

Course Outline

Semester	Fall 2022	
Course Code	CL-3001	
Course Title	Computer Networks Lab	
Credit Hour	1	
Assessments	Lab Work	40
	Assignment	10
	Quiz	10
	Final Exam	40
Lab Instructor	Hurmat Hidayat	

Topics to be Covered	
Lab No.	Topics
Lab 01 – 3hr	<ul style="list-style-type: none"> • Introduction to Networking and IP Addressing • TCP/IP Configuration and Network Information Retrieval • Network Adapter Configuration and IP Address Management
Lab 02– 3hr	<ul style="list-style-type: none"> • Introduction to Transmission Media • Wired (guided) • Wireless (Unguided) • Straight-Through Ethernet network cable. • Cross-Over Ethernet network cable • Introduction to Network Devices • CISCO Packet Tracer
Lab 03 – 3hr	<ul style="list-style-type: none"> • Introduction to Network Devices • Hub • Switch • Router • Simulation of Hub, Switch and Router
Lab 04 – 3hr	<ul style="list-style-type: none"> • Introduction to IP Address and its type • Ipv4 classes • Ipv4 classes range, subnet mask, host and network portion. • Simulation of different topologies in packet tracer for better understanding of IP address in network devices. • Static Routing • Assignment 01 : Step By Step Router Configuration
Lab 05 – 3hr	<ul style="list-style-type: none"> • Protocols of Application Layer • DNS server configuration in Packet Tracer

	Sessional Exam
Lab 06 – 3hr	<ul style="list-style-type: none"> • Configuring DHCP server • IP Helper Address • Assignment 02 : Sharing Files between two computers
Lab 07 – 3hr	<ul style="list-style-type: none"> • Email Protocols • Configuring SMTP and POP3 on generic server. • Configuring FTP Server
Lab 08 – 3hr	<ul style="list-style-type: none"> • Introduction to Modem, Router, Wireless Access Point, Wireless Router • WLAN Configuration • Wireless Router configuration
Lab 09 – 3hr	<ul style="list-style-type: none"> • Introduction to Wireshark • OSI Network Layer Analysis via Wireshark • HTTP analysis using Wireshark
Lab 10 – 3hr	<ul style="list-style-type: none"> • Difference between TCP header and UDP header. • TCP Three Way Handshake • TCP Header in Wireshark • UDP header in Wireshark
Lab 11 – 3hrs, Lab 12 – 3hrs	<ul style="list-style-type: none"> • Understand IP Address, Network Address, Broadcast and Subnet Mask • Review IP Address Classes • Introduction to Subnetting • Class C Subnetting • Practical Implementation of Subnetting in Packet Tracer
	Sessional Exam
Lab 13 – 3hrs	<ul style="list-style-type: none"> • Network Address Translation

	<ul style="list-style-type: none"> • Types of Network Address Translation • Configure Static NAT in Cisco Router • Configure Dynamic NAT in Cisco Router
Lab 14 – 3hrs	<ul style="list-style-type: none"> • Understanding of Socket, Ports, Stream Socket and Datagram Socket • Understanding of client – server model for socket programming. • Practical example of Socket in Python
Lab 15 – 3hrs	<ul style="list-style-type: none"> • Final Lab Exam