CSE 3752: Computer Networking:Security

	ITER, SIKSHA 'O' ANUSANDHAN **(Deemed to be University)**		**LESSON PLAN**
Programme	**B.Tech.**	Academic Year	**2024-2025**
Department	**CSE & CSIT**	Semester	**6^{th}**
Credit	**4**	Grading Pattern	**1**
Subject Code	**CSE 3752**		
Subject Name	**Computer Networking:Security**		
Weekly Course Format	**3L-2P**		
Subject Coordinator (s)	**Dr. Manoranjan Das, Dr. Susmita Panda, Srikant Sahoo**		

Text Books(s):

(1) CompTIA Security+ SY0-701 Certification Guide by Ian Neil , 3^{rd} Edition, Packt publication(GS)

Course Outcomes	Students will be able to	
	CO1	Understand the various types of security controls, including technical, managerial and operational.
	CO2	Explain the importance of using appropriate cryptographic solutions like PKI, encryption levels, tools, obfuscation, hashing, digital signatures, and certificates.
	CO3	Explain common threat actors, their motivations, and various threat vectors, along with understanding different types of vulnerabilities.
	CO4	Analyze the indicators of malicious activity, based on a given scenario and Explain the purpose of mitigation techniques used to secure the enterprise.
	CO5	Explain the importance of the security implications of different architecture models, including cloud, serverless, microservices, and network infrastructure.
	CO6	Apply security principles in different infrastructure scenarios including device placement, security zones, and network appliances.

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Sl.No.	Lessons/Topics to be covered	Book Reference (sections)	Mapping with COs	Home Work/ Assignments/ Quizzes
1	**Compare and contrast various types of security controls:** Control Categories, Technical, Managerial, Operational, and Physical controls.	GS_CH. 1 (pg.1 - 7)	**CO1**	
2	Control Types (Preventive, Detective, Corrective, Deterrent, Compensating, and Directive controls.)	GS_CH. 1 (pg.7 - 8)	**CO1**	
3	**Summarize fundamental security concepts:** CIA Triad (Confidentiality, Integrity, Availability) Importance and real-world applications. Non-repudiation, Authentication, Authorization, and Accounting (AAA)	GS_CH. 2 (pg.13 - 16)	**CO1**	
4	Lab 1: Configuration and verification of user authentication on a Cisco router and switch using local username-password authentication.		**CO2, CO4**	
5	Gap Analysis and Zero Trust Framework, The Data Plane, Physical Security, Deception and Disruption Technology	GS_CH. 2 (pg.17 - 24)	**CO1**	
6	**Explain the importance of change management processes and the impact to security:** Change Management	GS_CH. 3 (pg.31 - 34)	**CO1**	
7	Technical Implications, Documentation, Version control	GS_CH. 3 (pg.34 - 37)	**CO2**	
8	Lab 2: Configuration and verification of Port Aggregation (EtherChannel) using LACP (Link Aggregation Control Protocol) on a Cisco switch to increase bandwidth and provide redundancy.		**CO1**	
9	**Explain the importance of using appropriate cryptographic solutions:** Public Key Infrastructure (PKI)	GS_CH. 4 (pg.43-45)	**CO2**	**Quiz test-1**
10	Encryption: Symmetric Encryption (Classical symmetric encryption algorithms)	GS_CH. 4 (pg.46-49)	**CO2**	
11	Encryption: Symmetric Encryption (DES)	GS_CH. 4 (pg.46-49)	**CO2**	
12	Lab 3:		**CO1**	