Govt. Polytechnic Hamirpur (H.P.)

Lesson Planning (Theory)

Branch : Information Technology **Semester : 6th**

Subject : Information Security & Cyber Laws **Session : Jan. – June, 2024**

Teacher : Pankaj Gautam **Class Room : LH-03**

Sr. No.	No. of Lectures	Chapter/ Unit Description	Detail of Contents	Objectives	Reference Resources	Remarks
1	1- 8	Unit-1 : Introduction to Cyber Security	Basic Security Concepts: confidentiality, integrity, availability, authentication, authorization, and nonrepudiation; need for cyber security; cyber security terminology: asset, threat, vulnerability, hacking, hackers, attacker, intruder, virus, worm, trojan horse, backdoor, logic bomb, eavesdropping, phishing, spamming, keylogger and spyware; cyber crime, cryptocurrency.	To make students understood of the concept, terminology, and principles of Cyber Security.	R1 , R2, R5, R8	
2	09-16	Unit-2 : Cyber Security Threats, Vulnerabilities, and Risks	Adversarial Threats: fraud and theft, insider threat, malicious hacker, malicious code, espionage; Non-Adversarial Threats: errors and omissions, loss of physical and infrastructure support, impact of information sharing on personal privacy	To make students understood of adversarial and non-adversarial threats in cyber security.	R3 , R8	
3	17-26	Unit-3 : Cyber Defense : Physical and System Security	Physical Security: protection of secure area, controlling visitors, physical security of facilities, fire-proof safes & containers, physical security using cables, locks and biometrics controls. System Security: OS patches and updates; protection against ransomware, malware, rootkits and botnets; handling denial-of-service attack, cyberbullies, identity theft, hoaxes, spyware, social engineering and phishing attacks; recovering from viruses, worms, and trojan horses	To make students understood of how physical and system security can be achieved.	R2, R3, R4, R8	

4	27-38	Unit-4 : Cyber Defense : Network Security	Network Classification: trusted, semi-trusted, untrusted & unknown networks; Network attacks classification : interruption, interception, modification & fabrication; Network attacks : password stealing, packet sniffers, IP spoofing, denial-of-service, man-in-middle, session hijacking; security of network infrastructure devices; Defense against network attacks : configuration management, encryption, firewall, VPN.	To make students understood of various defence mechanisms against network attacks.	R2, R3, R4,R8	
5	39-48	Unit-5 : Cyber Defense : Internet Security	Internet security threats : privacy breach, DNS spoofing, email spam, cross-site scripting (XSS); IP Security (IPSec) and SSL, Web browser security settings: cookies, website certificates, browsing history, plugins, parental control, form autofill, CAPTCHA; strong passwords; Handling email attachments, spams; use of bcc	To make students understood of the various internet security threats and defence against them.	R4, R5,R8	
6	48-56	Unit-6 : Introduction to Cyber Laws and IT Acts	Major provisions under Indian IT Act-2000; Intellectual Property Rights, Patent Law, Copyright Law, Digital Signatures	To make students having an overview of Cyber Laws and Indian IT Act 2000.	R6, R7	

REFERENCE RESOURCES

R1. Information Security: The Complete Reference By Mark Rhodes-Ousley, McGraw-Hill.

R2. Cyber Security By Nina Godbole, Wiley.

R3. An Introduction to Information Security, NIST Publication (https://www.us-cert.gov/ncas/tips)

R4. Cryptography and Network Security : Principles and Practice By William Stallings, Pearson

R5. Cryptography & Network Security, 3e, Atul Kahate, McGraw Hill

R6. Cyber Law Simplified by Vivek Sood, Mc Graw Hill

R7. IT Act 2000

R8. www.tutorialspoint.com

COURSE OUTCOMES:

After completing this course students will be able to:

CO-1 **Understand the basic Cyber Security terminology.**

CO-2 **Understand various cyber security threats, vulnerabilities and attacks.**

CO-3 **Understand cyber defence concepts for physical and system security.**

CO-4 **Understand cyber defence concepts for network and internet security.**

CO-5 **Have knowledge of cyber laws and IT Act-2000.**

27/01/24

Signature of Teacher with Date

Signature of H.O.D.