



ISM 326: Ethical Hacking

Fall 2021

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CATALOG DESCRIPTION:

Ethical hacking is presented as a process of intentionally attempting to hack a computer system to understand potential vulnerabilities that a malicious hacker could exploit and find ways to mitigate them. **Prerequisites: ISM 280 and ISM 201**

COURSE OVERVIEW

This course prepares you to work as a computer security professional by teaching the fundamentals of ethical hacking. It prepares you to pass the EC-Council Certified Ethical Hacker (CEH) certification exam required by all professional ethical hackers and penetration testers. Ethical hackers are highly in demand by organizations, primarily since hacking has grown in sophistication and complexity. Broadly speaking, as an ethical hacker, you are able to identify weaknesses in organizational information system environments before the attackers do it for you. This does not mean that your job as an ethical hacker is to just go in and break everything you can find, leaving it for someone else to figure out. Ethics is an essential aspect of ethical hacking. Ultimately, it is your job as an ethical hacker to provide value by developing to a better overall security posture. Anyone can break something. It takes knowledge and skill to understand what is being broken and how to fix it so it cannot be broken again. That is the challenge you will undertake this semester.

STUDENT LEARNING OUTCOMES (SLOs):

Upon successful completion of this course, you should be able to define, describe, identify, and protect systems from threats involving:

- Footprints and scanning
- Enumeration and system hacking
- Malware
- Sniffers, session hijacking, and denial of service
- Web server hacking, web application attacks, and database attacks
- Wireless security attacks
- IDS, firewalls, and honeypots
- Physical security and social engineering
- Cryptographic attacks and defenses
- Cloud computing and botnets

REQUIRED COURSE MATERIALS:

Required Textbook: *CEH v10 Certified Ethical Hacker Exam Study Guide*, Ric Messier, ISBN: 978-1-119-53326-9. You need to purchase and e-version of the book and the learning environment that includes all the quizzes, labs and other learning material from:

https://www.ucertify.com/cart/?order=01Xs1&ref=&add_order=1

METHOD OF INSTRUCTION:

This is an on-line class. The course’s pedagogical approach includes on-line lectures, discussions, demonstrations, and hands-on hacking labs. Your participation in these activities are mandatory and required. However, given the nature of this course that teaches you how to hack into computer systems, we will have to use a safe and highly controlled environment to learn and explore some of the most widely used hacking techniques. This sandboxing environment is provided by uCertify.

GRADING SYSTEM:

Graded Element	Maximum Points
Hacking Labs	380 (38%)
Quizzes	120 (12%)
Final Project	200 (20%)
Final Exam	250 (25%)
Class participation	50 (5%)
Total	1000

Your letter grade will be based on the following distribution: Grades are truncated, not rounded.

Percentage	Grade	Percentage	Grade	Percentage	Grade	Percentage	Grade
93-100	A	83-87.9	B	73-77.9	C	63-67.9	D
90-92.9	A-	80-82.9	B–	70-72.9	C–	60-62.9	D–
88-89.9	B+	78-79.9	C+	68-69.9	D+	< 60	F

COURSE DELIVERABLES:

Course deliverables include: EOC quizzes, hacking labs, a final project, and a final exam. Details about Details of all course deliverables and due dates are found on Canvas. Any deliverable submitted after the due date may not be accepted unless extenuating circumstances can be documented. In such cases, they are subject to a grading penalty of a minimum of 20% reduction for each day late. More will be discussed during the semester.

POLICY ON SERVER UNAVAILABILITY OR OTHER TECHNICAL DIFFICULTIES:

The university is committed to providing a reliable online course system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will extend the time windows and provide

ELECTRONIC MAIL AND ACCOUNTS:

You should check your UNCG email and Canvas Course link regularly as I may send email updates or add new info on Canvas on an ongoing basis. You will be responsible for any information or announcements contained in the email messages or updates on Canvas.

ACADEMIC INTEGRITY, ETHICAL ISSUES AND THE HONOR CODE POLICIES:

Students are responsible for becoming familiar with the UNCG’s Academic Integrity Policies that are strictly enforced in this class. You may UNCG’s Academic Integrity Policies at this web site at <http://academicintegrity.uncg.edu>.

Course Schedule*

Week	Subject	Readings
Week 1	Course Introduction Introduction to Ethical Hacking	Chapter 1
Week 2	Networking Foundations	Chapter 2
Week 3	Security Foundations	Chapter 3
Week 4	Footprinting & Reconnaissance	Chapter 4
Week 5	Scanning Networks	Chapter 5
Week 6	Enumeration	Chapter 6
Week 7	System Hacking	Chapter 7
Week 8	Malware	Chapter 8
Week 9	Sniffing	Chapter 9
Week 10	Social Engineering	Chapter 10
Week 11	Wireless Security	Chapter 11
Week 12	Attack and Defense	Chapter 12
Week 13	Cryptography	Chapter 13
Week 14	System Engineering	Chapter 14
Final Exam		

**Please note that this is a tentative schedule and changes to this outline may be required.*

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