CS530: Computer Network Lab
Spring 2010

Meets:

Time: W 9:00am – 11:50am
Location: EMS 962

Instructor:

Rafat Elsharef
Email: elsharef@uwm.edu
Office: EMS 962

Office Hours: TBA

Required Texts:

- **Book:** Mastering Networks An Internet Lab Manual
  Authors: Jorg liebeherr and Magda El Zarki
  Publisher: Addison Wesley
  ISBN: 0-201-78134-4

Other reference materials:

- **OPNET www.opnet.com**
- **http://www.opnet.com/university_program/index.html**
- Additional material will be mentioned in class

Grading Policy for Undergraduate:

- Pre-Labs 10%
- OPNET Network Simulation 10%
- Labs (In-Class) 40%
- Mid-term Exam: 15%
- Final Exam: 15%
- Final Project 10%

Grading Policy for Graduate:

- Pre-Labs 10%
- OPNET Network Simulation 10%
- Labs (In-Class) 40%
- Mid-term Exam: 15%
- Final Exam: 15%
- Final Project(Extra Work) 10%

At the end of the course, the numeric grade will be converted into a letter grade according to the following scale:

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
Minimum Score	92	90	87	82	80	77	72	70	67	62	60	0

Prerequisite:

CS 520

Course Description:

This course teaches networking skills and provides students with hands-on experience working with networking concepts. A Laboratory Approach drives home the fundamentals of networks by providing real experience and using real equipment. Ten labs, each covering a specific aspect of networking, allow students to put the details of computer networking into practice, thereby giving them a solid understanding of, and appreciation for, the discipline.

Features

- Lab projects provide a sense of network application in the real-world.
- Discusses the traffic analysis tolls tcpdump and ethereal, which are essential for studying network protocols.
- Provides an overview of basic Linux commands.
- Covers completely the Internet Operating System (IOS) and Cisco routers.

Labs:

Lab1 Introduction to the Internet Lab
Lab2 Single Segment IP Networks
Lab3 Static Routing
Lab4 Dynamic Routing Protocols (RIP, OSPF and BGP)
Lab5 LAN Switching (VLAN)
Lab6 Transport Protocols (UDP and TCP)
Lab7 NAT and DHCP
Lab8 Wireless Network
Lab9 SNMP
Lab10 IP Multicast
Lab11 VoIP

- All Labs should be typed.
- Any late Labs without permission will not be graded.
- Graduate Students will be assigned extra work for final final project.