



CIS 4490 COURSE SYLLABUS
NETWORKING II, 3 CREDITS
TT 10:00-11:15 am, Elliott Hall Room 206/216
SPRING, 2008

Instructor Information

Instructor: Dr. Dan McKee
Office: Elliott 209-B
Phone: 570-662-4472
Office Hours: Tu 12:30-1:00pm; Th 9:00-10:00am, 11:15am-1:35pm; F 12:00-1:00pm;
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General Course Information

Description

This is a second course in computer networking and network applications. Building on the foundation of Networking I, this course includes more detailed/advanced discussions of TCP/IP, along with network configuration, management, security, encryption and VPNs.

This course is much more “hands-on” than Networking I—approximately 1/3 of our class time will be spent experimenting in the advanced computing lab. Some of the lab assignments may be time-consuming. Please allocate plenty of time in your schedule for this course.

Prerequisites

CIS 3390 (Networking I)

Textbooks

Kurose, James F. and Keith W. Ross. *Computer Networking: A Top-Down Approach Featuring the Internet, 4th Edition*. Pearson Education/Addison Wesley, 2008. ISBN 0-321-49770-8. (Required)
Stallings, William. *Network Security Essentials, 3rd Edition*. Pearson Education/Prentice Hall, 2007. ISBN 0-13-238033-1. (Required)

Additional library reserve readings will be listed in Blackboard as needed.

Software

Required software will be installed on the computers in the advanced computing lab in Elliott 216. If you wish to install this software on your own PC, links will be provided in Blackboard.

Web Resources

blackboard.mansfield.edu for the Blackboard class site
www.aw-bc.com/kurose_ross for companion resources that accompany the main textbook
williamstallings.com/NetSec/NetSec3e.html for companion resources that accompany the security text
Any additional web resources will be posted on blackboard.

Course Policies

Grading

Work that only meets the stated requirements will earn a grade of C. Higher grades may be given for work that goes beyond the requirements or that demonstrates an advanced understanding of the material.

A >= 90%
B >= 80%
C >= 70%
D >= 60%
F < 60%

The instructor may further differentiate grades using + or – as outlined in the catalog.

	% of Final Grade
Weekly Journals	10
Lab participation/reports	20
Reading/Report Assignments (4)	20
Midterm Exam	20
Final Exam	30
Attendance and Participation	+/-

Homework assignments are listed in the course timeline. Homework will not be collected/graded on a regular basis. Each class will begin with an opportunity to ask questions about the current homework assignment—it is your responsibility to ask if you are unsure of the solution to a particular problem. Completing the homework will help you prepare for the labs and exams, so it is to your benefit to make sure you understand the material.

Weekly journals are due on Tuesday of each week and should be submitted via Blackboard. Additional details will be given in class. We will break into groups in order to complete the various lab exercises. Most labs will require each group to submit a brief report summarizing the lab results.

Throughout the semester four articles will be assigned for you to read—each of these will require a summary and critique of 2-3 pages.

Attendance and participation will help decide borderline grades. For example, a student with a solid “B” in the course who has an excellent attendance record and active participation in the class may (at my discretion) receive a “B+.”

Late Work

Assignments are due at the beginning of class on the due date. Late work will not be accepted. I'll be glad to offer help with assignments, but no help will be given on the due date.

Attendance

Attendance is expected at all classes, and will contribute to your final grade. Please let the instructor know *in advance* if you expect to be absent for any reason. If you must miss a class due to an emergency or documented illness, contact the instructor as soon as possible, but no later than the first class period following the absence. You are responsible for any material covered and assignments due during missed classes.

Academic Integrity

You are expected to do your own work. Cheating, plagiarism, and other forms of academic dishonesty are unacceptable and will be reported according to the procedures defined in the *Password*. If you have questions about what is acceptable and not acceptable, please contact the instructor for clarification.

Exceptionalities

Any students with documented psychological or learning disorders or other significant medical conditions that may affect their learning should work through Mr. William Chabala in our Counseling Center (South Hall 216, Phone: 662-4798; email: wchabala@mnsfld.edu) to provide me with the appropriate letter so that I may serve their particular needs more effectively. If you have an exceptionality that requires class or testing accommodations, Mr. Chabala will work with us to identify and implement appropriate interventions.

Course Outline

Objectives

At the end of this course, students will/will be able to:

- Identify security concerns related to networking and discuss strategies for dealing with them.
- Perform installation, configuration, and troubleshooting of networking equipment.
 - Routers
 - Switches/VLANs
 - Firewalls
- Discuss network management approaches, concerns, and strategies.
- Discuss encryption, VPNs, and the role of data security in organizations.

Timeline

This timeline is subject to change as the course progresses.

Week	Class	Date	Topics	Homework Assignment	Reading Assignment
1	1	1/15	Course Introduction/Review		
	2	1/17	Link Layer: Ethernet		KR: 5.5
2	3	1/24	Link Layer: LAN Switching, Cisco CLI	Journal Due KR: p. 503, P9	KR: 5.6
3	4	1/29	<i>Switching Lab</i>	Journal Due	
	5	1/31	<i>Switching Lab</i>		
4	6	2/5	Routing Review	Journal Due	KR: Ch. 4
	7	2/7	Configuring Cisco Routers	Paper Summary 1 Due	
5	8	2/12	<i>Routing Lab</i>	Journal Due	
	9	2/14	<i>Routing Lab</i>		
6	10	2/19	Security Overview	Journal Due	KR: 8.1 S: Ch. 1
	11	2/21	Symmetric Encryption	S: p. 25, Q1.2-5	KR: 8.2.1 S: Ch. 2
7	12	2/26	Public-Key Encryption	Journal Due S: p. 56, Q2.2-7 Paper Summary 2 Due	KR: 8.2.2 S: Ch 3
	13	2/28	<i>Cryptography Lab</i>	S: p. 88, Q3.4, 6-11	
8	14	3/4	Authentication/Message Integrity	Journal Due	KR: 8.3, 8.4 S: Ch. 4
9	15	3/18	IP Security	Journal Due S: p. 125, Q4.2, 9	KR: 8.8.3 S: Ch. 6
	16	3/20	Configuring IPsec on Cisco devices	S: p. 211, Q6.2-6, 8 Paper Summary 3 Due	
10	17	3/25	<i>IPSec Lab</i>	Journal Due	
	18	3/27	<i>IPSec Lab</i>		
11	19	4/1	E-Mail Revisited: MIME, S/MIME	Journal Due	KR: 8.8.1 S: 5.2
	20	4/3	PGP*	Paper Summary 4 Due	S: 5.1
12	21	4/8	Web Security: SSL	Journal Due S: p. 168, Q5.1-3, 8-10	KR: 8.8.2 S: Ch. 7
	22	4/10	Network Management:	S: p. 255, Q7.1-7	KR: Ch. 9

Week	Class	Date	Topics	Homework Assignment	Reading Assignment
			SNMP/MIBs		S: Ch. 8
13	23	4/15	<i>Network Management Lab</i>	Journal Due S: p. 293, Q8.2-4, 6	
	24	4/17	Viruses and Intruders, DDoS*	Paper Summary 5 Due	KR: 8.7 S: Ch. 9, 10
14	25	4/22	Firewalls	Journal Due S: p. 326, Q9.1-4 p. 354, Q10.2, 7	KR: 8.6 S: Ch. 11
	26	4/24	Configuring Cisco Firewalls	S: p. 379, Q11.1, 3-7	
15	27	4/29	<i>Firewall Lab</i>	Journal Due	
	28	5/1	<i>Firewall Lab</i>		
		5/8 (Th), 8:30 am	Final Exam		

*if time allows