

**Department of Computer Science & Engineering**  
**Cisco Networking Lab**

**Major Equipments available in the Lab**

S. No.	Hardware	Specification	Quantity
1	Desktops	Core i3 Processor, 500 GB HDD, 2GB DDR3 RAM	30 Nos.
2	Routers	Cisco 1900 Series	3 Nos.
3	Switches	Cisco C 2960 Series Catalyst Switch	3 Nos.
<b>Software</b>			
C / C++ / Java / Python / Equivalent Compiler , Network simulator like NS2/Glomosim/OPNET/ Packet Tracer / Equivalent, MATLAB SOFTWARE (Few experiments can be practiced with MATLAB), Standard LAN Trainer Kits			

**Courses Offered**

S.No.	ODD Semester	Class	No. of Sessions	EVEN Semester	Class	No. of Sessions
1	Networks Laboratory	V Sem CSE	4	COE		
2	Communication Network laboratory	V Sem ECE	4			
Percentage of Lab Utilization : 80%				Percentage of Lab Utilization : 75%		

EC8563

COMMUNICATION NETWORK  
LABORATORY

V Sem ECE

**Objectives:**

- Learn to communicate between two desktop computers.
- Learn to implement the different protocols.
- Be familiar with IP Configuration.
- Be familiar with the various routing algorithms.
- Be familiar with simulation tools.

**Outcomes:**

- Communicate between two desktop computers.
- Implement the different protocols.
- Program using sockets.
- Implement and compare the various routing algorithms.
- Use the simulation tool.

**List of Experiments**

01. Implementation of error detection / error correction techniques.
02. Implementation of stop and wait protocol and sliding window.
03. Implementation and study of goback-n and selective repeat protocols.
04. Implementation of high level data link control.
05. Implementation of IP commands such as ping, traceroute, nslookup.
06. Implementation of IP address configuration.
07. To create scenario and study the performance of network with CSMA/CA protocol and compare with CSMA/CD protocols.
08. Network Topology - Star, Bus, Ring.
09. Implementation of distance vector routing algorithm.
10. Implementation of Link state routing algorithm.
11. Study of Network simulator (NS) and simulation of Congestion Control Algorithms using NS.
12. Implementation of encryption and decryption algorithms using any programming language.

CS 8381

NETWORKS LABORATORY

V Sem CSE

**Objectives:**

- To learn and use network commands
- To learn socket programming.
- To implement and analyze various network protocols.
- To learn and use simulation tools.
- To use simulation tools to analyze the performance of various network protocols.

**Outcomes:**

- Communicate between two desktop computers.
- Implement the different protocols.
- Program using sockets.
- Implement and compare the various routing algorithms.
- Use the simulation tool.

**List of Experiments**

01. Learn to use commands like tcpdump, netstat, ifconfig, nslookup and traceroute. Capture ping and traceroute PDUs using a network protocol analyzer and examine.
02. Write a HTTP web client program to download a web page using TCP sockets.
03. Applications using TCP sockets like Echo client and echo server, Chat File Transfer.
04. Simulation of DNS using UDP sockets.
05. Write a code simulating ARP / RARP protocols.
06. Study of network simulator (NS) and simulation of congestion control algorithms using NS.
07. Study of TCP/UDP performance using simulation tool.
08. Simulation of distance vector/ link state routing algorithm.
09. Performance evaluation of routing protocols using simulation tool.
10. Simulation of error correction code (like CRC).