

Department of Computer Science & Engineering

National Institute of Technology Srinagar

Course Title	Network Security Lab	Semester	7 th	
Department	Computer Science & Engineering	Course Code	CSL418	
Credits	01	L	T	P
Course Type	Lab	0	0	2

Course Objectives

- To understand principles of web security and to guarantee a secure network by monitoring and analysing the nature of attacks through cyber/computer forensics software/tools
- Exhibit knowledge to secure corrupted systems, protect personal data, and secure computer networks in an Organization.
- To have the ability to compare merits and demerits of different Cryptographic techniques and take decisions while securing a network

Learning Outcomes

At the end of the Lab, students should be able to :

- Analyse and evaluate the cyber security needs of an organization.
- Determine and analyse software vulnerabilities and security solutions to reduce the risk of exploitation.
- Measure the performance and troubleshoot cyber security systems

Course Synopsis

Implementation of Cryptography; Threats and Vulnerabilities; Understand the Tools and Techniques.

Course Outline / Content

Unit	Topics	Week
1.	Setting Up the System for testing purpose: Learning Basic Commands.	1
2.	Software Requirements. Security Attacks : ARP Attacks (ARP Cache Poisoning, ARP Man in the Middle Attack).	2
3.	IP Attacks (IP Fragmentation Attack, IP Teardrop Attack)	2

4.	ICMP Attacks(Ping of Death, Smurf Attack, ICMP Destination Unreachable, ICMP Redirect, ICMP Source Quench)	2
5.	TCP Attacks (SYN Flooding Attack, TCP RST Attack), UDP Attack.	3
6.	Understand the Tools and Techniques: IEXPRESS 2.0, CAY KARAT, Damm Web Application Vulnerabilities (DWAV), WebGoat, ProRat Trojan, Key Logger, Steganographer etc.	3
7.	Nmap Port Scanning: TCP Port Scanning (TCP Connect () Scanning, TCP SYN Scan, TCP FIN Scan, XMAS Scan, TCP NULL Scan)	3
8.	UDP Port Scanning, Performing Stealth Scan of a Selected Computer.	2
Books		
1.	SchneierBruce: Applied Cryptography : Protocols, Algorithms And Source Code In C, Wiley India, 2nd Edition, Reprint - 2013.	