

**OAKTON COMMUNITY COLLEGE
GENERIC COURSE SYLLABUS**

I.	<u>COURSE PREFIX</u>	<u>COURSE NUMBER</u>	<u>COURSE NAME</u>	<u>CREDIT</u>	<u>LECTURE</u>	<u>LAB</u>
	CNS	195	TCP/IP Packet Analysis (Formerly LAN 165)	3	3	1

II. PREREQUISITE:

CNS 105 (formerly LAN 105) or consent of instructor, coordinator or department chair.

III. COURSE (CATALOG) DESCRIPTION:

This course covers creating, administering and maintaining an information system with TCP/IP protocol (Transmission Control Protocol/Internet Protocol) and utilities on computer networks, which is the basic provision of Internet services.

IV. LEARNING OBJECTIVES:

Upon completion of this course the student will learn the fundamentals of TCP/IP and have a conceptual understanding of TCP/IP. They will be able to implement, administer and troubleshoot information systems that use TCP/IP.

V. ACADEMIC INTEGRITY:

Students and employees at Oakton Community College are required to demonstrate academic integrity and follow Oakton's Code of Academic Conduct. This code prohibits:

- cheating
- plagiarism (turning in work not written by you, or lacking proper citation)
- falsification and fabrication (lying or distorting the truth)
- helping others to cheat
- unauthorized changes on official documents
- pretending to be someone else or having someone else pretend to be you
- making or accepting bribes, special favors, or threats, and
- any other behavior that violates academic integrity.

There are serious consequences to violations of the academic integrity policy. Oakton's policies and procedures provide students a fair hearing if a complaint is made against you. If you are found to have violated the policy, the minimum penalty is failure on the assignment and, a disciplinary record will be established and kept on file in the office of the Vice President for Student Affairs for a period of 3 years.

Details of the Code of Academic Conduct can be found in the Student Handbook.

VI. OUTLINE OF TOPICS:

1. What is TCP/IP and what are its advantages on computer networks.
2. Installation and configuration of TCP/IP.
3. Testing of TCP/IP packet Internet Groper and IP CONFIG
4. Identification of network ID and host ID
5. Explanation of IP Addressing; Classful Addressing, Device Addressing, Unicast, multicast and broadcast
6. Future direction of IP addressing
7. Explanation of subnet mask and subnetting
8. Explanation of supernetting and IP routing
9. Configuration of computer to function as a dynamic IP router
10. Implementation of TRACERT Utility to find problems
11. Installation and configuration of DHCP database
12. Description of services provided by NetBIOS over TCP/IP
13. Explanation of HOSTS file solving a host name to an IP address on local and remote networks correctly
14. Examination of WINS server and database
15. Description, integration and troubleshooting DNS
16. Utilization of TCP/IP utilities
17. Installation and configuration of FTP Server
18. Installation and configuration of TCP/IP Network Printing Service,
19. Explanation of Simple Network Printing Support and Virtual Private Networking (VPN)
20. Definition of Management Information Base
21. Installation and configuration of SNMP service
22. Utilization of computer networks and TCP/IP utilities
23. Installation and configuration of Private Networks, RFC1918, Network Addressing, Intranet Address Planning, Classless Addressing (CIDR) and NAT, Proxy Servers and Firewalls
24. Explanation of Address Resolution Protocol and its responsibility in an internetworking

VII. METHODS OF INSTRUCTION:

The course will include lecture and lab.

VIII. COURSE PRACTICES REQUIRED:

Read course materials.

Attend and participate in class lecture and lab.

Complete required assignments, exercises, quizzes, and exams.

IX. INSTRUCTIONAL MATERIALS:

Text: [Microsoft® Windows® 2000 TCP/IP Protocols and Services Technical Reference](#) Written by Thomas Lee and Joseph Davies published by MS Press

X. METHODS OF EVALUATING STUDENT PROGRESS:

To be determined by the specific instructor.

XI. OTHER COURSE INFORMATION:

If you have a documented learning, psychological, or physical disability you may be entitled to reasonable academic accommodations or services. To request accommodations or services, contact the ASSIST office in the Learning Center. All students are expected to fulfill essential course requirements. The College will not waive any essential skill or requirement of a course or degree program.