🛡️ Cybersecurity & Ethical Hacking Curriculum

Duration: 8 Weeks
Level: Beginner to Intermediate
Delivery Mode: Instructor-led (Theory + Hands-on Labs)

Week	Module Title	Key Topics Covered	Practical Focus / Learning Outcome
Week 1	Networking & Security Fundamentals	OSI & TCP/IP models, IP addressing & subnetting, Network devices (routers, switches, firewalls), Security concepts (CIA triad, risk, vulnerabilities), Threat actors & attack types	Students understand how networks function and how security weaknesses occur
Week 2	Introduction to Ethical Hacking & Reconnaissance	Ethical hacking methodology, Legal & compliance basics, Footprinting techniques, OSINT, Whois & DNS reconnaissance, Introduction to Kali Linux tools	Students can gather intelligence on a target environment ethically
Week 3	Network Scanning & Enumeration	Scanning concepts, Nmap scanning techniques, Port & service discovery, OS detection, Basic SNMP & SMB enumeration	Students can identify live hosts, services, and potential entry points
Week 4	Vulnerability Assessment & System Exploitation	Vulnerability assessment concepts, Identifying common misconfigurations, Introduction to Metasploit, Privilege escalation basics, Post-exploitation overview	Students perform basic vulnerability analysis and controlled exploitation
Week 5	Malware & Social Engineering	Malware types (trojans, worms, ransomware), Basic malware analysis concepts, Social engineering techniques, Phishing awareness, Security countermeasures	Students understand human-based attacks and malware defense strategies

Week 6	Network Attacks & Defensive Measures	Sniffing concepts, ARP poisoning & MITM basics, DoS/DDoS concepts, IDS/Firewall fundamentals, Attack detection techniques	Students understand offensive techniques and defensive controls
Week 7	Web Application Security	Web architecture basics, Web server attack concepts, SQL Injection (theory & lab), Introduction to XSS, Secure coding principles	Students identify and test common web application vulnerabilities
Week 8	Cryptography & Final Assessment	Encryption fundamentals (symmetric vs asymmetric), Hashing, Public Key Infrastructure (PKI), Secure communication principles, Capstone mini penetration test simulation	Students apply learned skills in a guided security assessment project