

Introduction to Cyber Security Lab

Susan Hinrichs
Spring 2006

Administrivia

- Meet Tuesdays/Thursdays 9:30-10:45am
1111 SC
- Security lab in 222 SC
- Office hours in lab, time TBA
 - shinrich@cs.uiuc.edu
 - Office 4224 SC
- Newsgroup cs.class.cs498sh
- Web site
<http://www.cs.uiuc.edu/class/cs498sh>

Class Structure

- Complements introductory security courses like Information Assurance
 - Teach computer and network security mechanisms used in the field
 - Teach design techniques
 - A sampling of security technologies
- Class meetings
 - Approximately half in 1111 providing background material or guest lectures
 - Approximately half in lab

Class Non-Goal

- Class will **not** make you expert in any particular security technology
- If that is your goal, better to take a specific technology training course or self study

Topics

- Secure Programming
 - Least-privilege programming and impersonation
 - Input cleanliness
 - Worm anatomy
- OS security
 - Windows ACLs and security policies
 - Vista security additions
 - SE Linux domain type enforcement policies
 - Mandatory access controls in SE Linux and perhaps other OS's
 - User identity
- Database Security

More Topics

- Network Security
 - Firewall configuration
 - IPSec
 - IPv6
 - Access control servers
 - Network intrusion detection and monitoring
 - Honey pots
 - Wireless security
 - Network scanning
- Defensive system design
 - Security architectures
 - Penetration testing

Reading Materials

- Required book from Information Assurance
 - *Computer Security: Art and Science*, Bishop
- Supplemented with many papers and manuals

Course Evaluation

- Lab exercises – 50%
- 2-3 Papers at the end of sections – 25%
- Final design project – 25%
- Folks taking for graduate credit will have extra requirements for Lab exercises and papers

Questions for the class

- Have you taken an introductory security class?
- Are you familiar with Windows and/or Linux?
- Are you comfortable with C, C++, and/or Java?
- Are you familiar with IP networking?
- What do you hope to get out of this class?