Department of Computer Science

College of Science

University of Cihan- Sulaimanyia Campus

Subject: Computer Networks

Course Book – Year 4th.

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

Academic Year: 2024/2025

Course Book

1. Course name	**Computer Networks**
2. Lecturer in charge	**Dr. Lway Faisal Abdulrazak**
3. Department/ College	**Computer Science Dep. / Collage of Science**
4. Time (in hours) per week	**Theory: 2 hrs** **Practical: 2 hrs**
5. Office hours	**2 hours**
6. Course code	**CSC24100**
7. Teacher's academic profile	**https://scholar.google.com/citations?user=ldE4GNEAAAAJ&hl=en**
8. Keywords	**Networking**
9. Course overview: 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.	
10. Course objective: 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.	
11. Student's obligation 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.	
12. Forms of teaching **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, 4th edition, Andrew S. TANENBAUM 2003**
2. **Computer Networks and INTERNET, 4th edition, Douglas E. COMER 2004**
3. **Data and computer communications, 8th 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	**TCP MODEL** : 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. *Essen Bakir Khanber***

Main Lecturer incharged **Head of The Department**