

CSC 5290 - Cyber Security Practice

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Course Description

This course will explore board security topics in the areas of network and operating systems. In particular, this course focus on providing hands-on experience leveraging various security tools, aiming to help students understand real-world security threats. It will cover both offensive and defense methods under a laboratory environment. Students are expected to finish lab assignments using real-world malware, exploits, and defense tools.

Course Objectives

This course offers an in-depth experience of security threats and defenses. Upon successful completion, you will:

- Understand security vulnerabilities, exploits, and defenses
- Experience security-related network and system experiments through hands-on labs.
- Learn real-world security issues and their solutions

Labs

You will need a computer to complete Labs. Recommended OS: Linux, macOS, or MS Windows.

Class Schedule

	Topic
Week 1	Course Overview Packet Sniffing and Wireshark
Week 2	DDoS Attack 1
Week 3	DDoS Attack 2
Week 4	Malware
Week 5	Firewall
Week 6	DNS and Attacks
Week 7	Secret-Key Encryption
Week 8	Public Key Cryptography
Week 9	Transport Layer Security
Week 10	Public Key Infrastructure

Week 11	Blockchain - basic
Week 12	Blockchain - security
Week 13	The Heartbleed Bug and Attack
Week 14	Buffer Overflow Attack
Week 15	Meltdown and Spectre Attack

Sent email to r.jang@wayne.edu if you have any questions.