

University of Technology
Computer Engineering Department
Academic Year 2023 - 2024
Fourth Year – 2nd Semester – NE Branch



Code	Network Security	2 Hours/Week	2 Units
-------------	-------------------------	---------------------	----------------

Contents of Syllabus	Hours
1- Introduction <ul style="list-style-type: none"> ▪ Security Attacks ▪ Security Services ▪ Model for Network Security 	2
2- Conventional Encryption and Message Confidentiality <ul style="list-style-type: none"> ▪ Conventional Encryption Principles ▪ Conventional Encryption Algorithms ▪ Location of Encryption Devices ▪ Key Distribution 	4
3- Public Key Cryptography and Message Authentication <ul style="list-style-type: none"> ▪ Approaches to Message Authentication ▪ Secure hash algorithm(SHA1)and message digest(MD5) ▪ Public-Key Cryptography Principles ▪ Raviest,shamer,Adelman(RSA) ▪ Digital Signatures ▪ Key Management 	6
4- Network Security Applications <ul style="list-style-type: none"> ▪ Kerberos Motivation ▪ Kerberos Version 4 ▪ PGP Notation ▪ PGP Operational Description 	4
5- IP Security <ul style="list-style-type: none"> ▪ IP Security Overview ▪ IP Security Architecture ▪ Authentication Header 	2
6- Web Security <ul style="list-style-type: none"> ▪ Web Security Threats ▪ Web Traffic Security Approaches ▪ Overview of Secure Socket Layer and Transport Layer Security ▪ Overview of Secure Electronic Transaction 	4
7- Intruders and Viruses <ul style="list-style-type: none"> ▪ Intrusion Techniques ▪ Password Protection ▪ Password Selection Strategies ▪ Intrusion Detection ▪ Malicious Programs ▪ Types of Viruses: Macro Viruses, Antivirus Approaches 	6

8- Firewalls

- Firewall Characteristics
- Types of Firewalls
- Firewall Configuration

2

Textbooks:

- 1- "Network Security Essentials: Applications and Standards" by William Stallings.2007
- 2- "Network Security private communication in a public world", C. Kaufman, R. Perlman and M. Speciner.2012

References:

- 1- "Cryptography and Network Security", William Stallings, 2nd Edition. 2006
- 2- "Designing Network Security", Merike Kaeo, 2nd Edition. 2003
- 3- "Building Internet Firewalls", Elizabeth D. Zwicky, Simon Cooper, D. Brent Chapman, 2nd Edition.2010
- 4- "Practical Unix & Internet Security", Simson Garfinkel, Gene Spafford, Alan Schwartz, 3rd Edition,2012.

