Course Description Form

1. Course Name:
Ethical Hacking and Cyber Security
2. Course Code:
3. Semester / Year:
Second semester/ PhD
4. Description Preparation Date:
1−2−2026
5. Available Attendance Forms:
6. Number of Credit Hours (Total) / Number of Units (Total)
45 h/3 units
7. Course administrator's name (mention all, if more than one name)
Name: Asst. Prof. Dr. Dalal N. Hamood Email: dalal.naeem@nahrainuniv.edu.iq
8. Course Objectives

Course Objectives	The main objective of this course is: - to understand the basics of cybersecurity. - identify types of cyberattacks, -discover security vulnerabilities, -protect systems and networks, and -think like an attacker.

9. Teaching and Learning Strategies	
Strategy	Lectures Homework Problem-based learning Case studies

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week1	3 h		(Networking) 1: TCP/IP .2: Layers in TCP/IP .3: Ports & Sockets	Lecture	Quiz

Week2	3 h		What is Hacking? Types of Hackers Google Dorks as Hacking Tools Footprinting	Lecture	Quiz
Week3	3 h		Phases of Hacking Passive Reconnaissance Ac Reconnaissance	Lecture	Quiz
Week4	3 h		Port Scanning NMAP as Scanning T NMAP Scripting Tool Exploit Searching	Lecture	Quiz
Week5	3 h		Enumeration Types of enumeration Tools of enumeration	Lecture	Quiz
Week6	3 h		Vulnerabilities Assessment Types of vulnerabil Assessment Thread of vulnerabilities	Lecture	Quiz
Week7	3 h		Vulnerabilities assessment Server OS Vulnerabilities assessment Of Embedded System	Lecture	Quiz
Week8	3 h		Exam mid1		
Week9	3 h		Cyber Attacks define Cyber Attacks Types Case study (A Breach-Attack View) System hacking Network hacking	Lecture	Quiz
Week10	3 h		What is Cyber Secur Essential Terminologies, cyber space	Lecture	Quiz
Week11	3 h		Password management Securing your system	Lecture	Quiz
Week12	3 h		Network security Wireless security IDS IPs VPN	Lecture	Quiz
Week13	3 h		Web application security Web server security	Lecture	Quiz
Week14	3 h		Post-Quantum cryptography Lattice based Hash based	Lecture	Quiz
Week15	3 h		Exam mid2		

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, seminar.... etc

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Ethical Hacking 2021 Cyber security Essential 2022

Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	Computer Lab + Java Language