The Islamic University
College of Technical Engineering
Department of Computer Technical Engineering

Fourth Stage

Security Lab.

Lecture 11

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Example

Write a program in MATLAB to Encrypt the message "**Communication**" by using **Hill Cipher** with **Key matrix** is :

$$K = \begin{pmatrix} 3 & 1 \\ 6 & 5 \end{pmatrix}$$

Encryption $\longrightarrow$ $C_i = (P_i * K) \bmod 26$

Encryption Code

```
clc, clear

p = input('Plaintext = ','s');
k = [3 1; 6 5];

p = lower(p);
lp = length(p);

if mod(lp,2)~= 0
    p(lp+1)='x';
end

for i=1:2:lp
    s = (p(i:i+1))'-97;
    c(i:i+1) = mod(k*s,26);
end

c=char(c+65)
```

$$K = \begin{pmatrix} 3 & 1 \\ 6 & 5 \end{pmatrix}$$

The Result of Encryption is:

UEWCVDAGTRMOKL

Homework

By using Hill Cipher, Encrypt the message "Security of Computer and Networks" with Key matrix:

$$K = \begin{pmatrix} 17 & 17 & 5 \\ 21 & 18 & 21 \\ 2 & 2 & 19 \end{pmatrix}$$