



St. Martin's Engineering College

UGC AUTONOMOUS
NBA & NAAC A+ Accredited
Dhulapally, Secunderabad-500 100



www.smecc.ac.in

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE (AI & DS) CRYPTOGRAPHY AND NETWORK SECURITY LAB (Professional Elective – III)

IV B. TECH - I SEMESTER (R 22)								
Course Code	Programme	Hours / Week			Credits	Maximum Marks		
AID740PE	B. Tech	L	T	P	C	CIE	SEE	Total
		0	0	2	1	40	60	100

Course Objectives:

- Explain the objectives of information security
- Explain the importance and application of each of confidentiality, integrity, authentication and availability
- Understand various cryptographic algorithms.

Course Outcomes:

- Understand basic cryptographic algorithms, message and web authentication and security issues.
- Identify information system requirements for both of them such as client and server.
- Understand the current legal issues towards information security.

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

TEXT BOOKS

1. Cryptography and Network Security - Principles and Practice: William Stallings, Pearson Education, 6th Edition.
2. Cryptography and Network Security: Atul Kahate, McGraw Hill, 3rd Edition

REFERENCE BOOKS

1. Cryptography and Network Security: C K Shyamala, N Harini, Dr T R Padmanabhan, Wiley India, 1st Edition.
2. Cryptography and Network Security: Forouzan Mukhopadhyay, McGraw Hill, 3rd Edition.
3. Information Security, Principles, and Practice: Mark Stamp, Wiley India.
4. Principles of Computer Security: WM. Arthur Conklin, Greg White, TMH.
5. Introduction to Network Security: Neal Krawetz, CENGAGE Learning.
6. Network Security and Cryptography: Bernard Menezes, CENGAGE Learning.

WEB REFERENCES

1. <https://cse29-iiiith.vlabs.ac.in/>
2. <https://vignanits.ac.in/cryp-a-n-s-lab/>
3. <https://docplayer.net/196893274-Cryptography-network-security-laboratory.html>

E -TEXT BOOKS

1. <https://bpbonline.com/products/cryptography-and-network-security>
2. <https://www.scribd.com/doc/288919040/Network-Security-Lab-Manual>
3. <https://www.chegg.com/textbooks/cryptography-and-network-security-6th-edition-9780133354690-0133354695>

MOOCS COURSE

1. https://onlinecourses.nptel.ac.in/noc22_cs90/preview
2. <https://www.udemy.com/course/network-security-with-hands-on-labs/>
3. <https://www.udemy.com/course/cisco-security-labs/>