Course Code: CSE403 **Course Title:** Network Security and Cryptography **L T P:** 1 0 0
Credits: 4

Course Weightage: ATT: 5 CA: 25 MTT: 20 ETT: 50
Exam Category: 55 (MTE: SUBJECTIVE; ETE: SUBJECTIVE)
Course Focus: EMPLOYABILITY, SKILL DEVELOPMENT
Text Book:

Sr No	Title	Author	Publisher Name
T-1	CRYPTOGRAPHY AND NETWORK SECURITY: PRINCIPLES AND PRACTICE, 6/E	WILLIAM STALLINGS	PEARSON

Reference Book:

Sr No	Title	Author	Publisher Name
R-1	CRYPTOGRAPHY AND NETWORK SECURITY	BEHROUZ A. FOROUZAN	MCGRAW HILL EDUCATION

Software/Equipments/Databases: C++/Java
Course Link: https://www.coursera.org/programs/cseb403-network-security-and-cryptography-batch-2-tgr8g

Course Outcomes: Through this course students should be able to

CO1 :: understand conventional cryptography ciphers and the attacks on wireless adhoc networks
CO2 :: describe the working of various modern cryptographic symmetric ciphers
CO3 :: demonstrate the working of various public-key cryptography algorithms
CO4 :: determining various ubiquitous hashing and digital signature algorithms
CO5 :: examine various digital signature schemes and cryptographic key distribution techniques
CO6 :: analyze various cryptographic algorithms that are used in different layers of TCP/IP model for providing network security

LTP week distribution: (LTP Weeks)	
Weeks before MTE	7
Weeks After MTE	7

Detailed Weekly Plan

Week	Duration	Broad Topic	Topic/Module	Coursera Link
Week 1	22/01/24 -28/01/24	Introduction and mathematics of cryptography	SecurityGoals, Cryptographic Attacks, Services and Mechanism.	T-1, R-1

		Introduction and mathematics of cryptography	Module-4: Mathematical Foundations for Cryptography	https://www.coursera.org/programs/cseb403-network-security-and-cryptography-batch-2-tgr8g/learn/mathematical-foundations-cryptography
Week 2	29/01/24 – 04/02/24	Classification of attacks for wireless adhoc and VANET	Attacks at the Physical, MAC and Network Layer	T-1, R-1
		Traditional symmetric-key cipher	Module-3: Symmetric Cryptography	https://www.coursera.org/programs/cseb403-network-security-and-cryptography-batch-2-tgr8g/learn/symmetric-crypto
Week 3	05/02/24 - 11/02/24	Modern Symmetric-key Encipherment	Module-4: Mathematical Foundations for Cryptography	https://www.coursera.org/programs/cseb403-network-security-and-cryptography-batch-2-tgr8g/learn/mathematical-foundations-cryptography
Week 4	12/02/24 - 18/02/24	Modern Symmetric-key Encipherment	Module: Cryptography	https://www.coursera.org/programs/cseb403-network-security-and-cryptography-batch-2-tgr8g/learn/cryptography-sscp
		Modern Symmetric-key Encipherment	Module: Symmetric Cryptography	https://www.coursera.org/programs/cseb403-network-security-and-cryptography-batch-2-tgr8g/learn/symmetric-crypto
		TERM PAPER		
Week 5	19/02/24 - 25/02/24	Modern Symmetric-key Encipherment	Module: Cryptography	https://www.coursera.org/programs/cseb403-network-security-and-cryptography-batch-2-tgr8g/learn/cryptography-sscp
		Modern Symmetric-key Encipherment	Module: Symmetric Cryptography	https://www.coursera.org/programs/cseb403-network-security-and-cryptography-batch-2-tgr8g/learn/symmetric-crypto
Week 6	26/02/24 - 03/03/24	Asymmetric-key Encipherment	Module: Mathematical Foundations for Cryptography	https://www.coursera.org/programs/cseb403-network-security-and-cryptography-batch-2-tgr8g/learn/mathematical-foundations-cryptography
		Asymmetric-key Encipherment	Module: Asymmetric Cryptography and Key Management	https://www.coursera.org/programs/cseb403-network-security-and-cryptography-batch-2-tgr8g/learn/asymmetric-crypto
		Test: Code-Based-1		

Week 7	04/03/24 - 10/03/24	Asymmetric-key Encipherment	Module: Cryptography	https://www.coursera.org/programs/cseb403-network-security-and-cryptography-batch-2-tgr8g/learn/cryptography-sscp
MTE				
Week 8	25/03/24 – 01/04/24	Message integrity and Hashfunction	Module: Cryptographic Hash and Integrity Protection	https://www.coursera.org/programs/cseb403-network-security-and-cryptography-batch-2-tgr8g/learn/cryptographic-hash-integrity-protection
Week 9	01/04/24 - 07/04/24	Message integrity and Hashfunction	Module: Cryptographic Hash and Integrity Protection	https://www.coursera.org/programs/cseb403-network-security-and-cryptography-batch-2-tgr8g/learn/cryptographic-hash-integrity-protection
		Message integrity and Hashfunction	SHA512	T-1, R-1
Week 10	08/04/24 - 14/04/24	Digital Signature and Key management	Module: Asymmetric Cryptography and Key Management	https://www.coursera.org/programs/cseb403-network-security-and-cryptography-batch-2-tgr8g/learn/asymmetric-crypto
		Digital Signature and Key management	Module: Cryptographic Hash and Integrity Protection	https://www.coursera.org/programs/cseb403-network-security-and-cryptography-batch-2-tgr8g/learn/cryptographic-hash-integrity-protection
		Test: Subjective		
Week 11	15/04/24 - 21/04/24	Digital Signature and Key management	Module: Asymmetric Cryptography and Key Management	https://www.coursera.org/programs/cseb403-network-security-and-cryptography-batch-2-tgr8g/learn/asymmetric-crypto
Week 12	22/04/24 - 28/04/24	Network Security	Module: Cryptography	https://www.coursera.org/programs/cseb403-network-security-and-cryptography-batch-2-tgr8g/learn/cryptography-sscp
		Network Security	Security service at transport layer andSSL architecture-Four SSL protocols	T-1, R-1
		Test: Code-Based-2		

Week 13	29/04/24 - 05/05/24	Network Security	Module: Cryptography	https://www.coursera.org/programs/cseb403-network-security-and-cryptography-batch-2-tgr8g/learn/cryptography-sscp
Week 14	06/05/24 - 12/05/24	Network Security	Module: Cryptography	https://www.coursera.org/programs/cseb403-network-security-and-cryptography-batch-2-tgr8g/learn/cryptography-sscp
		Network Security	AH andESP security protocols, security associations and security policy	T-1, R-1

NOTE: It is mandatory to complete the number of courses for being eligible for End Term Examination along with the attendance criteria of the university. The links of the courses as shared in the IP should be completed on/before the last teaching day as per the academic calendar of the university.

Scheme for CA:

CA Category of this Course Code is: CA Category of this Course Code is:C010203 (Total 4 tasks, 1 compulsory and out of remaining 2 best out of 3 to be considered)

Component	Is Compulsory	Weightage
Term paper	Yes	33.33
Test	NO	33.33
Test - Code based 1	NO	33.33
Test - Code based 2	NO	33.33