

COURSE MASTER SYLLABUS

Date: December 10, 2008

Course Prefix and Number: MIS 577

Course Title: Network Defense & Operating Systems

Instructor(s): Liu

Typical Textbook(s): Guide to Network Defense & Countermeasures and the Guide to Operating Systems Security

Catalog Description: Covers such essential practices as developing a security policy and then implementing that policy by performing Network Address Translation, setting up packet filtering, and installing IDS, firewalls, and virtual private networks. Provides the student with a solid foundation in network security fundamentals, but assumes familiarity with the Internet and basic networking concepts. Lab fee \$90.

Prerequisites: MIS 501, MIS 560

Course Objectives: Be able to understand and implement common network defensive measures. Be able to effectively communicate the fundamental principles underlying network and operating systems security. Be able to make intelligent, reasonable, and thoughtful analysis regarding the ability of hardware and software to alert users to suspicious connection attempts. Be able to conduct effective risk analysis and develop an appropriate security policy.

Subject Matter: 14 sessions at 160 minutes each plus a final exam.

Topic Number	Topic Title	Number of Sessions on Topic
1.	Foundations of Network Security	1
2.	Designing a Network Defense	1
3.	Risk Analysis and Security Policy Design	1
4.	Network Traffic Signatures	1
5.	Midterm 1	1
6.	Encryption	1
7.	E-mail Security	1
8.	Microsoft Operating System Vulnerabilities	1
9.	Port-scanning and Foot-printing	1
10.	Midterm 2	1
11.	Virtual Private Networks (VPN)	1
12.	Intrusion Detection: Incident Response	1
13.	Choosing and Designing Firewalls	1
14.	Research Paper Presentation	1
15.	Final	1

Active Student

Involvement:

Please describe how the course actively involves or engages students in the learning process; for example, projects, papers, assignments, case discussions, use of computer lab, presentations, etc.

This course demands extensive use of computer lab: hands-on exercises and hands-on case studies immediately follow the instructor's lecture in each class session. Through the semester, students are expected to complete three assignments, applying the skills and the knowledge learned from the class to resolve real-life problems. Students are also required to write a research paper and present their research results at the end of the semester.

Describe how the course addresses the following topics or state that it does not:

- **Global Business Environment:** Network security is by nature a global issue since networks cross organizational and national boundaries and security risks can be located anywhere there is network access.
- **Ethics:** This is an important topic in any security course because security is not only a technology issue but also a people and procedural issue.