

Lab Code	5.ITL502	Lab Name	Cryptography and Network Security Lab
Academic Year	2024-2025	Semester	V
Class	TE	Course In-charge	Dr. Smita Bansod

Laboratory Outcomes (LO)

LO No.	LO Statement (At the end of the course, students will be able to ...)	BL
1	Illustrate symmetric cryptography by implementing classical ciphers.	L1, L2
2	Demonstrate Key management, distribution and user authentication.	L1, L2
3	Explore the different network reconnaissance tools to gather information about networks	L2, L3
4	Use tools like sniffers, port scanners and other related tools for analyzing packets in a network.	L1, L2, L3
5	Use open-source tools to scan the network for vulnerabilities and simulate attacks.	L1, L2, L3
6	Demonstrate the network security system using open source tools.	L1, L2

List of Experiments

Sr. No.	Title	L O	PS O	PI
1	Breaking the Mono-alphabetic Substitution Cipher using Frequency analysis method.	1	1	1.6.1,1.7.15.4.2,5.5.1,5.5.2
2	Encrypt long messages using various modes of operation using AES or DES.	1	1	1.6.1,1.7.15.4.2,5.5.1,5.5.2
3	Cryptographic Hash Functions and Applications (HMAC): to understand the need, design and applications of collision resistant hash functions.	2	1	1.6.1,1.7.15.4.2,5.5.1,5.5.2
4	Study the use of network reconnaissance tools like WHOIS, dig, traceroute, nslookup to gather information about networks and domain registrars.	3	1	1.6.1,1.7.15.4.2,5.5.1,5.5.2
5	Study of packet sniffer tools wireshark: - a. Observe performance in promiscuous as well as non-promiscuous mode. b. Show the packets can be traced based on different filters.	4	1	1.6.1,1.7.1,5.4.2,,5.5.1,,5.5.2, 6.3.1, 6.4.1,
6	Download, install nmap and use it with different options to scan open ports, perform OS fingerprinting, ping scan, tcp port scan, udp port scan.	4	1	1.6.1,1.7.1,5.4.2,,5.5.1,5.5.2, 6.3.1, 6.4.1,
7	Study of malicious software using different tools: a) Use the NESSUS/ISO Kali Linux tool to scan the network for vulnerabilities	5	1	1.6.1,1.7.1,5.4.2,,5.5.1,5.5.2, 6.3.1, 6.4.1,
8	Study of Network Management tools.	6	1	1.6.1,1.7.1,5.4.2,5.5.1,,5.5.2, 6.3.1, 6.4.1,

Dr.Smita B.**Date: 1/7/2024**