

## 17CS015 CYBER SECURITY

L	T	P	C
3	-	3	5

### Course Description and Objective

This course focuses on cyber threats and cyber security, providing much needed awareness in the times of growing cybercrime. The objective of this course is to bring awareness to the student through simple practical tips and enable the student to understand and avoid becoming victims of cyber crime.

### Course Outcomes

The student will be able to:

- ✓ Have an overview of cyber crime scenario and legal perspective on cyber crime.
- ✓ Understand different types of cyber attacks.
- ✓ Understand about tools and methods used in cyber crime.
- ✓ Understand the need of cyber laws.
- ✓ Understand and know how cyber forensics is used in cyber crime investigations.

### Skills

- ✓ Identify different classification of cyber crimes.
- ✓ Performing cyber forensics.
- ✓ Know about vulnerabilities and scanning them.
- ✓ Usage of firewalls.

### Activities

- ✓ To get information about computer systems on a network and the services running its open ports.
- ✓ Perform port scanning, transferring files, and port listening
- ✓ Sniffing router traffic.
- ✓ Using tools and methods of cyber crime.

### UNIT - I

**Introduction to cybercrime and cyber offences:** Cybercrime definition and origins of the word, Cybercrime and information security, Classifications of cybercrime, Cybercrime and the Indian ITA 2000, A global Perspective on cybercrimes. How criminal plan the attacks, Social Engg, Cyber stalking, Cybercafe and Cybercrimes, Botnets, Attack vector, Cloud computing

### UNIT - II

**Tools and Methods Used in Cybercrime:** Proxy Servers and Anonymizers, Phishing, Password Cracking, Keyloggers and Spywares, Virus and Worms, Steganography, DoS DDoS Attacks, SQL Injection, Buffer Over Flow, Attacks on Wireless Networks, Phishing, Identity Theft (ID Theft)

### UNIT - III

**Cybercrimes and Cyber Security:** The Legal Perspectives, Need of Cyberlaw: The Indian Context, The Indian IT Act, Digital Signature and the Indian IT Act, Amendments to the Indian IT Act, Cybercrime and Punishment, Cyberlaw, Technology and Students: Indian Scenario

## **UNIT - IV**

**Understanding Computer Forensics:** Historical Background of Cyber forensics, Digital Forensics Science, The Need for Computer Forensics, Cyber forensics and Digital Evidence, Forensics Analysis of Email, Digital Forensics Lifecycle, Chain of Custody Concept, Network Forensics, Approaching a Computer Forensics Investigation, Computer Forensics and Steganography, Relevance of the OSI 7 Layer Model to the Computer Forensics and Social Networking Sites: The Security/Privacy Threats, Forensics Auditing, Anti Forensics.

## **UNIT - V**

**Cyber Security:** Organizational Implications, Cost of Cybercrimes and IPR Issues: Lesson for Organizations, Web Treats for Organizations: The Evils and Perils, Security and Privacy Implications from Cloud Computing, Social Media Marketing: Security Risk and Perils for Organization, Social Computing and the Associated Challenges for Organizations, Protecting People's Privacy in the Organization, Organizational Guidelines for Internet Usage, Safe Computing Guidelines and Computer Usage Policy, Incident Handling

## **LABORATORY EXPERIMENTS**

### **List of programs**

1. TCP scanning using NMAP
2. Port scanning using NMAP
3. TCP / UDP connectivity using Netcat
4. Perform an experiment to demonstrate sniffing of router traffic by using the tool Wireshark.
5. Perform an experiment how to use dumpsec.
6. Perform an experiment to sniff traffic using ARP Poisoning
7. Implementing the Secure Sockets Layer (SSL v2/v3) and Transport Layer Security (TLS v1) network protocols
8. Setup a honey pot and monitor the honey pot on network.

### **TEXT BOOKS**

1. Cyber Security Understanding Cyber Crimes, Computer Forensics and Legal Perspectives by Nina Godbole and Sunit Belpure, Publication Wiley

### **REFERENCE BOOKS**

1. Anti-Hacker Tool Kit (Indian Edition) by Mike Shema, Publication Mc Graw Hill.
2. Nina Godbole, *Information Systems Security*, Wiley India, New Delhi
3. Cyrus Piekari, Anton Chuvakin, "Security Warrior", 2nd ed., O'Reilly Publishers, 2005.