

## Faculty of Computers and Information Technology

### Computer Networks 1

**Information :**

**Course Code :** ITC 222

**Level :** Undergraduate

**Course Hours :** 3.00- Hours

**Department :** Faculty of Computers and Information Technology

**Instructor Information :**

Title	Name	Office hours
Lecturer	AMIRA SAYED ABDELAZIZ ALI	
Lecturer	Mahmoud Abdel Moneam Mahdi Mahmoud	
Teaching Assistant	Mona Mohamed Mohamed Ali Almakhton	
Teaching Assistant	SHAIMAA TAREK HASAN ABDEEN	1

**Area Of Study :**

This course introduces the basic concepts of data communications and networking. Data communications standards and protocols. Local Area Networks (LANs). Wide Area Networks (WANs). Wireless Computer Networks. Computer Network Security Techniques.

**Description :**

Definition and objectives, Classifications, topologies, Architecture, standards, Applications, ISO-OSI model, Switching techniques, Error detection and Correction, Network protocols, Routing strategies and techniques, Flow control, Congestion control , Public switched data network. Internetworking; Introduction to ISDN and B-ISDN.

**Course outcomes :**

**a.Knowledge and Understanding: :**

1 -	Be conversant in the basic terminology of Data and Computer Communications.
2 -	Be familiar with the communication architectures OSI and TCP.
3 -	Be familiar with different types of networks technologies and systems.
4 -	Be conversant in the basic terminology of Computer Networks.
5 -	Be familiar with the types of computer networks and the communication architectures OSI and TCP.
6 -	Be familiar with Basics of Local Area Networks; techniques, protocols and applications..
7 -	Be aware of Internetworking and Internet standards and protocols
8 -	Be aware of Computer Networks Security issues and techniques.

**b.Intellectual Skills: :**

1 -	Employ analytical skills during comparing of different techniques and topologies of computer networks
2 -	Design of a LAN configuration for given requirements
3 -	Design of a routing algorithms for a WAN

**c. Professional and Practical Skills: :**

1 -	Design and implementation of communication link between two and/or more computers
2 -	Design and implementation of the communication protocol for data exchange between two computers using java language
3 -	Using java language to implement data transfer between different devices

**d. General and Transferable Skills: :**

1 -	Research on emerging technologies of wireless communication and networking
2 -	Work effectively in team project
3 -	Enhance communications and presentation skills

**Course Topic And Contents :**

Topic	No. of hours	Lecture	Tutorial / Practical
Data Communications Concepts	4	2	2
Networking Concepts	4	2	2
Local Area Networks	4	2	2
High Speed LANs	4	2	2
Wireless LANs	4	2	2
Wide Area Networks (WANs)	4	2	2
Cellular and Wireless Mobile Networks	4	2	2
Internetworking and Internet	4	2	2
Networks Security	4	2	2
Research Work Presentations	4	2	2
Research Work Presentations	4	2	2

**Teaching And Learning Methodologies :**

Lectures  
Exercises  
Presentation  
Projects  
practical training

**Course Assessment :**

Methods of assessment	Relative weight %	Week No	Assess What
Final Exam	40.00	15	
Midterm Exam I	15.00	6	
Midterm Exam II	15.00	12	
Project	15.00	14	
Research/Presentation	10.00	14	

