Walchand College of Engineering, Sangli
(Government Aided Autonomous Institute)
AY 2025-26
Course Information

Programme	B.Tech. (Computer Science and Engineering)
Class, Semester	Final Year B. Tech., Sem VII
Course Code	6CS451 C
Course Name	Cryptography and Network Security Lab

Experiment No. 05

Title - Apply DES algorithm for practical applications

Objectives:

To implement the DES (Data Encryption Standard) algorithm for encrypting and decrypting a plaintext message to ensure secure data transmission. This lab demonstrates how symmetric key cryptography can be used to protect information in real-world communication systems.

Problem Statement:

You are working as a software security analyst for a company that needs to transmit sensitive employee data (like Social Security Numbers or salary information) between two systems over a network. To ensure data confidentiality, you are required to implement the **DES algorithm** in encryption and decryption mode.

Your task is to write a program that:

1. Takes a plaintext input from the user.
2. Uses a user-defined 64-bit key (as a hexadecimal or ASCII string).
3. Encrypts the plaintext using the DES algorithm.
4. Outputs the encrypted text (ciphertext).
5. Decrypts the ciphertext back to plaintext using the same key to verify correctness.

Equipment/Tools:

Theory:

Procedure:

Steps:

Observations and Conclusion: