



**Department of Computer Science**

**College of Science**

**University of Cihan- Sulaimanyia Campus**

**Subject: Computer Networks**

**Course Book – Year 4<sup>th</sup>.**

**Lecturer's name Dr.Lway Faisal (BSc, MSc, PhD)**

**Academic Year: 2023/2024**

# Course Book

<b>1. Course name</b>	<b>Computer Networks</b>
<b>2. Lecturer in charge</b>	<b>Dr. Lway Faisal Abdulrazak</b>
<b>3. Department/ College</b>	<b>Computer Science Dep. / Collage of Science</b>
<b>4. Time (in hours) per week</b>	<b>Theory: 2 hrs Practical: 2 hrs</b>
<b>5. Office hours</b>	<b>2 hours</b>
<b>6. Course code</b>	<b>CSC24100</b>
<b>7. Teacher's academic profile</b>	<a href="https://scholar.google.com/citations?user=ldE4GNEAAAJ&amp;hl=en">https://scholar.google.com/citations?user=ldE4GNEAAAJ&amp;hl=en</a>
<b>8. Keywords</b>	<b>Networking</b>
<b>9. Course overview:</b> This course will enhance the students' knowledge on computer network. The students will be taught with the various possible techniques to understand the modern networks for wired and wireless services.	
<b>10. Course objective:</b> The basic concept of network layers, protocols, interfacing and inter-working between computer networks and network devices in telecommunication systems will be deleverd to students.	
<b>11. Student's obligation</b> Student should be able to contribute significantly to finish his assignments alone and within a group work. Attending lectures will be compulsory to pass this subject.	
<b>12. Forms of teaching</b> Contact hours: 2 theoretical weekly hours + 2 Lab.	

### 13. Assessment scheme

Midterm Examination	25%
Paper, Quiz, Project	10%
Lab exam	15%
Final Practical Examination	15%
Final theory exam	35%

### 14. Student learning outcome:

Student will learn the basics of Computer Communication networking.

### 15. Course Reading List and References:

1. Computer Networks, 4<sup>th</sup> edition, Andrew S. TANENBAUM 2003
2. Computer Networks and INTERNET, 4<sup>th</sup> edition, Douglas E. COMER 2004
3. Data and computer communications, 8<sup>th</sup> edition, William STALLINGS 2007
4. Network Fundamentals CCNA (CISCO) 2008
5. Communication Networks, Sharam Hekmet 2005

### 16. The Topics:

Lecture No	Topic
1	Introduction to computer network: Historic, Definition, Communication, Why?
2	Lab
1	Uses of computer network: Business Application, Home Application, Mobile users
2	Lab
1	Introduction to Communication signal: Analog Signal, Digital Signal Data Transmission Modes :Simplex mode, Half-duplex mode, Full-duplex mode
2	Lab
1	Parallel & Serial Data :Asynchronous Serial Transmission, Synchronous Serial Transmission  Data Communication Terminology:  Data Multiplexing: Time Division Multiplexing (TDM), Frequency Division Multiplexing (FDM)
2	Lab
1	Modems: Modulation Techniques : Amplitude Modulation (AM), Frequency Modulation(FM),Phase Modulation (PM)
2	Lab

1	Networking Devices : (connecting devices) Repeater, Hub, NIC, Bridge, Gateway, Layer 2 Switch, Router Networking Devices : (OS)
2	Lab
1	Network Topologies: Bus, Ring, Star Networking Media: Twisted Pair Cable Shielded Twisted-Pair Cable, Unshielded Twisted-Pair Cable Coaxial Cable (thin and thick), Fiber-Optic Cables
2	Lab
1	Workstation and Server Relationships: Peer-to-Peer Networks, Client/Server Networks
2	Lab
1	Ethernet : 10-Mbps and 100-Mbps Ethernet 10BASE5, 10BASE2, 10BASE-5, 10BASE-T Architecture, 100BASE-TX, 100BASE-FX
2	Lab
1	Local Area Networks (LANs), Wide-Area Networks (WANs), Metropolitan-Area Networks (MANs), Wireless Networking, Wireless LAN Organization and Standards, Wireless Devices and Topologies, Home Network, Inter network
2	Lab
1	Introduction to OSI Model, Layers in the OSI Model, Protocols of OSI layers
2	Lab
1	<b>TCP MODEL</b> : Introduction, Layers, Protocols
2	Lab
1	Addressing : Physical Address, Logical Address, Port Address, IP version 4
2	Lab
1	Classification of networks
2	Lab
1	Introduction to Sub netting
2	Lab
Final Examination	

**17. Peer review**

This course book has to be reviewed and signed by a peer. The peer approves the contents of your course book by writing few sentences in this section.

*Dr. Essen Bakir Khanber*

*Lecturer at the computer Science Department.*

**18.**

**Dr.Lway Faisal Abdulrazak**

**Dr. Lway Faisal Abdulrazak**



**Main Lecturer incharged**

**Head of The Department**