



MARRI LAXMAN REDDY INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

Accredited by NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act, 1956

COURSE CONTENT

CRYPTOGRAPHY AND NETWORK SECURITY LAB								
VI Semester: CSE								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
2460582	Foundation	L	T	P	C	CIA	SEE	Total
		0	0	2	1	40	60	100
Contact Classes:	Tutorial Classes:	Practical Classes: 28			Total Classes: 28			
Prerequisites: Basic Concepts of Cryptography, Programming Knowledge, Java Programming Lab								

Course Overview:

This course focuses on techniques and protocols used to protect information and communication systems from unauthorized access, attacks, and misuse. The course combines mathematical foundations of cryptography with practical network security mechanisms used in real-world systems.

Course Objectives:

1. Understand security threats, attacks, and countermeasures
2. Apply cryptographic algorithms to protect data
3. Analyze and design secure communication protocols
4. Understand network security architectures and standards
5. Evaluate real-world security systems and vulnerabilities

Course Outcomes: After Completion of the Course, Students should be able to

1. Demonstrate the knowledge of cryptography and network security concepts and applications
2. Understand and apply the concepts of symmetric encryption.
3. Identify and investigate of Cryptographic Hash Functions
4. Understand the concepts of email security and PGP.
5. Understand and apply web security mechanisms.

LIST OF EXPERIMENTS:

1. Write a C program that contains a string (char pointer) with a value `__Hello world'`. The program should XOR each character in this string with 0 and displays the result.
2. Write a C program that contains a string (char pointer) with a value `__Hello world'`. The program should AND or and XOR each character in this string with 127 and display the result.
3. Write a Java program to perform encryption and decryption using the following algorithms a. Ceaser cipher b. Substitution cipher c. Hill Cipher
4. Write a C/JAVA program to implement the DES algorithm logic.
5. Write a C/JAVA program to implement the Blowfish algorithm logic.

6. Write the RC4 logic in Java Using Java cryptography; encrypt the text —Hello world|| using Blowfish. Create your own key using Java key tool.
7. Write a Java program to implement RSA algorithm.
8. Implement the Diffie-Hellman Key Exchange mechanism using HTML and JavaScript.
9. Calculate the message digest of a text using the SHA-1 algorithm in JAVA.
10. Calculate the message digest of a text using the MD5 algorithm in JAVA.

TEXT BOOKS:

1. Cryptography and Network Security by Atul Kahathe MC Graw Hill, 2nd edition.
2. Cryptography and Network Security by Will I am Stallings 6th Edition, Pearson Education.

REFERENCE BOOKS:

1. Cryptography and Network Security by Behrouz A.Forouzan.
2. Applied Cryptography|| by Bruce Schneier

ELECTRONIC RESOURCES:

1. <https://www.nptelprep.in/courses/106105031>
2. <https://www.getyoureducation.net/course/cryptography-and-network-security->
3. <https://wizape.com/English/Cryptography-and-Network-Security/>
4. <https://www.tutorialsduniya.com/notes/cryptography-network-security-notes/>
5. <https://www.cse.iitm.ac.in/~shwetaag/notes/Lec1.pdf>

MATERIALS ONLINE:

1. Course template
2. Open-ended experiments
3. E-Learning Readiness Videos (ELRV)