - Unreliable connectionless delivery - Datagram's - Routing IP datagram's - ICMP.

UNIT-IV: Transport layer - Reliable delivery service - Congestion control - connection establishment - Flow control - Transmission control protocol - User datagram protocol.

UNIT-V: Applications - Sessions and presentation aspects - DNS, Telnet, rlogin, FTP, SMTP – WWW-Basics of Firewalls

References Books:

1. Larry L.Peterson& Bruce S.Davie, Computer Networks - A systems Approach, 2nd edition, Harcourt Asia/Morgan Kaufmann, 2000.
2. William Stallings, Data and Computer Communications, 5th edition, PHI,1997.

Certificate Course Laboratory I	24CHN151	Hardware & Network Lab	Credits: 2

SYLLABUS

Programs:

1. Connecting & disconnecting computer peripherals and components & driver installation
2. Hard disk partitioning and formatting
3. O.S installation like
4. NTFS O.S installation like Linux, Unix
5. Internal component assembling and dissembling
6. Basic trouble shoot using beep code
7. Dual O.S installation
8. Program to perform synchronization using semaphores
9. Program using TCP sockets (Client and Server)
10. Program using UDP sockets (Client and Server)