GUST | Computer Science Department

CSC 478 Ethical Hacking

(3 contact hours – 0 lab hour - 3 credits)

Syllabus

General Information

Instructor	
Office	
Phone / Email	
Class Time / Location	
Office Hours	
Teaching Assistant / email	

Course Description

Introduction to a wide range of topics related to ethical hacking and provides an in-depth understanding of how to effectively protect computer networks. The topics cover the tools and methodologies (e.g., Nmap, Burp Suite, Kali and Parrot Linux) used by ethical hackers and thoroughly discuss what and who an ethical hacker is and how important they are in protecting corporate and government data from Cyber-attacks.

Course Prerequisites

- CSC 477

Course Category

Elective

Course Outcomes

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

- demonstrate understanding and knowledge about ethical hacking [SO # 1],
- analyze various types of attacks, attackers, security threats, and vulnerabilities in the computer system [SO # 1],

- evaluate how attackers can use social engineering to access valuable and sensitive information and design security measures to mitigate such attacks [SO # 2],
- explore and adapt to evolving tools, techniques, and ethical challenges in ethical hacking, recognizing the need for continual professional development in cybersecurity [SO # 4 and # 6].

Required Textbook

- CEH v12 Certified Ethical Hacker Study Guide by Ric Messier -Sybex; 1st edition (May 9, 2023) - ISBN: 9781394186921

Supplementary Textbook

- Matthew Hickey and Jennifer Arcuri. Hands on Hacking: Become an Expert at Next Gen Penetration Testing and Purple Teaming, Wiley, 1st edition, 2020. ISBN: 978-1119561453
- Certified Ethical Hacker (CEH) Version 12 eBook w/ iLabs (Volumes 1 - 4) 12th Edition - https://www.vitalsource.com, 2022, Print ISBN: 9798885931014, e ISBN: 9798885931014.

Tentative Schedule

WEEK	TOPIC	MATERIAL (CHAPTERS AND/OR OTHER MATERIAL)
1	Syllabus + Introduction to Ethical Hacking	Module 1
2, 3	Footprinting and Reconnaissance	Module 2
4	Scanning Networks	Module 3
5	Enumeration	Module 4
6	Vulnerability Analysis	Module 5
7, 8	System Hacking	Module 6
9, 10	Malware Threats	Module 7
11, 12	Sniffing	Module 8
13	Social Engineering	Module 9
14, 15	Denial-of-Service	Module 10

Grading Scheme

GRADE CATEGORY	WEIGHT
In-class participation	5%

Assignments	20%
Project	15%
Quizzes	10%
Midterm Exam	20%
Final Exam	30%

Academic Honesty

All work presented and submitted in this class must be your own. Submitting work that is not yours is considered cheating and will be subject to the policies of academic honesty at GUST. This includes using text copied from the Internet or other sources, using work generated by AI tools such as ChatGPT, Google's Bard, Bing AI, etc., using materials prepared by a paid agency or individual, using unauthorized help from anyone other than GUST academic staff and approved tutors, or even re-using your own work from other classes and assignments. Remember, anything more than five consecutive words written by someone else can be considered plagiarism and must put in "quotes", cited in-text, and include an accompanying reference at the end of the paper, as per the course standards. Violating the policy of academic integrity will result in severe consequences, including failing grades, loss of university privileges, and even permanent dismissal.

Commit to Integrity

Academic Dishonesty Policy

1. Academic dishonesty includes such things as cheating, inventing false information or citations, plagiarism and helping someone else commit an act of academic dishonesty. It usually involves an attempt by a student to show possession of a level of knowledge or skill that he/she does not possess.
2. Cheating/plagiarism is absolutely forbidden. Any such misconduct may result in obtaining a zero on the assignment, failure in the course, and/or appropriate referral for disciplinary action.

Inclusion (OSC Accommodation)

I wish to fully include persons with disabilities in this course. Please let me know if you need any special accommodations in the curriculum, instruction, or assessments of this course to enable you to fully participate. I will maintain confidentiality of the information you share with me. If you have a disability that impacts your classroom performance and wish to request an accommodation, contact the One-Stop Student Services Center (OSC) at N3-101. The OSC requires up-to-date documentation regarding your disability to enable them to comply with your request. Admission

of OSC is voluntary and will be handled in a confidential manner. GUST does not discriminate against people with disabilities.