

**MC220 CRYPTOGRAPHY AND NETWORK SECURITY LAB****Objective of the Course:**

*After the successful completion of this course the student is enable towards learning and create security in networks as well as information and database. Also protect e-mail messages and instant messaging from common security threats and have basic ideas of routing algorithms.*

1. Implement the data link layer framing method of bit stuffing & Character Stuffing.
2. Implement CRC polynomial for error checking.
3. Write a program to transfer file using TCP.
4. Write a program to transfer file using UDP.
5. Implement the following algorithms
  - a. Implement Caesar substitution technique with a shift of 'k' positions.
  - b. Implement Hill cipher. Encrypt the Message "PAYMOREMONEY" with a key.
  - c. Implement Mono-alphabetic substitution. Generate the mapping using random number 0 to 26.
6. Write a program to encrypt and decrypt using row and column transposition cipher.
7. Implementation of DES algorithm using 64-bit text and encrypt the same.
8. Implementation of RSA algorithm for encryption and decryption.
9.
  - a. Program to print the content of the file given in URL.
  - b. To write a program to find multiple IP Address of multi-named host.
10. Implementation of Security Services.

**Text Books:**

1. Cryptography and Network security by William Stallings, Pearson Education, Fourth Edition
2. Network Security Essentials (Applications and Standards) by William Stallings Pearson Education, Second Edition

**Reference Books:**

1. Fundamentals of Network Security by Eric Malwald(Dreamtech press)
2. Network Security – Private Communication in a Public World by Charlie Kaufman, Radis Perlman and Mike Speciner,Pearson Education
3. Introduction to Cryptography Buchmann, Springer
4. Problem solving with C++, The OOP, Fourth edition, W.Savitch, Pearson education.
5. C Programming with problem solving, J.A. Jones & K. Harrow, Dreamtech Press.
6. Java How to Program, Sixth Edition, H.M.Dietel and P.J.Dietel, Pearson Education/PHI