Network fundamentals

1- General Course Information

The content of this course includes topics in the body of knowledge recommendations of Computing Curricula 2001, a joint undertaking of the Computer Society of the Institute for Electrical and Electronic Engineers (IEEE-CS) and the Association for Computing Machinery (ACM) to develop curricular guidelines for undergraduate programs in computing. Specifically,

* The Evolution of Computer Networks
* The Application Layer
* The Transport Layer
* Network Management
* Network Layer and Routing
* Link Layer and Local Area Networks

2-Essex University

1- Overview of data communication

2-Client/server communication and intermediary network devices

3. The OSI and TCP/IP networking models

4. Application layer functionality and protocols

5. OSI transport layer

6. OSI network layer

7. IPv4 addressing

8. OSI data link layer

9. OSI physical layer.

4-Foothill College Course Syllabus Fall 2012

1- Communicating over the Network
2- Application Layer Functionality
3- OSI Transport Layer Chapter
4- OSI Network Layer Chapter
5- Addressing the Network – IPv4
6- OSI Data Link Layer Chapter
7- OSI Physical Layer Chapter

8- Ethernet Chapter
9- Planning and Cabling Networks

4- University of Bahrain

Computer Networks and the Internet. Physical Media. Internet Backbones. Packet-Switched Networks. Protocol Layers. Application Layer. HTTP, FTP, Electronic Mail, DNS. Socket Programming. Web Servers. Transport Layer. Multiplexing and Demultiplexing. Reliable Data Transfer. Congestion Control. Network Layer and Routing. The Internet Protocol (IP). IPv6. Multicast Routing. Mobility.

<table>
<tr><td colspan="2" align="center">University of Technology
Computer Engineering Department
Academic Year 2023-2024
2st Year- Second semester- Computer Networks Eng.
Branch</td><td></td></tr>
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CE-**SW234**	**Computer Network fundamentals**	**2 Hr/Week**	**2 Units**

Contents of syllabus	Hours
Overview of data communication over networking	**2**
what are the Computers Networks **Historical Review**	**2**
Applications and services **Types and classification**	**4**
Transmission media **Topologies**	**4**
Client/server communication and intermediary network devices	**2**
Reference Models **OSI model** **The OS Application layer functionality and protocols** **The OSI transport layer** **The OSI network layer** **The OSI data link layer** **The OSI physical layer.** **TCP/IP model**	**6** **4**
Addressing of IP network **Glassful Addressing** **Network Address Translation (NAT)** **Classless Addressing**	**6**

References:
Textbook:
Computer Networks, a System approach, 4th Edition, by Larry Peterson, MK 2007
TCP/IP Protocol Suite, 4rd edition, by B. A. Forouzan, McGraw Hill 2010 (focus on the internet with nice illustration animations)