LESSON PLAN

Department: CSE Semester: 6th, Name of Faculty: SUBRAT KUMAR SAHOO			
Subject: CRYPTOGRAPHY & NETWORK SECURITY (TH-1)	**No. of days/ week Class allotted: 4**	**Effective From Date: 22.12.2025**	
		No. of Week-15	
		Topic to be Covered:	
Week	**ClassDay**	**Theory**	
1st	1st	UNIT 1:POSSIBLE ATTACKS ON COMPUTERS	
	2nd	1.1 The need for security	
	3rd	1.2 Security Approach	
	4th	1.2.1 Different types of Security Approach	
2nd	1st	1.3 Principles of security 1.4 Types of attacks	
	2nd	UNIT 2:CRYTOGRAPHY CONCEPTS	
	3rd	2.1 Plain text 2.1.1 Cipher Text	
	4th	2.2 Substitution techniques	
3rd	1st	2.3 Transposition techniques	
	2nd	2.4 Encryption and Decryption	
	3rd	2.5 Symmetric key cryptography	
	4th	2.5.1 Asymmetric key cryptography	
4th	1st	2.5.2 Difference between Symmetric key cryptography and A Symmetric key cryptography	
	2nd	2.5.1 Asymmetric key cryptography	
	3rd	2.5.2 Difference between Symmetric key cryptography and A Symmetric key cryptography	
	4th	UNIT 3: ASYMMETRIC AND SYMMETRIC KEY ALGORITHMS	
5th	1st	3.1 Symmetric key algorithm types	
	2nd	3.1.1 AES, DES and 3DES	
	3rd	3.2 Overview of Symmetric key cryptography	
	4th	3.3 Data encryption standards	
6th	1st	3.3.1 Need of Data encryption	
	2nd	3.4 Overview of Asymmetric key cryptography	
	3rd	3.5 The RSA algorithm	
	4th	3.5.1 Private Key and Public Key	
7th	1st	3.6 Symmetric key cryptography	
	2nd	3.6.1 Asymmetric key cryptography	
	3rd	3.6.1.1 Usage of Asymmetric key cryptography	
	4th	3.6.1.2 Usage of Symmetric key cryptography	
8th	1st	3.7 Digital signature	
	2nd	3.7 use of digital signature and its importance	
	3rd	UNIT 4: DIGITAL CERTIFICATE & PUBLIC KEY INFRASTRUCTURE	
	4th	4.1 Digital certificates	
9th	1st	4.1.1 Usage of Digital Certificate	
	2nd	4.2 Private key management	
	3rd	4.2.1 Key component of Private Key Management	

	4th	4.2.2 Need of Private Key management
10th	1st	4.3 PKIX Model
	2nd	4.3.1 Components and functions of PKIX Model
	3rd	4.4 Public key cryptography standards
	4th	4.4.1 Public key cryptography functions
11th	1st	**UNIT 5: INTERNET SECURITY PROTOCOLS**
	2nd	5.1 Basic concept
	3rd	5.2 Secure socket layer
	4th	5.3 Transport layer security
12th	1st	5.4 Secure Hypertext transfer protocol(SHTTP)
	2nd	5.4.1 Area of usage of SHTTP
	3rd	5.5 Time stamping protocol (TSP)
	4th	5.5.1 Usage and benefit of TSP
13th	1st	5.6 Secure electronic transaction (SET)
	2nd	5.6.1 Secure electronic transaction (SET) and dual Signature
	3rd	**UNIT 6: USER AUTHENTICATION**
	4th	6.1 Authentication basics 6.2 Password
14th	1st	6.3 Authentication Tokens
	2nd	6.4 Certificate based authentication 6.5 Biometric authentication
	3rd	**UNIT 7: NETWORK Security and VPN**
	4th	7.1 Brief introduction of TCP/IP
15th	1st	7.2 Firewall
	2nd	7.3 IP Security
	3rd	7.4 Virtual Private Network (VPN)
	4th	7.5 Common uses and benefits of VPN

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