University of Engineering and Technology Lahore - New Campus (Kala Shah Kaku)
Section Course Outline Report

Department: Computer Science (KSK) Printed Date: January 25, 2024

Section Course Detail	
Semester	SPRING 2024
Department	Computer Science (KSK)
Section	A
Subject Title	CS-364 Information Security
Subject Domain	Engineering
Subject Knowledge	Computing
Contact	anam.iftikhar8@gmail.com

Measureable Student Learning Outcomes

CLOs	Description	PLOs	Domain	Domain Level	Assessments
CLO1	Explain key concepts of information security such as design principles, cryptography, risk management, and	PLO01	Cognitive	2. Understand	null
CLO2	Discuss legal, ethical, and professional issues in information security.	PLO01	Cognitive	2. Understand	null
CLO3	Apply various security and risk management tools for achieving information security and privacy.	PLO04	Cognitive	3. Apply	null
CLO4	Compare different techniques to tackle and solve problems in the discipline of information security.	PLO02	Cognitive	4. Analyze	null

Class Timings

Section Content		
Week (Lec)	Topics	CLO's
week1	Fundamental Security Objectives Ten Domains of Information Security Standards	CLO2, CLO1

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Section Content		
Week (Lec)	**Topics**	**CLO's**
week2	Mathematical Background I: Modular Arithmetic, Euclidean algorithm	CLO1
week3	Symmetric Cryptography: Substitution Techniques (Permutation) Monoalphabetic (Affine cipher)	CLO4, CLO1
week4	Block Cipher Fiestel Structure DES	CLO4, CLO1
week5	AES Block cipher Modes of Operations	CLO4, CLO1
week6	Stream Ciphers and RC4 Mathematical Background II: Fermat's Little Theorem, Euler's Phi Function, Euler's Theorem.	CLO4
week7	Asymmetric Cryptography: RSA algorithm	CLO4
week8	Cryptographic Hash functions and Message Authentication Codes Digital Certificates and Digital Signatures	CLO3, CLO4
week9	Mid Term	CLO4, CLO3, CLO1
week10	Information Security Management : Threat, Vulnerability, Controls, Risk Management, Information Security Standards (ISO-27000 Family)	CLO1, CLO2
week11	Legal, Ethical and Professional issues in Information Security	CLO2

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Section Content		
Week (Lec)	Topics	CLO's
week12	Identity and Access Management: Authentication Authorization and Accountability, Access Control Models, ACLs, Capabilities, Views and constrained user interfaces	CLO3
week13	Key Distribution and Management: Deffie-Hellman Key Agreement Intoduction to Networks (TCP/IP Model)	CLO3
week14	Network Security: SSL/TLS IPSecurity VPNs, Firewalls Wireshark (Assignment)	CLO3
week15	Software Security Overview: Buffer Overflows, Web Security and Threats (SQL Injection, CSRF, XSS)	CLO4
week16	Final Term	CLO3, CLO4