**Lesson Plan**

**Name of faculty :** Saravjit Chahal

**Discipline :** Computer Engineering

**Semester :** 6 (CO1)

**Subject :** Network Security

**Lesson Plan Duration :** 15 Weeks (20 Jan to 02 May)

**Work Load (Lecture/ Practical) per week (in hours):** Lectures-02, Practical - 02

|  |  |  |
| --- | --- | --- |
| **Week** | **Theory** | **Practical** |
| **Lecture day** | **Topic****(including assignment /****test)** | **Practical day** | **Topic** |
| 1st  | 1st | Need for securing a network;Principles of Security | 1st | Installation and comparison of various antivirus software |
| 2nd | Type of attacksIntroduction to cyber crime |
| 2nd | 3rd | Cyber law-Indian Perspective (IT Act 2000 and amended 2008), Cyber ethics, ethical hacking | 2nd | Installation and comparison of various antivirus software |
| 4th | Hacking, Skimming, Attacker, phreaker , hackivist, bluejacking, bluesnarfing, IOS Jailbreaking |
| 3rd  | 5th | Securing Data over Internet, Introduction to basic encryption and decryption | 3rd | Installation and study of various parameters of firewall |
| 6th | Concept of symmetric and asymmetric key cryptography |
| 4th | 7th | Overview of DES, RSA and PGP | 4th | Installation and study of various parameters of firewall |
| 8th | Introduction to Hashing: MD5SSL, SSH, HTTPS |
| 5th | 9th | Digital Signatures, Digital certificationIPSec | 5th | Writing program in C to Encrypt/Decrypt using XOR key |
| 10th | Sessional test-I |
| 6th | 11th | Virus, Worms and Trojans Definitions, | 6th | Writing program in C to Encrypt/Decrypt using XOR key |
| 12th | Preventive measures – access central, checksum verification |
| 7th | 13th | Process configuration, virus scanners, heuristic scanners, | 7th | Writing program in C to Encrypt/Decrypt using XOR key |
| 14th | Application level virus scannersdeploying virus protection, Zombie, Ransomware |
| 8th | 15th | Firewalls Definition and types of firewalls | 8th | Study of VPN |
| 16th | Firewall configuration, Limitations of firewall, Whitelisting Vs blacklisting |
| 9th | 17th | Sessional test-II  | 9th | Study of VPN |
| 18th | Intrusion Detection System (IDS)/IPS IntroductionIDS limitations – teardrop attacks  |
| 10th | 19th | Counter measures; Host based IDS set up Handling Cyber Assets | 10th | Study of various hacking tools |
| 20th | Configuration policy as per standardsDisposable policy |
| 11th | 21th | Virtual Private Network (VPN)Basics, setting of VPN,  | 11th | Study of various hacking tools |
| 22th | VPN diagram, configuration of required objects |
| 12th | 23th | Exchanging keys, modifying security policy | 12th | Study of various hacking tools |
| 24th | Disaster and Recovery, Disaster categories; network disasters |
| 13th | 25th | Cabling, topology, single point of failure, save configuration files | 13th | Practical applications of digital signature |
| 26th | Server disasters – UPS, RAID Clustering |
| 14th | 27th | Backups, server recovery | 14th | Practical applications of digital signature |
| 28th | Sessional Test-III |
| 15th | 29th | Revision | 15th | Revision |
| 30th | Revision |