Cyber Security

Unit	Course Topics	Hours
1	**Introduction to Cyber Security:** Importance, CIA triad, types of attacks, vulnerabilities, threats, cybercrime, security principles	4L
2	**Cryptography Basics:** Symmetric & asymmetric encryption, hash functions, digital signatures, certificates, SSL/TLS, applications of cryptography	6L
3	**Network Security:** Firewalls, IDS/IPS, VPN, proxy servers, port scanning, packet sniffing, Wi-Fi security, secure network design	6L
4	**System & Application Security:** OS hardening, access control models (DAC, MAC, RBAC), patch management, malware types, antivirus, secure coding basics	6L
5	**Web Security:** SQL Injection, XSS, CSRF, session hijacking, cookie poisoning, OWASP Top 10, secure authentication & authorization	5L
6	**Ethical Hacking & Penetration Testing:** Footprinting, scanning, enumeration, vulnerability assessment, exploitation basics, tools like Nmap, Metasploit	4L
7	**Cyber Laws & Incident Management:** Indian IT Act, digital forensics, incident response lifecycle, risk management, security policies, disaster recovery	4L