



# **CEN303 – Data Communications and Computer Networks**

## **Overview**

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# Overview

- Goal of this Course
- Grading
- Contents of the course
- Tentative Schedule

# 1. Course Goals

Student will understand :

- The basic principles of computer networks
- The objectives and applications
- The Internet and its protocols
- The key design principles used to build networks and the Internet

## 2. Grading

<input type="checkbox"/> Midterm Exam	30%
<input type="checkbox"/> Quizzes	30%
<input type="checkbox"/> Final Exam	40%

### 3. Tentative Schedule

- ❑ Midterm 1 Exam: **Week 10 – Tuesday 26 / 3 / 2024**
- ❑ Quizzes: **Set of 5 to 6 (best 3)**
- ❑ Final Exam: fixed in edugate

# 4. Course Description

This course will provide students with a thorough understanding of the basic principles of computer networks,

**Introduction To Communication Systems and Computer Networks:** Network Essentials, Features, Models, and Components, Classification of Telecommunication and Computer Networks and Internet Technology;

**Overview Of Computer Networks** and Protocols (OSI) And (TCP/IP) Protocols;

**Application Layer:** Protocols, Client-Server / P2P Architectures, Web and HTTP Protocol, File Transfer and FTP Protocol, Electronic Mail and SMTP & POP3/IMAP Protocols, DNS;

**Transport Layer:** Services, Multiplexing and Demultiplexing, Data Transfer Reliability, Flow Control, Congestion Control, TCP, UDP Transport Protocols, and socket programming;

**Network Layer:** Routing and Routers, The IP Protocol, Routing Algorithms (LS, DV, ...), Routing In The Internet (RIP, OSPF, BGP), Broadcast and Multicast Routing;

**Introduction To Network Security;**

**Overview of data Link Layer** and wireless communication;

## 5. Reference Books

- **J. Kurose and K. Ross ( text book)**
  - “Computer Networking: A Top-Down Approach Featuring the Internet” 1<sup>st</sup> Ed., Addison-Wesley, '00
- A. S. Tanenbaum “Computer Networks”, 4<sup>th</sup> Ed., Prentice-Hall, '03.
- W. Stallings
  - Computer Networking with Internet Protocols;
- Richard Stevens
  - “TCP/IP Illustrated,” Vol.1, Addison-Wesley, '94. -

No food, gum, drinks (including bottled drinks), or tobacco products are allowed in classrooms at any time.