

**CORE COURSE -XIII - DATA COMMUNICATION NETWORKS**

**Unit I**

Introduction : Data communications - Networks –The internet – a brief history – the internet today – Protocols and standards .

Network Models :Layered tasks - The OSI model –Layers in the OSI model – TCP/IP protocol suite –Addressing – physical addresses .

**Unit II**

Data and signals : Analog and digital - Periodic and analog signals - Digital signals –Transmission impairment –Data rate limits –Performance.

**Unit III**

Digital transmission : Digital-to-digital conversion – Analog-to-digital conversion – Transmission modes .

Analog transmission : Digital-to-analog conversion – Analog-to-analog conversion.

**Unit IV**

Bandwidth utilization : Multiplexing – Spread spectrum.

Transmission media : Guided media – Unguided media .

**Unit V**

Circuit-switched networks – Datagram networks – Virtual-circuit networks – Structure of a switch .

Using telephone and cable networks for data transmission : Telephone network – Dial-up modems – Digital subscriber line – Cable TV networks – Cable TV for data transfer.

**Text book:**

1. Data Communications and Networking, Fourth Edition, Behrouz A. Forouzan and Sophia Chung Fegan, Tata McGraw-Hill-2006.