# System & Network Security – 4 weeks

## 1. Networking Concepts

## 2. Cryptography

- Introduction to cryptography
- Cryptography basics
- Symmetric Ciphers
- Block Ciphers
- Public Key Infrastructure & Message Authentication
- Public Key Cryptography
- Diffie Hellman Key Exchange
- Elliptic Curve Cryptography
- MD5 Algorithm
- SHA Algorithm
- Digital Signatures
- Steganography

## 3. Cyber Forensics

- Introduction to cyber forensics
- Digital Evidence
- Live Forensics
- Disk Forensics
- Device Forensics

## 4. System Security

- Introduction to system security
- Importance of system security
- Security mechanisms & policies
- Password policies
- Password Vulnerabilities and attacks,brute force attacks,dictionary attacks
- OS Security
- Kerberos Security
- Access Controls-definition,techniques
- Access Control permissions,models
- Program Flaws,Buffer Overflows
- Securing e-mail systems,email encryption algorithms-PEM,PGP

## 5. Network Security

- Network Security threats and attacks
- Examples of Malicious software
- Security Protocols
- Firewalls& IDS-Introduction ,types
- VPN –types, VPN protocols
- Ipsec-Authentication Header, ESP, IKE (Internet Key Exchange)