CS411: Cyber Vulnerability and Ethical hacking	L	T	P	Web Technology
	3	1	0	

Course Objective: To provide comprehensive knowledge and practical skills in ethical hacking, including methodologies for system, web server, and wireless network penetration testing, and to understand the legal and technical aspects of cybersecurity.

S. No	Course Outcomes (CO)
CO1	Describe the fundamental concepts of ethical hacking, including terminology, types of hacking technologies, and phases of ethical hacking. [Remembering]
CO2	Explain various system hacking techniques, such as password hacking, rootkits, trojans, and denial of service attacks, and understand their impact on system security. [Understanding]
CO3	Apply techniques for hacking web servers, identifying web application vulnerabilities, and exploiting security weaknesses in wireless networks. [Applying]
CO4	Analyze penetration testing methodologies, cryptographic principles, and legal frameworks for ethical hacking and evaluate their effectiveness in maintaining security. [Analyzing]
CO5	Develop and implement penetration testing tools, understand firewall types, and address physical security factors and honeypots to enhance overall cybersecurity measures. [Creating]

S. No	Contents	Contact Hours

UNIT 1	Introduction to Ethical Hacking: Introduction to Ethical Hacking, Ethical Hacking Terminology, Types of Hacking Technologies, Phases of Ethical Hacking, Footprinting, Social Engineering, Scanning and Enumeration	**10**
UNIT 2	System Hacking : Understanding the Password Hacking Techniques, Rootkits, Trojans, Backdoors, Viruses and Worms, Sniffers, Denial of Service, Session Hijacking	**10**
UNIT 3	Web Server Hacking : Hacking Web Servers, Web Application Vulnerabilities, Buffer Overflow, Wireless Hacking, Physical Security	**8**
UNIT 4	Wireless Hacking : WEP, WPA Authentication Mechanism, Wireless Sniffers, Physical Security, Factors Affecting Physical Security, Honeypots, Firewall Types	**10**
UNIT 5	Penetration Testing : Cryptography overview of MD5, SHA, RC4, Penetration Testing Methodologies and Steps, Pen Test Legal Framework, Penetration Testing Tools	**10**
	Total	**48**