

THE UNIVERSITY OF TEXAS AT TYLER
DEPARTMENT OF COMPUTER SCIENCE
COSC 5350 – Data Communication and Networks
Spring 2024

Instructor: Nary Subramanian, Ph.D.
COB 315.11
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Lecture: Tuesday/Thursday 3.30 pm to 4:50 pm COB 207

Office Hours: Tues and Thurs 8:00 am to 9:30 am

Text: *Computer Networking: A Top-Down Approach* by James Kurose and Keith Ross, 8th (Eighth) Edition, Pearson Publishing, ISBN 978-0-13-668155-7.

Catalog Description: An in-depth study of data communications and networking. Covers the architecture, design and implementation of computer networks. Topics include data transmission, switching, protocols and security.

Course Description: Computer networking has become the most important modern technology that has helped connect people from across the world. This is especially so with the largest public network, the Internet, that has enabled people access information from anywhere, anytime, and anyhow. In this course we will understand the structure of the Internet and the basics of computer networking so that you can design your own networks for yourself, your employer, or for your research. Recently mobile Internet access has exceeded fixed Internet access and this trend is expected to grow with the advancement of Internet of Things (IoT) technologies. We need to understand what mobile networking technologies are and be ready to leverage their potential in our network designs. We will also study network security so that the networks we design are resistant to attacks. All relevant course material will be posted on Canvas.

Grading: Grading will be based on exams and homework. For each homework assignment on Canvas you will get **one** attempt only. Late submissions will not be graded. There will be one mid-term exam and one final exam as per schedule given later. Weights are given below:

| | |
|--------------|-----|
| Midterm Exam | 40% |
| Final Exam | 40% |
| Homework | 20% |

Grading Policy:

| Points | Grade |
|-----------|-------|
| ≥85 | A |
| ≥75, < 85 | B |
| ≥65, < 75 | C |

Course Objectives:

1. Understand the principles of data communications and network
2. Analyze different networking options
3. Design a networked system given the requirements
4. Compare different networking technologies
5. Apply security principles to secure data in transit.

Census Date: January 29th, 2024

Tentative Schedule:

| <u>Week</u> | <u>Chapter</u> | <u>Topic</u> |
|-------------|---|------------------------------------|
| 1 | 1 | Computer Networks and the Internet |
| 2 | 1 | Computer Networks and the Internet |
| 3 | 2 | Application Layer |
| 4 | 2 | Application Layer |
| 5 | 3 | Transport Layer |
| 6 | 3 | Transport Layer |
| 7 | 4 | Network Layer: Data Plane |
| 8 | MIDTERM EXAM, Tuesday, March 5 th , 2024 | |
| 9 | 5 | Network Layer: Control Plane |
| 10 | 6 | Link Layer and LANs |
| 11 | 6 | Link Layer and LANs |
| 12 | 7 | Wireless and Mobile Networks |
| 13 | 7 | Wireless and Mobile Networks |
| 14 | FINAL EXAM, Thursday, April 25 th , 2024 from 3.30pm to 5.30pm | |

Attendance and Make-up Policy

It is in your interest to attend all classes. There will be no make-ups for missed exams; missed exams will get a grade of zero.

University Policies

University policies can be seen at <https://www.uttler.edu/academic-affairs/files/syllabuspolicy.pdf>. They are given below as well.