**Introduction to Computer Network**

**ICT-104, WEB-104**

**COURSE OBJECTIVES:**

The objective of this course is to-

1. Familiar with various types of computer networks
2. Gain knowledge with networking components and understand different protocols
3. Familiar with Transmission media and tools
4. Different types of networking layer.
5. Installation and introduction of simulation tool using Packet Tracer
6. Troubleshoot a computer network

**Course Contents:**

* **Basic Computer Network**
* [Introduction](https://www.javatpoint.com/computer-network-introduction)
* [Features](https://www.javatpoint.com/computer-network-features)
* [Architecture](https://www.javatpoint.com/computer-network-architecture)
* [Components](https://www.javatpoint.com/computer-network-components)
* [Computer Network Types](https://www.javatpoint.com/types-of-computer-network)
* [Topologies](https://www.javatpoint.com/computer-network-topologies)
* [Transmission Modes](https://www.javatpoint.com/computer-network-transmission-modes)
* Networking Devices
* Internet vs Intranet vs Extranet
* **Networking Models**
* [Models](https://www.javatpoint.com/computer-network-models)
* [OSI Model](https://www.javatpoint.com/osi-model)
* [TCP/IP Model](https://www.javatpoint.com/computer-network-tcp-ip-model)
* **Physical Layer**
* [Digital Transmission](https://www.javatpoint.com/computer-network-digital-transmission)
* [Transmission Media](https://www.javatpoint.com/transmission-media)
* [Guided Media](https://www.javatpoint.com/guided-transmission-media)
* [UnGuided Media](https://www.javatpoint.com/unguided-transmission-media)
* [Multiplexing](https://www.javatpoint.com/multiplexing-in-computer-network)
* [Switching](https://www.javatpoint.com/computer-network-switching)
* [Switching Modes](https://www.javatpoint.com/computer-network-switching-modes)
* [Switching Techniques](https://www.javatpoint.com/computer-network-switching-techniques)
* **Data Link layer**
* [Data Link layer](https://www.javatpoint.com/data-link-layer)
* [Error Detection](https://www.javatpoint.com/computer-network-error-detection)
* [Error Correction](https://www.javatpoint.com/computer-network-error-correction)
* [Data Link Controls](https://www.javatpoint.com/data-link-controls)
* **Network Layer**
* [Network Layer](https://www.javatpoint.com/network-layer)
* [Network Addressing](https://www.javatpoint.com/network-addressing)
* [Routing](https://www.javatpoint.com/computer-network-routing)
* [Network Layer Protocols](https://www.javatpoint.com/network-layer-protocols)
* **Routing Algorithm**
* [Routing Algorithm](https://www.javatpoint.com/computer-network-routing-algorithm)
* [Distance Vector](https://www.javatpoint.com/distance-vector-routing-algorithm)
* [Link State Routing](https://www.javatpoint.com/link-state-routing-algorithm)
* **Transport Layer**
* [Transport Layer](https://www.javatpoint.com/computer-network-transport-layer)
* [Transport Layer Protocols](https://www.javatpoint.com/computer-network-transport-layer-protocols)(TCP/UDP)
* **Application Layer**
* [Application Layer](https://www.javatpoint.com/computer-network-application-layer)
* [Client & Server Model](https://www.javatpoint.com/computer-network-client-and-server-model)
* **Application Protocols**
* [DNS](https://www.javatpoint.com/computer-network-dns)
* [FTP](https://www.javatpoint.com/computer-network-ftp)
* [SMTP](https://www.javatpoint.com/simple-mail-transfer-protocol)
* POP3
* [SNMP](https://www.javatpoint.com/simple-network-management-protocol)
* [HTTP](https://www.javatpoint.com/computer-network-http)
* **Network Security**
* [Security](https://www.javatpoint.com/computer-network-security)
* [Privacy](https://www.javatpoint.com/computer-network-privacy)
* [Digital Signature](https://www.javatpoint.com/computer-network-digital-signature)
* Cryptography
* **Practical Session**
* Network Cabling: Types of Cables and Cable-connectors; Practically implement the cross-wired cable and straight through cable. Configure a LAN under Windows operating system
* Network Configuration: Establishing Computer Network under Windows OS; Sharing data among connected devices; Study of basic network command and Network configuration commands; Troubleshooting a network
* Introduction to Packet Tracer

**Books Recommended:**

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| 1. | Data Communications & Networking– Behrouz A Forouzan |
| 2. | Data and Computer Communication – William Stallings |
| 3. | Computer Networking- A top down Approach – Kurose and Ross |