**Lesson Plan**

**Name of faculty :** Ravinder Kumar Mehra

**Discipline :** Computer Engineering

**Semester :** 6

**Subject :** Network Security

**Lesson Plan Duration :** 16 Weeks (15 Feb to 15 June)

**Work Load (Lecture/ Practical) per week (in hours):** Lectures-03, Practical - 06

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| **Week** | **Theory** | **Practical** |
| **Lecture day** | **Topic****(including assignment /****test)** | **Practical day** | **Topic** |
| 1st | 1st | Need for securing a network; Principles of Security | 1st&2nd | Installation and comparison of various anti virus software |
| 2nd | Type of attacks |
| 3rd | Introduction to cyber crime,  |
| 2nd | 4th | Cyber law-Indian Perspective (IT Act 2000 and amended 2008) | 3rd&4th | Study of various hacking tools |
| 5th | Cyber ethics, ethical hacking. Hacking , Skimming |
| 6th | Attacker, phreaker , hackivist, bluejacking, bluesnarfing, IOS Jailbreaking |
| 3rd | 7th | Securing Data over Internet | 5th&6th | Writing program in C to Encrypt/Decrypt using XOR key. |
| 8th | Introduction to basic encryption and decryption |
| 9th | concept of symmetric and asymmetric key cryptography |
| 4th | 10th | overview of DES, RSA and PGP | 7th&8th | Writing program in C to Encrypt/Decrypt using XOR key |
| 11th | Introduction to Hashing: MD5 |
| 12th | SSL, SSH, HTTPS |
| 5th | 13th | Digital Signatures,  | 9th&10th | Practical applications of digital signature |
| 14th | Digital certification |
| 15th |  IPSec |
| 6th | 16th | Sessional test-I | 11th&12th |  |
| 17th | Virus, Worms and Trojans Definitions, |
| 18th | Preventive measures – access central, checksum verification |
| 7th | 19th | process configuration, virus scanners, heuristic scanners, | 13th&14th |  |
| 20th | application level virus scanners |
| 21st | deploying virus protection, Zombie, Ransomware |
| 8th | 22nd | Firewalls Definition and types of firewalls | 15th&16th | Installation and study of various parameters of firewall |
| 23rd | Firewall configuration, Limitations of firewall |
| 24th | Whitelisting Vs blacklisting. |
| 9th | 25th | Intrusion Detection System (IDS)/IPS Introduction | 17th&18th | Study of IDS |
| 26th | IDS limitations – teardrop attacks |
| 27th | counter measures; Host based IDS set up |
| 10th | 28th | Handling Cyber Assets-  | 19th&20th | Study of Disposable Policy |
| 29th | Configuration policy as per standards |
| 30th | Disposable policy |
| 11th | 31st | Sessional test-II | 21st&22nd | Study of VPN |
| 32nd |  Virtual Private Network (VPN) |
| 33rd | Basics, setting of VPN, VPN diagram |
| 12th | 34th | configuration of required objects | 23rd&24th |  |
| 35th | exchanging keys, modifying security policy |
| 36th | Disaster and Recovery |
| 13th | 37th | Disaster categories; network disasters | 25th&26th |  |
| 38th | cabling, topology, single point of failure |
| 39th | save configuration files |
| 14th | 40th | server disasters – UPS | 27th&28th |  |
| 41st | RAID |
| 42nd | Clustering |
| 15th | 43rd | Backups | 29th&30th |  |
| 44th | server recovery |
| 45th | Sessional Test-III |
| 16th | Revision |