CSET 4750 COMPUTER NETWORKS AND DATA COMMUNICATIONS

Instructor: Jared Oluoch, Ph.D., Office NE 1630, Phone: 419-530-3272, Email:jared.oluoch@utoledo.edu

Office Hours: 1:00-3:00 PM, Tuesdays and Thursdays, and by appointment.

Class Location: NE 2320, MW 9:30 AM - 10:45 AM; LAB 10:46 AM - 11:36 AM.

TA: Jizhon Tong; Email: jtong@rockets.utoledo.edu.

Textbook: *Internetworking with TCP/IP Volume 1: Principles, Protocols, and Architecture*, Fifth Edition, Douglas Comer, Pearson Prentice Hall.

Course Description: This course covers the principles, protocols, and architectures that make network communication possible. The course aims to provide a deeper understanding of network design concepts, routing protocols, data transmissions, switching, and the domain name system.

Course Objectives: Upon completion of the course, students will be able to:

- Understand and apply the protocols that enable distributed computer applications
- Understand the concepts of congestion control and flow control
- Understand various routing protocols
- Gain a hands-on understanding of CISCO routers and switches
- Implement IOS configurations
- Design simple networks
- Understand and apply the concepts of IP address sub-netting
- Diagnose packets, frames, and segments across a network
- Troubleshoot network problems and connectivity issues

Grading: Grades will be distributed as follows:

- Labs: 30 %
- Midterm: 30%
- Attendance: 5%
- Final Exam: 35%

Letter Grade Distribution:

90% - 100%	A
80% - 89%	B
70% - 79%	C
60% - 69%	D
0% - 59%	F

Academic Honesty: All students are expected to abide by The University of Toledo Policy Statement on Academic Dishonesty.

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, speak with me after class and contact the office of Student Disability Services at 419.530.4981. Your information will be kept confidential.

Course Outline:

Week 1 ..... Networks and Inter-networks
Week 2 ..... The OSI Model
Week 3 ..... Physical Layer
Week 4 ..... Data Link Layer
Week 5 ..... Transport Layer & Session Layer
Week 6 ..... Presentation Layer & Application Layer
Week 7 ..... IP Addressing & Sub-netting/Super-netting
Midterm Exam
Week 8 ..... DNS, DHCP, VLAN, IPv6
Week 9 ..... Wide Area Network Design
Week 10 ..... Data Path Determination
Week 11 ..... Basic Router Operations & Configuration
Week 12 ..... IP Routing: RIP, OSPF
Week 13 ..... Network Security: NAT, Access Control List
Week 14 ..... Proxy Servers, FirewallS, VPN
Week 15 ..... Wireless: LAN and WAN Applications
Final Exam

Lab homeworks will be assigned as we progress through the course.

Important Dates:

First Day of Class ..... Monday, August 24
Labor Day Holiday ..... Monday, September 7
Fall Break ..... Monday & Tuesday, October 5 & 6
Thanksgiving Holiday ... Wednesday through Friday, November 25-27