

CSET 2200 PC AND INDUSTRIAL NETWORKS

Semester: Summer 2017.

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Office Hours: 1:00-2:00 PM, Mondays and Wednesdays, and by appointment.

Class Location: NE 1022. TR 9:30 AM - 11:40 AM.

Textbook: *Computer Networking: A Top-Down Approach*, Seventh Edition, Kurose & Ross, Pearson Prentice Hall. ISBN - 13: 978-0-13-285620-1; ISBN - 10: 0-13-285620-4.

Course Description: This course introduces students to computer networks and the internet. The course covers the internet model (application, transport, network, link, and physical layers). Students will design Local Area Networks (LANs) and troubleshoot networks to identify and correct network malfunctions.

Student will learn basic Unix commands, IP addressing, subnetting, and supernetting. Students will utilize applications such as Cygwin, WireShark, and Packet tracer.

Course Objectives: By the end of this course, students will be able to:

- Use Cisco packet tracer to plan and deploy local area networks
- Subnet a local area network
- Supernet a local area network
- Work with the Basic Internetworking concepts: Understand and analyze the functions of the Internet protocol suite TCP/IP, debug transport level services, and basic understanding of application services: E-mail, FTP, Rlogin etc.
- Gain an understanding and hands on experience with the network analytical tool Wireshark, troubleshoot local and wide area connectivity problems and diagnose packets, frames and segments traversing a network.
- Identify and correct connection problems in a local area network
- Determine the appropriate routing protocol to use in a local area network

Student Outcomes

- Outcome b - An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution
- Outcome i - An ability to select and apply current techniques, skills, and tools necessary for computing practice

- Outcome j - An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes

7. Brief list of topics to be covered

- Networks and Inter-networks
- The internet Model
- Physical Layer
- Data Link Layer: ARP, Bridge, CSMA/CD, Virtual LAN
- Transport Layer and Session Layer: TCP , UDP
- Presentation and Application Layer
- Network Layer: IP, ICMP, Traceroute
- IP Addressing and Sub-netting: IPv4, DHCP,IPv6
- Basic Router Operations and Configuration

Course Format: The course will be conducted in class. The class is expected to be interactive. A major component of the class will involve using Cisco packet tracer to design networks. Networking problems will be assigned periodically in the form of homework and labs. In addition, quizzes, 2 midterm exams, and a group project will form part of the course. Quizzes will be closed-notes, closed-books. Midterm exams will be open-notes, open-books.

The group project will involve designing a local area network. Each group will be comprised of a maximum of 3 members. The instructor will assign group projects around the middle of the semester. A complete group project will include: a) presentation in class, b) a running network that solves the problem given, c) a detailed technical report, and d) a peer-evaluation of each group member.

Late submission of homework or group project will not be accepted. There will be no make-up quiz or midterm exam unless there is documented proof of a medical emergency, jury duty, death of an immediate family member or deployment for military duty.

Grading: Grades will be distributed as follows:

- Class Participation: 5 %
- Quizzes: 15 %
- Midterm I: 15%
- Midterm II: 15%
- Homework: 15%
- Labs: 15%
- Group Project: 20%

Letter Grade Distribution:

90% - 100%	A
87% - 89%	A-
84% - 86%	B+
80% - 83%	B
77% - 79%	B-
74% - 76%	C+
70% - 73%	C
67% - 69%	C-
60% - 66%	D
0% - 59%	F

Academic Integrity: All students are expected to abide by The University of Toledo Policy Statement on Academic Dishonesty. Any attempt to duplicate or otherwise pass off another current or former classmate's lab assignments, or copy a classmate's quiz, midterm, finals, or pass off the work of someone else as your own will result in the following penalties: 1) on a first offence a zero in the assignment, 2) on a successive offense, a failure in the class. Either offense will result in a letter of academic dishonesty being placed in your student file. The penalty for allowing your work to be copied is the same as if you did the copying!

Academic Accommodation: The University of Toledo is committed to providing equal access to education for all students. If you have a documented disability or believe you have a disability and would like accommodation, contact the office of Student Disability Services at 419.530.4981.