प्राक्शास्त्री प्रथम वर्ष द्वितीय सत्रार्द्ध

Course V   **Computer Science**   **No. Of Credits : 4**

Unit	Chapter	Total hours
Unit 1: Internet Network	Chapter 1: Introduction and types of network Chapter 2: Network Components	16 hrs.
Unit 2:Internet: Client Server Architecture and communication media	Chapter 3: Client Server Architecture Chapter 4: Communication Media	16 hrs.
Unit 3: Internet : Addressing, Services, Topologies	Chapter 5: Internet Addressing Chapter 6: Network Topologies Chapter 7: Internet Services: Email	16 hrs.
Unit 4: Emerging trends in Internet, Societal Impacts	Chapter 8: Emerging trends in Internet Chapter 9: Societal impacts	16 hrs.

Chapter Details:

Chapter 1: Internet Network
- Introduction ,Types of network : LAN, MAN, WAN

Chapter 2: Network Components
- Network components:
  - Container,
  - System: node, host, workstation, bridge, hub, router, RSM, switch, terminal server,
  - Network adapter: port & interface.

Chapter 3: Client Server Architecture
- Client server architecture: features, advantages, disadvantages & applications
- Peer-to-peer network, comparison between peer-to-peer and client-server architecture.

Chapter 4: Communication Media
- Communication media: introduction, noise absorption, radiation, attenuation, bandwidth(baseband, broadband)
- Types of communication media: Guided & unguided
  - Guided media: Twisted pair wire, coaxial cable, optical fibre
  - Unguided media: Radio waves, microwaves, light wave, infrared waves.

Chapter 5: Internet Addressing
- Types of addressing: logical and physical
- Uniform Resource Locator (URL), types: relative & absolute
- Types of internet addressing :
  - IP addressing: Classes, subnetting, masking
  - Domain Name System (DNS):
    - Types of Domain: Generic, Country, Inverse
    - Hierarchy of domain name server, top level, second level, third level domain
    - Address resolution, DNS working

Chapter 6: Network Topologies

- Network Topologies: features, advantages & disadvantages of Bus, Star, Ring, Token & Mesh

Chapter 7: Internet Services: Email

- Basics of E-mail, uses, advantages, disadvantages, etiquette
- Protocols: SMTP, POP3, IMAP4, MIME
- Structure of Email: addressing, header, body, attachments, signature, CC, BCC
- Mailbox: Inbox, Outbox, Spam
- Creating and sending a new E-mail
- Replying to an E-mail message
- Forwarding an E-mail message
- Sorting and Searching emails.
- Email Client
- Understanding Gmail and its connected applications such as Google forms & Online Docs.

Chapter 8: Emerging trends in Internet

- Brief overview (definitions) of :
  - Cloud Computing
  - Internet of Thongs (IOT)
  - Artificial Intelligence
  - Machine learning
  - Natural Language Processing (NLP)
  - Big data
  - E- Commerce

Chapter 9: Societal impacts

- Societal Impacts of Internet,
- Brief overview (definitions) of following:
  - Digital Footprint
  - Cyber Security
  - Computer Virus
  - Cyber Crime and cyber laws
  - Hacking,
  - Phishing,
  - Cyber bullying,
  - Indian IT Act, preventing cybercrime.
- Awareness about health concerns related to usage of technology like effect on eyesight, physiological issues and ergonomic aspects
- Intellectual Property Rights (IPR) and their violation,
- Plagiarism and copyrights,
- Free and Open Source Software (FOSS)

Practical:

- Internet Browsing
- Google form
- Online assignment/tests
- Sanskrit Wikipedia/ E-Sanskrit resource and Sanskrit Portal
- Email

Reference books:

- Internet Technology and Web design by BPB publications
- NCERT class XII Computer Science textbook

Course Outcomes:

- Develop an understanding of Internet, how it works and its components.
- Understanding and practicing Email concepts.
- Ability to search Sanskrit related texts, through Sanskrit portal, E-Sanskrit resources, and various such websites.
- Ability to perform online tests through Google form.
- Ability to complete assignments in digital form (using MS word and Internet).